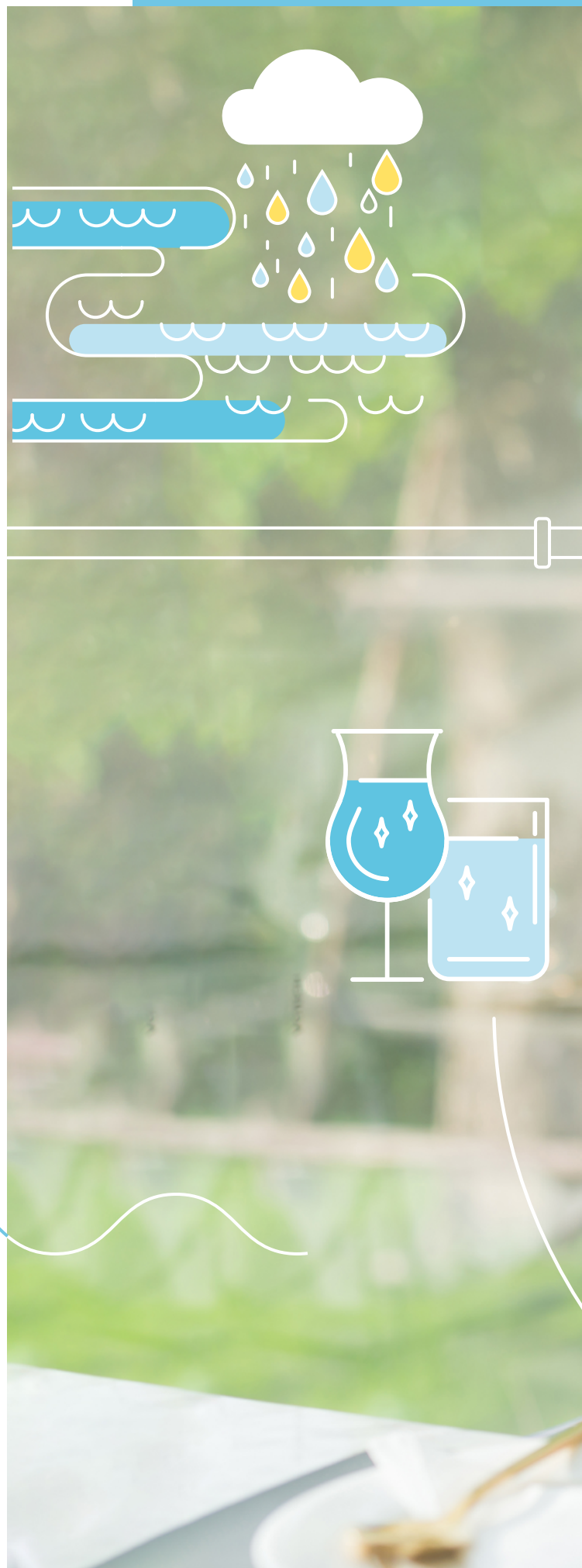
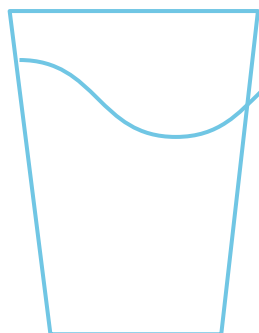


同心 關注

WE CARE

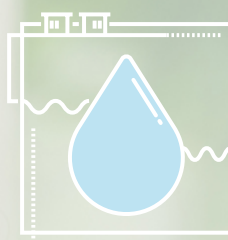
我們一直以本港市民的生活與福祉為依歸。為此，我們致力推行「全面水資源管理策略」及「食水水質管理系統」，並適時作出檢討和調整，確保香港供水長遠的可持續性、應變能力及安全性。與此同時，我們繼續具策略地及有系統地投放資源在水務資產上，以加強其可靠性及運作上的可持續性。

We care about the lives and livelihoods of all people in Hong Kong, both today and in the future. For this reason, we are committed to implementing our Total Water Management Strategy and Drinking Water Quality Management System with timely reviews and adjustments to ensure the long-term sustainability, resilience and safety of our water supplies. At the same time, we continue to invest in our assets in a strategic and systematic manner, to enhance their reliability and operational sustainability.



完善規劃 共創穩健未來

Meticulous planning today
for a promising tomorrow



2019

全年食水供應量

Annual Quantity of
Fresh Water Supply

總共 **996** 百萬立方米

Total **996** million m³



全面水資源管理 Total Water Management



萬宜水庫
High Island Reservoir

建立可持續發展的未來 Building a Sustainable Future

水務署致力為香港現今及未來提供可靠的供水和確保水資源的可持續性，並以兼顧香港的經濟及生態發展為原則，守護現有資源。

At WSD, we are committed to providing reliable water supplies and ensuring water sustainability for Hong Kong's current and future generations, safeguarding existing resources in synergy with the city's economic and ecological development.

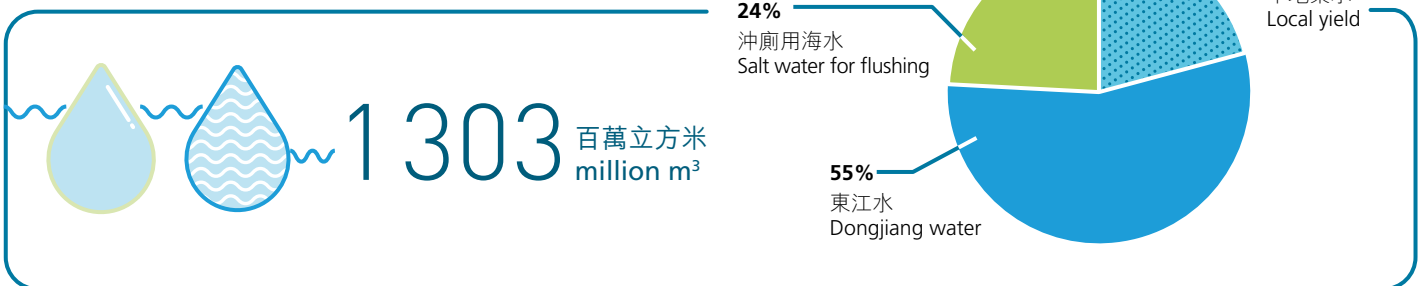
現有水資源

本港的水資源包括本地集水區收集的雨水、由廣東輸入的東江水及沖廁用海水。多年來有賴這些水資源，香港得以享有可靠的用水供應。

EXISTING WATER RESOURCES

Hong Kong's water resources comprise rainwater from local catchments, imported water from Dongjiang in Guangdong, and salt water for toilet flushing. These water resources have allowed Hong Kong to enjoy a reliable water supply over the years.

二零一九年全港總用水量 Total Water Consumption of Hong Kong in 2019



二零一九年按用水類別劃分的食水用量 Annual Fresh Water Consumption by Sector 2019

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	558 (56.0%)
工業用水 Industrial	59 (5.9%)
服務業及商業用水 Service Trades	248 (25.0%)
政府用水 Government Establishments	48 (4.8%)
建築及船舶用水 Construction & Shipping	19 (1.9%)
臨時淡水沖廁 Flushing	64 (6.4%)
食水總用量 Total Fresh Water Consumption	996 (100%)

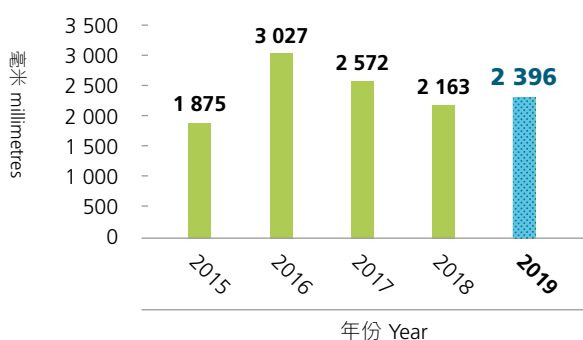
本地集水

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。我們採用多重屏障方式，在各集水區監控發展、定期進行巡查及監測水質情況，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，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

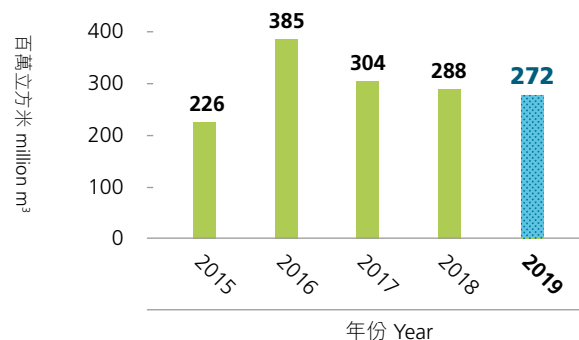
The yield is collected in catchment areas, most of which are within Country Parks that are well regulated and protected from contamination. We adopt a multiple-barrier approach to control development, regularly conduct inspections and monitor water quality in these areas to ensure water safety. In terms of quantity, local yield is not stable every year, and can be subject to drastic fluctuations. Coupled with the effect of climate change, we predict even greater fluctuations in the future.

二零一五年至二零一九年全年降雨量 Annual Rainfall 2015 – 2019



註：長期平均降雨量為2 399毫米
Note: Long-term mean rainfall is 2 399 mm

二零一五年至二零一九年全年淨集水量 Annual Net Yield 2015 – 2019



東江水

我們根據本港用水的實際需要，在粵港供水協議訂明的每年供水量上限範圍內輸入東江水，以彌補本地集水量不足，滿足用水需求。在本地集水量較多的年份，我們會減少輸入東江水。這靈活彈性的供水安排既可避免浪費水資源，同時亦節省輸水成本。

在二零一九至二零年度，我們踏入了二零一八年至二零年為期三年的東江水供水協議的最後一年。參照粵港兩地相關的消費物價指數及人民幣兌港幣匯率變化，協議內的水價按年上調0.3%。二零二零年，本港輸入東江水的支出預計為48.21億元，而二零一八年及二零一九年的支出分別為47.93億元及48.07億元。

沖廁用海水

目前，我們的海水供應網絡覆蓋全港約達85%的人口，每年供應約3億立方米的海水，節省了同等分量的食水，比率約佔總供水量的24%。於二零一九至二零年度，海水供應網絡已延伸至薄扶林、屯門東及元朗的住宅大廈，每年節省約50萬立方米的食水。

Dongjiang Water

We import Dongjiang water as needed to fill the gap between Hong Kong's local yield and water demand, up to the annual supply ceiling stipulated in the supply agreement between Guangdong and Hong Kong. If more local yield is available in a particular year, less Dongjiang water is imported. This flexible arrangement avoids wasting water resources and saves pumping costs.

In 2019/20, Hong Kong entered the third year of its three-year Dongjiang water supply agreement for 2018 to 2020. Under this agreement, Dongjiang water prices increase by 0.3% annually, based on the changes in the relevant consumer price indices of Guangdong and Hong Kong and the exchange rate between the Renminbi and the Hong Kong dollar. In 2020, Hong Kong's expenditure on Dongjiang water will be \$4,821 million, compared to \$4,793 million and \$4,807 million paid in 2018 and 2019 respectively.

Salt Water for Flushing

Currently, our salt water supply network covers about 85% of the population. About 300 million m³ of salt water is supplied per annum, conserving an equivalent amount of fresh water, i.e. about 24% of the total water supply. In 2019/20, we connected the salt water supply network to residential buildings in Pok Fu Lam, Tuen Mun East and Yuen Long, which saved about 0.5 million m³ of fresh water per annum.

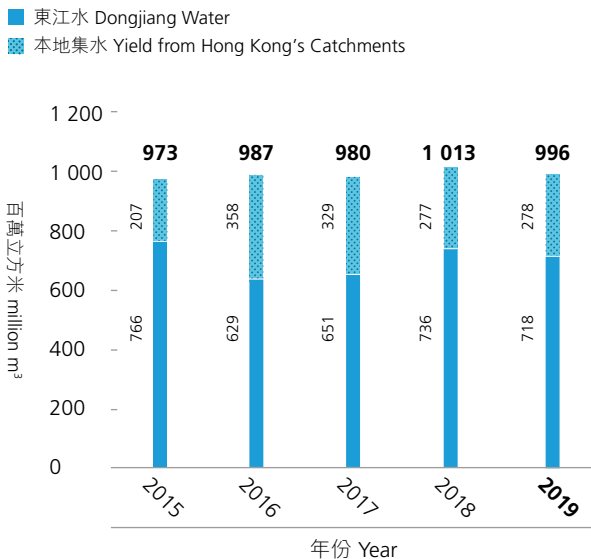
點滴話你知 DO YOU KNOW?

一九五零年代末，香港引入海水沖廁，至今仍是全球少數廣泛使用海水沖廁的地方之一。

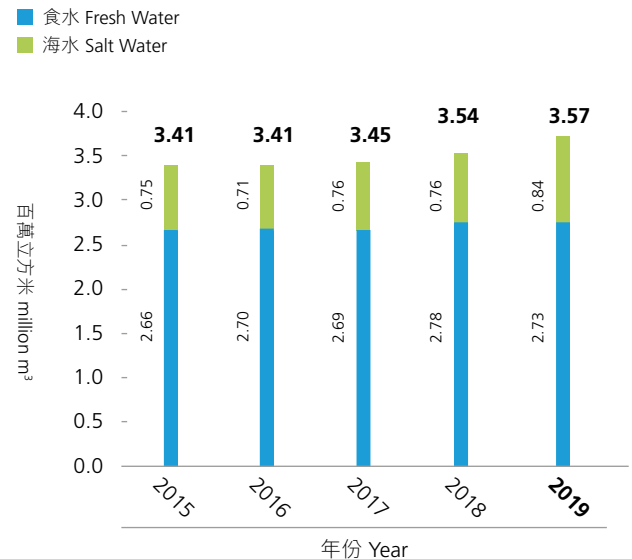
Using salt water for toilet flushing was introduced in Hong Kong in the late 1950s. Hong Kong has been one of the few places in the world that extensively applies salt water for flushing.



二零一五年至二零一九年全年食水供應量 Annual Quantity of Fresh Water Supply 2015 – 2019



二零一五年至二零一九年日均用量（食水及海水） Total Average Daily Water Consumption (Fresh Water and Salt Water) 2015 – 2019



全面水資源管理策略2019

為了於本港推行更穩健及可持續的水資源系統，以裨益民生及支持香港的長遠發展，自二零零八年起，我們推行「全面水資源管理策略」（「策略」），倡議先節後增，藉推廣節約用水以控制食水需求增長，並開拓新水源。為配合社會發展需要，我們於二零一九年完成了「策略」的檢討及更新工作，將氣候變化、人口增長、經濟發展等多項挑戰及本地因素納入考量。是次檢討更新了至二零四零年的用水需求及供應推算，制定新的水資源管理措施，並對現行措施作出必要的調整，以確保香港供水長遠的可持續性。

展望至二零四零年

用水需求推算是以政府統計處的基線人口作為估算基礎，按預期的人口增長推算，在不採取任何用水需求管理措施的情況下，香港於二零四零年的每年食水需求估計將增至11.1億立方米。

TOTAL WATER MANAGEMENT STRATEGY 2019

To achieve a more secure and sustainable water resource system in Hong Kong to benefit people's livelihoods and support the long-term development of Hong Kong, we have implemented the Total Water Management Strategy (the Strategy) since 2008 which advocated containing the growth of water demand by promoting water conservation and exploiting new water resources. To keep up with society's development, we completed a review on the Strategy with timely updates in 2019, taking into account a number of contemporary challenges and local realities such as climate change, population growth and economic development. The review updated water demand and supply projections up to 2040 and sought for new water management initiatives and adjustments to the existing measures, if necessary, for ensuring the long-term sustainability of water supply in Hong Kong.

Projection to 2040

The water demand projection was conducted with the baseline estimated population provided by the Census and Statistics Department. Under the expected population growth scenario, the annual fresh water demand is projected to increase to 1 110 million m³ in 2040, in the absence of water demand management measures.

參與檢討「策略」的國際專家顧問經過對現時食水供應安排的評估，並結合因氣候變化而導致每年降雨量減少等因素，確認在實施用水需求管理措施的情況下，現時供水安排能夠保障香港擁有可靠的水資源供應至二零四零年，即使遇上百年一遇的極端乾旱情況，亦能夠維持穩定的供水。

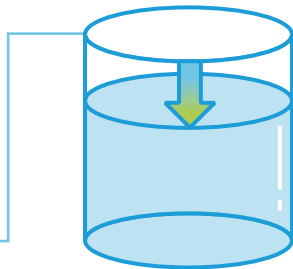
Having assessed the current fresh water supply arrangements taking into consideration annual rainfall reductions due to climate change, the international experts of the consultants whom we engaged to conduct the Strategy review confirmed that the current water supply arrangements with implementation of demand management measures will secure water supply reliability for Hong Kong up to 2040 such that round-the-clock water supply can be maintained even under extreme drought conditions with a return period of one in 100 years.

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 m³



實用水需求管理措施
的情況下：
With demand
management measures:

990 百萬立方米
million m³

雙管齊下

更新後的「策略」（「策略2019」）採取雙管齊下的方式，著重控制食水需求增長及提升食水供應的應變能力，並在國際專家評估下，針對應變能力、經濟因素及可持續性三項因素，制訂各項應對措施的優次。控制食水需求增長的主要措施包括加強節約用水的宣傳、管理用水流失，以及擴大使用次階水作非飲用用途。我們已推行多個節約用水及管理用水流失的項目，提高公眾及其他持份者的惜水意識，鼓勵大家身體力行珍惜寶貴的水資源。有關各項措施的細節已載列於第23頁至35頁「控制食水需求增長」章節中。在供水管理方面，建造第一階段將軍澳海水化淡廠有助提升本地供水應變能力，以應對氣候變化造成可靠供水減少的影响。有關此工程項目的細節已載列於第36至37頁「海水化淡」章節中。

「策略2019」措施落實後，香港的水資源將變得更多元化，其組合如下：

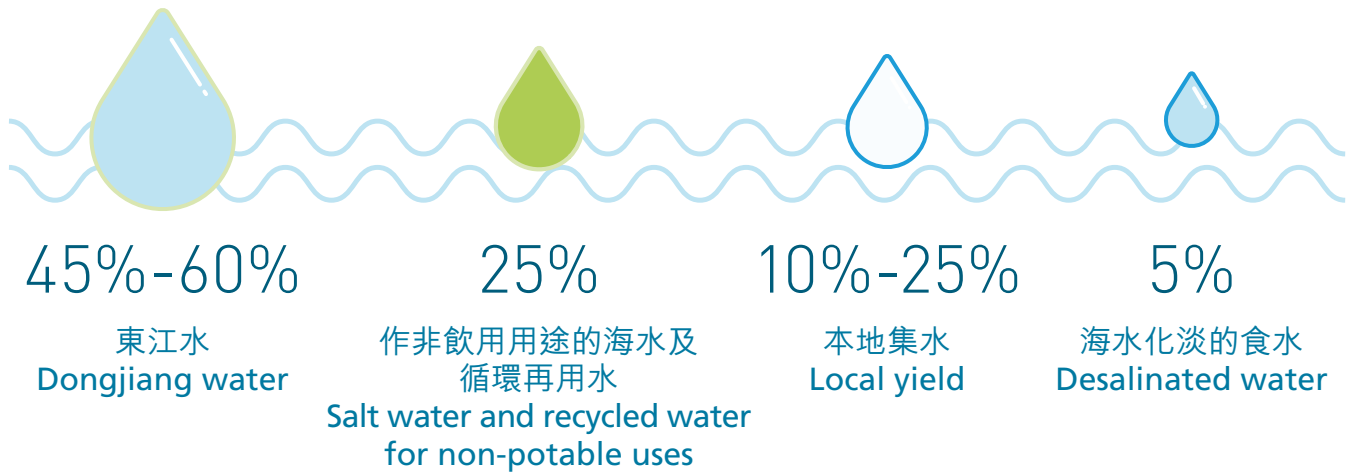
A Two-Pronged Approach

Our updated Strategy (Strategy 2019) adopts a two-pronged approach with emphasis on containing fresh water demand growth and building resilience in the fresh water supply using a prioritised list of initiatives ranked by their resilience, economics and sustainability, based on the evaluations of the international experts. The key initiatives of containing fresh water demand include strengthening promotion of water conservation, water loss management and expansion of use of lower grade water for non-potable purposes. We have launched a number of water conservation and water loss management projects to empower the public and other stakeholders to take actions to cherish our valuable water resources. Details of these initiatives are covered in Containing Fresh Water Demand Growth on Pages 23 to 35. On the front of supply management, the construction of the first stage of the desalination plant in Tseung Kwan O helps build resilience in fresh water supply capable of coping with reduction of reliable water supply under the adverse climate change effect. Details about the desalination project are covered in Seawater Desalination on Pages 36 to 37.

With the measures under the Strategy 2019 in place, the water resources in Hong Kong will be diversified with the following estimated composition:

根據「策略2019」預計的香港水資源組合

Estimated Composition of Hong Kong's Water Sources under Strategy 2019



持續監察及檢討

我們亦制訂了一系列後備措施，確保有足夠能力應對比預期更嚴峻的情況。若未來情況與目前的估算有所偏差，我們即可執行適當的後備應對方案。我們將繼續定期檢討「策略2019」，並適時作出更新以應對各種變化，如用水需求、氣候變化對本地集水所造成的影響，以及各水資源的成本效益、相關科技發展、可靠性及對環境的影響等。

控制食水需求增長

控制食水需求增長是「策略2019」中管理用水需求的一大重點。政府於二零一七年及二零一八年的《施政綱領》中承諾，最早於二零三零年達致人均食水用量減少10%的目標（二零一六年為基準年）。為此，我們正推行三項主要措施，包括節約用水、管理用水流失，以及擴大使用次階水作非飲用用途。

節約用水

我們採取多管齊下的措施宣傳節約用水，全力推行惜水文化，鼓勵公眾實踐惜水生活。我們會繼續努力不懈，透過政府及公眾攜手合作，共同應對未來嚴峻的挑戰，邁向成功。

Continuous Monitoring and Review

We have also formulated a host of backup measures to ensure our ability to adapt to worse-than-expected scenarios. If the future conditions deviate from our present projections, we can implement appropriate backup measures as necessary. We will continue to regularly review Strategy 2019 and update it as needed to adjust to changes in water demand and the effect of climate change on local yield, as well as the cost-effectiveness, technological development, reliability and environmental impact of various water resources, and so forth.

CONTAINING FRESH WATER DEMAND GROWTH

Containing fresh water demand growth plays a pivotal role in Strategy 2019's demand management. As pledged in the Policy Agenda 2017 and 2018, the Government is striving to reduce Hong Kong's fresh water per capita consumption by 10% by 2030 at the earliest, using 2016 as the base year. We are taking forward three main initiatives to achieve this goal: water conservation, water loss management, and expansion of use of lower grade water for non-potable uses.

Water Conservation

To promote water conservation, we use measures that drive cultural and behavioural changes in the public to cherish water. We are continuously seeking synergies created by collaborations with the Government and the public to overcome the acute challenges ahead and lead us to success.

專題故事 Featured Story

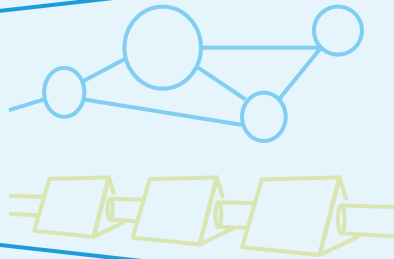


作為二零一九年的其中一項重要里程碑，我們於二零一九年十二月十三日正式啟用了位於水務署天水圍大樓的全新水資源教育中心——「水知園」。這個全新的永久設施取代旺角辦事處的臨時水資源教育中心，提供互動平台，讓公眾了解水資源和節約用水的重要性。

2019's major milestones included commissioning a new Water Resources Education Centre, namely "H₂OPE Centre", in our Tin Shui Wai Building on 13th December 2019. This new, permanent facility followed the relocation of the temporary Water Resources Education Centre at our Mong Kok Office. Our new facility serves as an interactive platform that helps the public learn about water resources and the importance of water conservation.

12 主題展區
exhibition zones

>50 不同的展品
different exhibits



全新水資源教育中心的展覽區面積較之前增加了1.4倍至約720平方米，設有12個主題展區，展示50多件不同展品。參觀者可以透過深入淺出的互動遊戲和展品，認識更多有關水資源和節約用水的豐富資訊。

The new centre's exhibition area has been expanded 1.4 times to 720 m², with more than 50 different exhibits spread throughout 12 exhibition zones. Through interesting interactive games and displays, the centre offers abundant information about water resources and water conservation.



中心設有**立體球幕影院**，將有關水資源的資訊活靈活現地展示在參觀者眼前，其中動畫電影《超級沙瓦多》生動地講述一個保護環境及拯救地球的故事。

The centre's **3D dome theatre** offers visitors an immersive experience that teaches about water resources, including "Super Salvador", an animated movie about environmental protection and rescuing the Earth.



「水+循環」展區讓小朋友變身小工程師，探索各種遊戲和任務，親身體驗水的循環過程，深入了解水資源。

The **“Water + Cycle”** exhibition zone lets kids become little engineers to learn about water cycle and gain a thorough understanding of water resources through various hands-on tasks and games.



「水+來源」展區設置一系列互動展品和遊戲，包括模擬於水塘釣魚、擔任水務督察等，藉此向參觀者介紹香港水塘和集水區。

The **“Water + Source”** exhibition zone introduces reservoirs and catchment areas in Hong Kong through an array of interactive exhibits and games, including simulated fishing in reservoirs and role-play as waterworks inspectors.



用水效益標籤計劃

為鼓勵客戶選用節水產品，我們於二零零九年推出「自願參與用水效益標籤計劃」。而有關計劃在截至二零二零年三月，已涵蓋沐浴花灑、水龍頭、洗衣機、小便器用具、節流器及水廁等器具。

我們亦正著力分階段實施強制性「用水效益標籤計劃」，自二零一八年二月一日起，所有住宅處所的廚房及所有處所的浴室和洗手間的水管工程，均須採用符合「用水效益標籤計劃」所規定的用水效益級別的產品。目前，我們正研究透過修改法例，將有關計劃由自願參與轉為強制實施，方便消費者選擇及購買具用水效益的產品。

用水效益最佳實務指引

為提升用水效益，我們一直積極倡導各政府部門的合作，共同為泳池、公園、街市、洗手間、垃圾收集站及懲教院所制訂用水效益最佳實務指引，提供平衡的節約用水措施建議，在無損整體服務水平的情況下，可實踐於日常運作之中。此外，我們亦致力與酒店及餐飲業的協會合作，為業界制訂用水效益最佳實務指引。這一切的努力均有助我們凝聚各界持份者，共同為節約用水作出更大的貢獻。

「齊來慳水十公升2.0」運動

於本財政年度，我們延續於二零一四年首次舉辦的「齊來慳水十公升」運動，呼籲公眾養成節約用水的好習慣，積極於日常生活中達致每人每日慳水十公升或更多。運動展開以來，我們為公共租住屋邨提供免費安裝節流器，藉此提升客戶的用水裝置效益，並計劃於二零二二年或之前為所有公共租住屋邨完成安裝工作。於二零一九年，我們舉辦了巡迴展覽及互動遊戲，將此安裝計劃宣傳並拓展至私人屋苑及私立學校。有賴公眾的大力支持和參與，此運動得以成功開展，有效地提高社會珍惜水資源的意識。



Water Efficiency Labelling Scheme

Launched in 2009, our voluntary Water Efficiency Labelling Scheme (WELS) encourages customers to use water-saving products. As of March 2020, this WELS covers showers for bathing, water taps, washing machines, urinals, flow controllers and water closets.

We have also been implementing our mandatory WELS in stages. Since 1 February 2018, the mandatory use of WELS products of prescribed water efficiency has been required in kitchens (domestic premises), and bathrooms and toilets (all premises) for all plumbing works. We are now working on legislative amendments to migrate voluntary WELS participation to mandatory implementation, to facilitate consumers' choices and purchases of water-efficient products.

Best Practice Guidelines

To enhance water use efficiency, we are leading inter-departmental cooperation to develop water management Best Practice Guidelines (BPG) for swimming pools, parks, markets, toilets, refuse collection points and correctional institutions, formulating balanced water-saving measures that can be implemented in day-to-day operations without compromising overall performance. We are also collaborating with hotel and catering associations on BPG for their sector's water usage. These water conservation efforts allow us to gather greater contributions from various stakeholders.

“Let's Save 10L Water 2.0” Campaign

This financial year, we continued our “Let's Save 10L Water” Campaign, which was first launched in 2014, to call for the public to actively reduce their daily domestic water consumption by 10 litres or more by developing water saving habits. Throughout the campaign, we have offered free installation of flow controllers in public rental

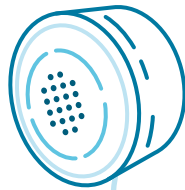
housing estates to save water by increasing the water efficiency of water devices, and targeted to complete these installations in all public rental housing estates by 2022. In 2019, we extended this initiative to private housing estates and private schools through roving exhibitions and interactive games. With the public's great support and participation, this campaign has succeeded in improving social awareness about cherishing water resources.

截至二零二零年三月，
As of March 2020,

171 000

個住戶來自
households in 146

個公共租住屋邨
public rental
housing estates



318

間幼稚園
kindergartens

870

個私人屋苑住戶
private estate
households

已安裝節流器。
have installed
flow controllers.



「創新節水花灑頭設計大賽」簡報會

"Innovative Water Efficient Showerhead Design Competition" Briefing Session



「創新節水花灑頭設計大賽」海報
Poster for "Innovative Water Efficient Showerhead Design Competition"



有關「私人屋苑免費安裝節流器」的巡迴展覽
Roving Exhibition for "Free Installation of Flow Controllers at Private Housing Estates"

於二零一九年，此運動亦贊助了多個企劃，鼓勵社區各界不同持份者積極節約用水。在二零一九年十一月，我們舉辦了「創新節水花灑頭設計大賽」，是香港首個以花灑頭為主題的環保比賽。是次大賽有關節約用水的新意念啟發了參賽者及公眾，同時宣揚使用節水裝置。決賽及頒獎禮分別擬定於二零二零年七月及十月舉行，每個組別的得獎作品將會在巡迴展覽中展出。我們亦將舉辦更多新活動，包括即將舉行的「挑戰沖涼4分鐘」及「全民慳水比賽」。

「惜水學堂」節約用水教育計劃

培養年青一代的節水意識是成功實現長遠節水目標的重要關鍵。因此，我們推行「惜水學堂」節約用水教育計劃，結合理論與實踐，加深學生對水資源的了解，提高他們對節約用水和水資源可持續發展的關注。於二零一五至一六年度，我們成功於小學推出此計劃，並於二零一八至一九年度將計劃延伸至幼稚園。

於二零一九至二零年度，我們以「珍惜點滴」為題舉辦了一場親子填色比賽，共收到超過13 000份參賽作品，鼓勵家長與孩子一起守護水資源。此外，我們還重新編制小學教材套內容，透過豐富的教案、課堂工作紙、教學影片及互動電子遊戲等，令教材更多元化，滿足教學需要。此教材套亦特別涵蓋探討氣候變化的課題，啟發學生思考，培養節約用水的習慣，引導他們更深入地了解和認識本地及全球的水資源。此外，我們計劃於二零二零至二一學年推出網上平台，以協助學校推行此計劃。

In 2019, this campaign also sponsored various programmes encouraging different stakeholders in the community to actively conserve water. In November 2019, we launched our Innovative Water Efficient Showerhead Design Competition, the first eco-friendly competition for showerheads in Hong Kong. This competition inspired contestants and the public with new ideas about water conservation and promoted the use of water-efficient devices. The Finals and Award Ceremonies have been scheduled for July and October 2020 respectively. The winning water-efficient devices for each section will be showcased in roving public exhibitions. More new initiatives will be coming soon, including our upcoming 4-minute Shower Challenge and Water Saving Competition.

“Cherish Water Campus” Integrated Education Programme

Nurturing the younger generations is instrumental for successful long-term water conservation. Our “Cherish Water Campus” Integrated Education Programme broadens students’ knowledge about water resources and raises their awareness about water conservation and water sustainability by integrating theory with practice. We successfully rolled out this programme in primary schools in 2015/16 and in kindergartens in 2018/19.

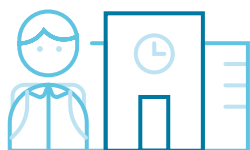
In 2019/20, we organised a parent-child colouring competition under the theme “Save Every Drop” to encourage families to work together to cherish water, receiving over 13 000 entries. In addition, we revamped our teaching kit for primary schools to better meet teaching needs through diversified teaching materials, including lesson plans, worksheets, teaching videos and interactive electronic games. The kit also featured climate change discussion topics to cultivate students’ reflection and water-conservation behaviour, and to strengthen their understanding and awareness of local and global water resources. We plan to launch an online portal during the 2020/21 school year to help schools implement this programme.

參與此計劃的學校包括：

Number of schools participated in this programme:

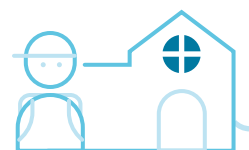
310

間小學
primary schools



290

間幼稚園
kindergartens



管理用水流失

「智管網」

我們正逐步設立「智管網」，以監控用水流失。「智管網」將香港的食水分配管網分成約2 400個監測區域，其中部分監測區域將劃分為水壓管理區域，並配有減壓裝置調節水壓至合適水平，以減少滲漏引致的用水流失。

截至二零一九年年底，我們已設立約1 300個監測區域，每個監測區域均裝有監測設備和感應器，以監測區域內用水流失的情況，從而實施針對性措施，包括：

- i. 主動探測滲漏；
- ii. 水壓管理；
- iii. 快速維修滲漏水管；及
- iv. 更換及修復水管。

另一方面，我們預計於二零二零年推出全新的「智能管網管理電腦系統」。該系統將協助收集各監測區域大量管網數據及分析它們用水流失的情況，從而定出針對性措施及跟進各監測區域的優次。

Water Loss Management

Water Intelligent Network

We have been progressively establishing our Water Intelligent Network (WIN) to monitor water loss. WIN divides Hong Kong's fresh water distribution networks into about 2 400 District Metering Areas (DMAs). Some of these DMAs are 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 of the end of 2019, we have established about 1 300 DMAs. Monitoring and sensing equipment will be installed in each DMA to monitor water loss therein and implement of the following targeted measures:

- i. active leakage detection;
- ii. pressure management;
- iii. speedy repair of water main leaks; and
- iv. replacement and rehabilitation of water mains.

On another front, our brand-new Water Intelligent Network Management System (INMS), expected to be in service in 2020, will assist in collecting the vast amount of network data from the DMAs and analysing water loss therein in order to determine appropriate measures and priorities of the DMAs for follow-up actions.

點滴話你知 DO YOU KNOW?

香港的供水管網總長度超過8 300公里，大部分埋藏於公路之下。為了確保地勢較高的位置有足夠的水壓，地勢較低的水管須承擔較大水壓，因而容易導致滲漏及用水流失。此外，擠迫的地下設施、繁忙的交通，以及頻繁的道路施工均有機會導致水管滲漏，要在龐大而複雜的地下供水管網中確定滲漏點是一項非常具挑戰性的任務。

Hong Kong's water supply network covers more than 8 300 km of pipes, which are mostly buried under public roads. To provide sufficient water pressure at higher elevations, the pipes at lower elevations are subject to high pressure, which can cause leaks and water loss, as can congested underground utilities, heavy traffic and frequent road works. Locating these leak points in our huge and complex underground water supply network was a very challenging task.



專題故事 Featured Story

「智管網」及與社區的共同努力 WIN and Our Collaborative Efforts with the Community

「智管網」的逐步推行讓我們能發現隱藏於私人處所的滲漏。其中兩個成功個案分別位於將軍澳魷魚灣村道及港島東區英皇道。在二零一九年，我們在「智管網」的協助下發現這兩個地點所屬的監測區域用水量異常，我們的專責團隊立即採取行動，在現場進行音聽視察、滲漏噪聲相關探測和測漏分段測試等，確定了上述住宅區內出現兩處嚴重滲漏點。透過與相關業主的合作，最終成功快速定位及修復這兩處滲漏點，避免每日流失逾4 200立方米食水，即等於約兩個標準奧運比賽泳池的容量。

我們亦採取了多項措施，協助業主、物業管理公司及承建商對私人水管進行滲漏檢測及修復，包括編制合同條款範本、滲漏檢測服務採購規格及本地滲漏檢測服務供應商參考列表等。此外，香港建造學院亦推出了地下水管測漏證書課程，為從業人員提供專業的培訓，促進行業發展。

The progressive implementation of WIN allows us to identify hidden leaks in private premises. In two notable cases in 2019, WIN helped us detect an unusual amount of water consumption in the DMAs in Yau Yue Wan Village Road, Tseung Kwan O and King's Road, Eastern District respectively. Our water loss management teams responded immediately, locating two very severe hidden leaks within these residential estates by conducting on-site visual and sounding inspections, leak noise correlation surveys and leak detection step tests. Through our collaborative efforts with the owners of the private mains, these leaks were successfully and speedily located and repaired, saving over 4 200 m³ of fresh water per day – enough water to fill up almost two standard-size Olympic swimming pools.

We also introduced a number of measures to help property owners, management agents and contractors conduct leak investigations and repairs on their private water mains, such as publishing sample contract clauses, specifications for procurement of leak investigation services, and a reference list of local leak detection service providers. Moreover, the Hong Kong Institute of Construction has launched a certificate course in leak detection for underground water pipes to provide enhanced professional training for leak detection practitioners and facilitate trade development.



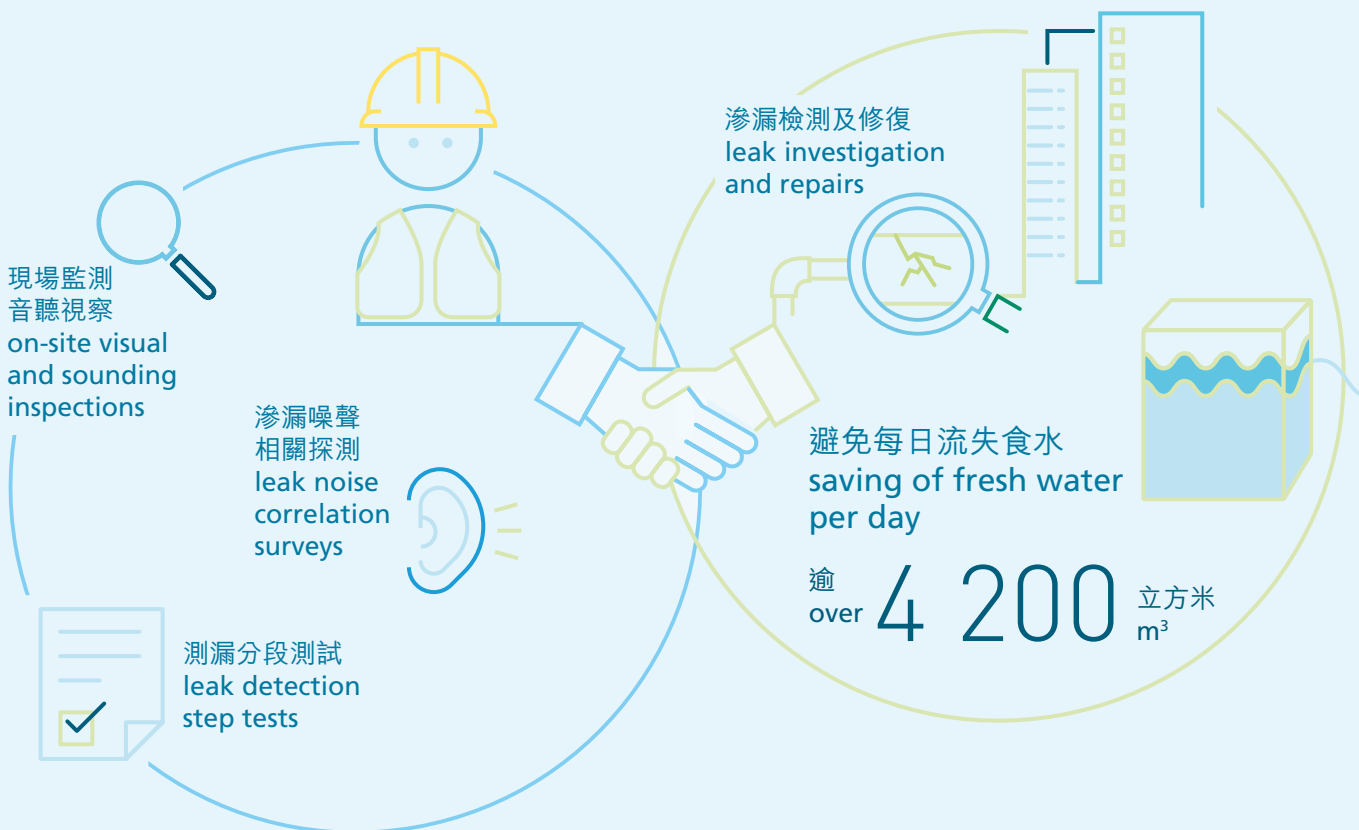
香港建造學院舉辦的地下水管測漏證書課程，為水管測漏人員加強專業培訓和促進行業發展。

The course on Certificate in Leak Detection on Water Mains offered by the Hong Kong Institute of Construction provides enhanced professional training for leak detection workers and facilitates trade development.



透過分析「智管網」所收集的水流量、水壓等數據，監察供水管網是否有出現滲漏的情況。

The water flow and pressure data as well as other data collected by WIN is analysed for monitoring of water loss of the water distribution network.



自動讀錶系統

所有合適的新私人發展項目、公營及政府發展項目，現均須按要求安裝自動讀錶系統。此系統提升讀錶準確度，還能為客戶提供適時用水數據及其他有用資訊，從而提高他們節約用水的意識。

擴大使用次階水

我們計劃擴展使用包括海水及循環再用水（即再造水、重用中水及回收雨水）的次階水作沖廁用途，其網絡覆蓋由香港總人口的85%增加至90%。計劃主要針對新發展區及現正使用食水沖廁的地區，務求進一步降低非飲用用途的食水需求。

擴大海水供應網絡

我們將繼續擴大使用海水沖廁的範圍，以降低食水用量。我們現正為東涌新市鎮建造海水供應系統，以替換該區目前使用的食水沖廁系統，有關工程預計於二零二三年竣工。新系統亦能供應海水至東涌新市鎮擴展區。

供應再造水

石湖墟污水處理廠目前正進行工程，以升格為具備三級污水處理水平的淨水設施。工程除了可提升該廠處理來自上水、粉嶺及周邊發展區污水的能力外，經淨水設施處理的排放水更可用作生產再造水作沖廁及其他非飲用用途，這不但可節省珍貴的食水資源，還能減少經處理的排放水的排放量。

我們已於二零一七年四月開始興建配水庫及敷設輸水幹管，為每年供應多達2 200萬立方米再造水至上水、粉嶺等新界東北地區作準備，以代替現時的食水沖廁。再造水生產設施、抽水系統及分配水管等餘下工程現正處於設計階段，待立法會財務委員會於二零二零至二一年度通過撥款後，

Automatic Meter Reading System

Requirements for Automatic Meter Reading (AMR) implementation have been incorporated in all appropriate new private developments, and new public and Government developments. Besides improving accuracy in water meter readings, AMR could raise customer awareness of water conservation through the timely provision of water consumption data and other useful information.

Expansion of Use of Lower Grade Water

We are targeting to expand network coverage of lower grade water including salt water and recycled water (viz. reclaimed water, recycled grey water and harvested rainwater) for flushing from 85% to 90% of Hong Kong's total population, particularly in new development areas and areas currently being supplied with fresh water for flushing, to further reduce our fresh water demand for non-potable uses.

Expansion of Salt Water Supply Network

We continue to expand the use of salt water for flushing to reduce fresh water consumption. Since Tung Chung New Town is currently being supplied with fresh water for flushing, we are constructing a replacement salt water supply system that will be completed in 2023. The salt water supply system will also supply salt water to Tung Chung New Town Extension.

Supply of Reclaimed Water

The Shek Wu Hui Sewage Treatment Works is being upgraded to an Effluent Polishing Plant (EPP) with tertiary treatment process. This will increase its capacity for treating sewage from Sheung Shui, Fanling and adjacent development areas, and allow us to produce reclaimed water by further processing the EPP's treated effluent. Using reclaimed water for flushing and other non-potable uses not only saves precious fresh water resources, but also reduces the amount of treated effluent discharge.

In April 2017, we began to construct a service reservoir and lay trunk water mains to pave the way for the supply of reclaimed water with a total volume of up to 22 million m³ per year to the northeast New Territories, including Sheung Shui and Fanling, which were being supplied with fresh water for flushing. The remaining works, including water reclamation facilities, a pumping system and local distribution mains, are now under design and targeted to commence

可望於二零二一年第三季動工，並於二零二四年第一季起分階段供應再造水作沖廁用途。

construction in the third quarter of 2021 upon funding approval from the Legislative Council Finance Committee during the 2020-21 legislative session. The supply of reclaimed water for flushing will be launched in phases starting from the first quarter of 2024.

預期成果 Anticipated Results

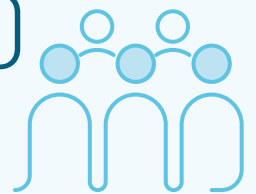
再造水的供應將由上水和粉嶺開始於二零二四年第一季起分階段落實，預計將：

To be launched in phases beginning in the first quarter of 2024, starting with Sheung Shui and Fanling, the supply will:

覆蓋約
Cover about

500 000

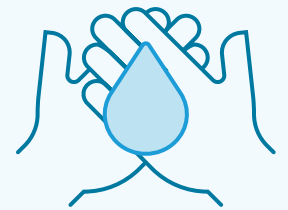
人口
people



每年節省食水

Save fresh water
per year

約
about 22 百萬立方米
million m³



中水重用及雨水回收

於二零二零年下半年，我們將在安達臣道石礦場用地發展項目中興建一套每日可處理最高達3 300立方米的中央中水重用系統。該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，以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。整個系統預計於二零二三年投入服務，以配合該區人口發展。

Grey Water Recycling and Rainwater Harvesting

In the second half of 2020, we will begin constructing a grey water recycling system with a maximum treatment capacity of 3 300 m³ per day at the Anderson Road Quarry Site 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. It will be commissioned in 2023 to tie in with the population intake of the development.

專題故事 Featured Story

政府牽頭採用中水重用及雨水回收系統 Government Leading by Example in Adopting Grey Water Recycling and Rainwater Harvesting



水知園
H₂OPE Centre

政府頒布了內部指引，積極在新的政府發展項目中採用中水重用及雨水回收系統，帶領業界採用這兩種系統。在此倡議下，截至二零一九年年底，約有110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，當中包括水務署天水圍大樓。

水務署天水圍大樓配備中水重用及雨水回收系統，每日處理量分別可達19立方米和9立方米。從大樓收集的所有污水（廁所污水除外），經處理後重用作沖廁用途。系統同時亦收集雨水，用於灌溉及清潔地板。

The Government is leading by example in adopting grey water recycling and rainwater harvesting systems by promulgating internal guidelines for installing these water recycling facilities in new government projects. Following this initiative, new buildings of approximately 110 government projects have been equipped with grey water recycling and/or rainwater harvesting systems as at end 2019, including the WSD Tin Shui Wai Building.

The WSD Tin Shui Wai Building is equipped with grey water recycling and rainwater harvesting systems with a design daily capacity of 19 m³ and 9 m³ respectively. All wastewater generated in the office building, excluding toilet streams, is collected and treated for reuse for toilet flushing. The systems also harvest rainwater for reuse in irrigation and floor cleansing.

為鼓勵私營企業採用中水重用及雨水回收，我們在二零一九年與香港綠色建築議會合作，共同就綠建環評新建建築2.0版進行檢討。在新推出的綠建環評中，私人樓宇若採用中水重用及雨水回收系統，將會獲得額外評級得分，藉此鼓勵更多發展商安裝相關設施。

To encourage the private sector to adopt grey water recycling and rainwater harvesting, we collaborated with the Hong Kong Green Building Council in 2019 to review the Building Environmental Assessment Method (BEAM) Plus Assessment Tool v2.0 for new buildings. Under the new BEAM Plus tool, bonus credit awards can be granted to private buildings that adopt grey water recycling and rainwater harvesting systems, hence incentivising more project owners to adopt these water recycling facilities.



為了加深公眾對循環再用水的認識，「水知園」特別設立展示區，利用玻璃窗配合動畫投射，向參觀者展示中水重用及雨水回收系統的運作。

To enhance the public's understanding of water recycling, the H₂OPE Centre illustrates the operation of its grey water recycling and rainwater harvesting systems through designated windows and projected animations.



提升食水供應的應變力

海水化淡

將軍澳海水化淡廠第一階段的落成將會提升香港食水供應的應變力。該廠將採用先進的逆滲透技術，而早前一項先導研究中已証實此技術能有效生產符合香港食水標準的食水。

將軍澳海水化淡廠第一階段工程的設計、建造及運作合約於二零一九年十二月正式開始。目前，承建商正著手設計該廠的各項組件，並開始建造部分設施。該廠預計將於二零二三年啟用，其後在合約的運作期內由承建商負責運作及維修。

BUILDING RESILIENCE IN FRESH WATER SUPPLY

Seawater Desalination

We are building resilience in our fresh water supply through our first stage desalination plant in Tseng Kwan O. This plant will adopt the latest reverse osmosis technology, which is confirmed to be effective in producing potable water that complies with the Hong Kong Drinking Water Standards in a previous pilot study.

The “Design, Build and Operate” contract for the first stage of the Tseung Kwan O Desalination Plant commenced in December 2019. Currently, the Contractor is focusing on designing various components of the desalination plant and constructing some of its facilities. The desalination plant is expected to be commissioned in 2023. Afterwards, the Contractor will be responsible for the plant’s operation and maintenance during its operation period.

預期成果 Anticipated Results

食水產量

Water production capacity

135 000 立方米/日
m³/day

可應付
To meet

5%

本港食水用量

fresh water demand

預留擴展空間為日後增加

Provision for future expansion of

食水產量至

Water production capacity to

270 000 立方米/日
m³/day

可應付
To meet

10%

本港食水用量

fresh water demand



將軍澳海水化淡廠構想圖

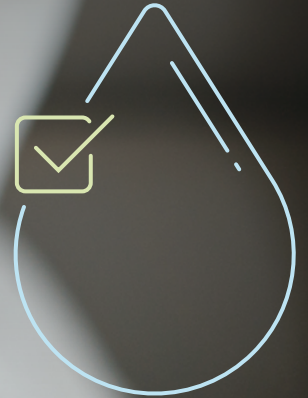
Photomontage of the Tseung Kwan O Desalination Plant

為了讓海水化淡廠融入將軍澳第137區未來的發展，並減少該廠對環境造成的影響，我們整合多項符合可持續發展的環保設施，採用可再生能源及低耗能工序，並以獲得「綠建環評新建建築」的鉑金級認證為目標。為加強與多個專業範疇的持份者之間的合作和協調，我們亦採用建築信息模擬 (BIM) 技術，將工程項目資訊集中於同一個數據庫內，確保設計流程更高效及便利後續審批。為響應發展局所推行的「建造業2.0」，我們將多項創新建造科技引入此工程項目，包括「供製造和裝配的設計」(DfMA)、「組裝合成」建築法(MiC)、「數碼工程監督系統」(DWSS)及智慧安全裝置。

We designed the desalination plant to make it blend in with future development in Tseung Kwan O Area 137 and minimise its impact on the environment by integrating sustainable green features and adopting renewable energy sources and low-energy consumption processes. Our goal is to obtain a Platinum rating for the plant under the BEAM Plus Scheme for New Buildings. We will also apply Building Information Modelling (BIM) to enhance collaboration and coordination between multi-disciplinary stakeholders, centralising project information in a common data environment to ensure a more efficient design process and to facilitate subsequent checking and approval. To echo "Construction 2.0" Initiatives advocated by the Development Bureau, we have adopted innovative construction technology such as Design for Manufacture and Assembly (DfMA), Modular Integrated Construction (MiC), Digital Works Site Supervision (DWSS) system and smart safety devices in this project.

食水安全及供水可靠性

Water Safety and Reliability



保障香港水質，確保供水可靠

Safeguarding Hong Kong's Water Quality and Reliability

水務署致力透過周全的水安全計劃及資產管理，為香港提供安全可靠的供水服務。

At WSD, we strive to provide Hong Kong with safe and reliable water supplies through comprehensive water safety plans and asset management.

食水安全

香港是全球其中一個擁有全面安全食水供應的城市。於水安全計劃下，本港所有食水均經我們的濾水廠嚴格處理，確保水質完全符合香港食水標準，以保障公眾健康。

WATER SAFETY

Hong Kong is one of those cities in the world that enjoy a completely safe drinking water supply. All of the city's drinking water is stringently treated at our water treatment works (WTWs), operating under a water safety plan to protect the public's health and ensure that our water quality fully complies with the Hong Kong Drinking Water Standards.

水質監測

我們全面監測整個供水系統的水質，包括集水區及相關設施、木湖抽水站的東江水接收點、水塘、濾水廠、配水庫、分配系統以至用戶水龍頭，抽取原水及食水樣本進行物理、化學、細菌學、生物學和輻射學化驗。在二零一九至二零年度，我們共抽取及測試了超過15萬個樣本。

確保東江水水質

廣東省當局負責確保輸港東江水的水質達到粵港供水協議所訂定的國家《地表水環境質量標準》(GB3838-2002)第II類的標準，亦即適用於作生活飲用水的地表水的最高國家標準。為此，廣東省當局採取多項措施及方案，包括興建污水處理廠、防止污染、敷設專用輸水管道、建立東江流域水資源水量水質監控系統及在深圳水庫興建生物硝化站等。另外，沙灣河流域水環境綜合整治工程於二零一九年完成，大幅降低因沙灣河排洪至深圳水庫時對東江水水質所造成的影響。

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。

Water Quality Monitoring

We comprehensively monitor Hong Kong's fresh water quality in the entire water supply system by conducting physical, chemical, bacteriological, biological and radiological examinations of raw water and drinking water samples throughout our entire water supply system, from catchment areas and related facilities, the receiving point of Dongjiang water at Muk Wu Pumping Station, impounding reservoirs to WTWs, service reservoirs, distribution systems, and up to consumer taps. In 2019/20, we collected and tested over 150 000 samples.

Maintaining Dongjiang Water Quality

The Guangdong authorities are responsible for ensuring that the quality of Dongjiang water delivered to Hong Kong meets the national standard for Type II water in the "Environmental Quality Standards for Surface Waters" (GB3838-2002) as stipulated in the Dongjiang water supply agreement, the highest national standard applicable for surface water abstracted for human consumption. To do so, they have used multiple measures and projects, including sewage treatment plant construction, pollution prevention, dedicated aqueducts, implementation of the Dongjiang Basin Water Quantity and Quality Monitoring and Control System, and a bio-nitrification plant at the Shenzhen Reservoir. In addition, the Comprehensive Remediation Project for the Water Environment of the Shawan River Basin was completed in 2019, significantly reducing the impact on Dongjiang water quality due to Shawan River flooding discharging into the Shenzhen Reservoir.

Via our online water quality monitoring system, we monitor Dongjiang water quality round-the-clock at our Muk Wu Pumping Station, where the Dongjiang water is received in Hong Kong.

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 Standard in GB3838-2002 (Type II)
		2017/18	2018/19	2019/20	
氨氮 Ammoniacal Nitrogen	毫克/公升 mg/L	0.04	0.04	0.03	≤0.5
錳 Manganese	毫克/公升 mg/L	0.03	0.03	0.03	≤0.1

食水

在水質監測計劃下，我們會在濾水廠、配水庫、供水接駁點，以及隨機抽選的公眾可達用戶水龍頭（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水質。此外，我們亦於二零一七年十二月起推行水質監測優化計劃，加強監測用戶水龍頭的水質。我們從18個區議會分區中隨機以每十萬人口抽取八個用戶的抽樣率抽出用戶，從他們處所的水龍頭中收集食水樣本，檢測有可能在內部供水系統出現的六種金屬，即銻、鎘、鉻、銅、鉛和鎳。

Drinking Water

Under our water quality monitoring programme, we collect drinking water samples from WTWs, service reservoirs, connection points and randomly selected publicly accessible consumer taps such as those in shopping centres, clinics, community facilities, sports grounds, markets, government offices and estate management offices to monitor the water quality. In addition, we launched our Enhanced Water Quality Monitoring Programme in December 2017 to strengthen our quality control at consumer taps in Hong Kong. With this programme we randomly select consumers from 18 District Council districts in Hong Kong based on a sampling rate of 8 premises per 100 000 population and collect drinking water samples from the taps in their premises to test for 6 metals – antimony, cadmium, chromium, copper, lead and nickel – which might be present in internal plumbing systems.

食水樣本

Drinking Water Samples

財政年度 Financial Year	食水樣本總數 No. of Drinking Water Sample
2015/16	85 711
2016/17	84 089
2017/18	82 389
2018/19	82 717
2019/20	81 221

註：以上的食水樣本是從濾水廠、配水庫、供水接駁點及公眾可達的用戶水龍頭抽取。

Note: These drinking water samples were taken at WTWs, service reservoirs, connection points and publicly accessible consumer taps.

水安全計劃

水安全計劃透過設立優良的水質管理系統，確保食水質素，有效地保障公眾健康。自二零零七年起，我們根據世界衛生組織（世衛）在二零零四年推出的《飲用水水質準則》，制訂和實施我們的水安全計劃。

Water Safety Plan

A Water Safety Plan (WSP) is an effective way to protect the public's health by setting up a good management system to ensure a high quality of drinking water. Since 2007, we have developed and implemented our WSP based on the 2004 Guidelines for Drinking-water Quality from the World Health Organization (WHO).

食水水質管理系統

於二零一七年，我們對水安全計劃進行檢討，並參考國際專家的建議及西澳洲的做法，制定了一套綜合的食水水質管理系統。在二零一九年，我們在恆常內部審核以外，亦進行了第三方審核，以驗證系統的效率，並提出改善

Drinking Water Quality Management System

In 2017, we reviewed and enhanced our WSP by developing an integrated Drinking Water Quality Management System (DWQMS), based on the recommendations of international experts as well as overseas practices in Western Australia. In 2019, in addition to our ongoing internal audits, a third-party audit was conducted to

建議。整體而言，該次審核確認我們的食水水質管理系統已發展得十分完善和能夠貫徹地推行，並受到密切監察。我們會將綜合審核結果及建議納入於系統中，以進一步提升系統成效。

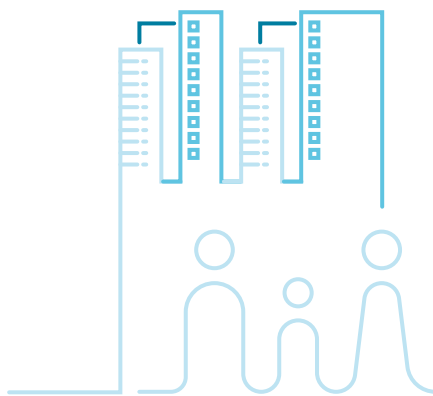
建築物水安全計劃

為協助業主及物業管理人實施建築物水安全計劃，我們制訂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及範本。

examine this system, verify its effectiveness, and identify areas for improvement. Overall, the audit confirmed that our DWQMS was well-developed, properly implemented and closely monitored. We will be incorporating the auditors' observations and recommendations into the system for further improvements.

Water Safety Plan for Buildings

To facilitate property owners and management agents implementing a Water Safety Plan for Buildings (WSPB), we developed guidelines and templates suitable for general buildings, as well as specific buildings such as schools, residential care homes for the elderly and hospitals.



超過 **1 800** 座建築物
More than **1 800** buildings

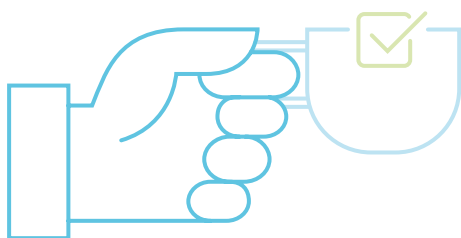
已推行此計劃，同時參加了大廈優質供水認可計劃 — 食水（管理系統）

have implemented the plan and joined the associated Quality Water Supply Scheme for Buildings – Fresh Water (Management System) (QMS)

涉及 **>400 000** 住戶
covering **>400 000** households

政府亦率先在旗下樓宇推行建築物水安全計劃，而香港房屋委員會亦承諾由二零一八年第四季起，於四年內在全港所有公共租住屋邨實施此計劃。

The government has also taken the lead on implementing the WSPB on its premises, and the Hong Kong Housing Authority has committed to implementing the WSPB in all of its public rental housing estates within four years since the fourth quarter of 2018.



所有公共租住屋邨共
The plan will benefit about

730 000 住戶
households

將受惠於此計劃（佔全港住戶總數的28%）
across all public rental housing estates
(28% of Hong Kong's total households)

私人住宅方面，行政長官在《2019年施政報告》中宣布推行水安全計劃資助計劃，以鼓勵業主及物業管理人於他們的樓宇實施建築物水安全計劃，進一步保障香港的食水安全。此計劃將於二零二零年七月開始接受申請。

For the private sector, in her 2019 Policy Address, the Chief Executive announced the launch of a Water Safety Plan Subsidy Scheme to encourage property owners and management agents to implement the WSPB on their premises to further safeguard Hong Kong's drinking water safety. The scheme will begin to accept applications in July 2020.

專題故事

Featured Story

全力推行建築物水安全計劃

Sparing No Effort to Facilitate the WSPB's Implementation

醫院的供水系統較一般樓宇更為複雜，通常設有中央冷熱水系統，若未有妥善管理，便會容易滋生微生物。當我們於二零一八年著手制訂相關水安全計劃範本時，成立了一個工作小組，成員包括醫院代表，務求運用他們的專業知識和實務經驗，為我們提供醫院內部供水系統的實用建議。經過深入研究及討論後，工作小組構思了一份醫院專用的建築物水安全計劃初稿，並於兩間醫院進行先導測試，結果令人滿意。初稿略經修訂後，正式範本已於二零一九年六月推出。在二零二零年三月，首間香港醫院按照我們的範本制訂建築物水安全計劃，並成為優質供水認可計劃的一員。此範本更獲得世衛接納，刊載於一個由世衛及國際水協會共同管理的網頁供全球參考。

Hospital plumbing systems are more complex than those in general buildings, and usually contain both centralised cold and hot water systems that can harbour microbial growth if not properly managed. When we set out to develop a WSP template for Hong Kong's hospitals in 2018, we established a working group composed of hospital staff with extensive knowledge and hands-on experience to advise us about hospital internal plumbing systems. After thorough study and discussion, the working group devised a draft hospital WSPB, with pilot trials in two hospitals that demonstrated good results. After fine-tuning the template, we officially launched it in June 2019. In March 2020, the first Hong Kong hospital finished implementing WSPB and joined the QMS. The template has also been well received by the WHO, and is posted on a website jointly managed by them and the International Water Association for international reference.

2018

為香港醫院制訂相關水安全計劃範本
set out to develop a WSP template for Hong Kong's hospitals



於兩間醫院進行先導測試
Pilot trials at two hospitals



Water Safety Portal LOG IN

Find WSP Resources

Key WSP Resources | Global Guidance | **Country-specific Guidance** | Training Materials | WSP Templates | Auditing / Verification | Hazard ID / Risk Assessment

Literature / Case Studies | Advocacy / Impact Assessment | Policies, Standards, Regulations | Climate Resilience | Management Procedures | All Resources

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Version 1 Uploaded 1. July 2019.

WSP template for hospitals in Hong Kong

by Water Supplies Department et al. 01. July, 2019

★★★★★ 0 comments

This template is prepared based on recommendations of the World Health Organization (WHO) with an aim to assisting the management staff of a hospital to develop and implement Water Safety Plan (WSP) to enhance water safety. It covers the essential elements of WSPs and common requirements applicable to the plumbing layout of hospitals. In addition to the English version, this resource is also available in traditional Chinese and simplified Chinese.

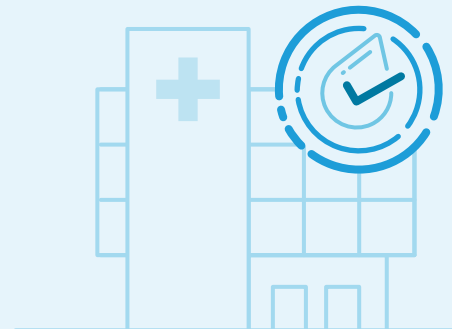
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2020

首間香港醫院按照我們的範本制訂建築物水安全計劃，並成為優質供水認可計劃的一員
 The first Hong Kong hospital finished implementing WSPB and joined the QMS



2019

推出正式範本及刊載於一個由世衛及國際水協會共同管理的網頁
 WSPB template officially launched and posted on website jointly managed by WHO and the International Water Association

加強水喉物料的規管及使用規定

在內部供水系統中，由於食水水箱的內層用料直接接觸食水，因此我們於二零一九年公布加強表面物料使用的監管，物料如瓷磚間隙填補物料、瓷磚、油漆/塗料和水泥產品均須要事先取得水務監督發出的「一般認可」，方可在新建水喉裝置的食水水箱中使用。

具備符合國際標準ISO 17067產品證書的水喉產品，由於在生產過程中已須要定期接受產品品質監察，因此可獲豁免「一般認可」水喉產品監察計劃的規定。其中，我們在二零一九年六月正式接納四個來自英國、澳洲及德國符合ISO 17067標準的產品認證計劃。我們鼓勵水喉供應商引入更多獲取上述標準證書的水喉產品予本地市場使用，全面提升水喉物料質素。此措施深受發展商及承建商等持份者歡迎。

檢討水務法例提升食水安全

為提升香港食水安全，我們繼續就《水務設施條例》(第102章)和《水務設施規例》(第102A章) 進行全面檢討，從而加強內部供水系統的設計、建造和保養及水喉物料的規管。我們亦為修例建議進行營商環境影響評估，並預計將在二零二零年年中完成有關建議的制訂工作，然後進行公眾諮詢。

Enhancing Plumbing Material Control and Commissioning Requirements

The internal surfaces of potable water tanks used for inside service are usually lined with materials that will directly contact potable water during the daily operations of the tanks. Because of this, in 2019 we announced enhanced controls over materials such as tile grout, ceramic tile, paint/coating and cementitious products, requiring that these lining materials obtain the Water Authority's General Acceptance (GA) before they could be used to construct potable water tanks in new plumbing installations.

Plumbing products with product certificates certified in accordance with International Standard ISO 17067 are subject to a regular programme of monitoring product quality at manufacturing level and are thus exempted from our surveillance programme on plumbing products with GA. In June 2019, we officially recognised four certification schemes in the United Kingdom, Australia and Germany, which satisfy the requirements of ISO 17067. We encouraged plumbing suppliers to introduce more plumbing products with the above-recognised certificates into the local market to enhance the quality of plumbing materials. This initiative has been well received by the stakeholders, including developers and contractors.

Legislative Review for Enhancing Drinking Water Safety

To enhance Hong Kong's drinking water safety, we continued our holistic review of the Waterworks Ordinance (Cap.102) and Waterworks Regulations (Cap.102A). This review will strengthen our regulatory control over the design, construction and maintenance of internal plumbing systems and plumbing materials. We are also conducting a business impact assessment on the legislative proposals. We expect to draw up the legislative proposals by mid-2020, followed by a period of public consultation.

供水可靠性

資產管理

水務設施資產管理

為提升水務設施的表現並同時降低成本及減少故障風險，我們致力在水務設施的維修及管理上達致世界級水平。我們根據ISO 55001資產管理系統標準來管理所有水務資產，此系統涵蓋各類資產的「生命週期」，包括籌劃、設計、興建、建造、運作、維修保養、更新以至棄置，讓我們作出適當的決策，以應對未來挑戰，確保符合可持續性，並提高運作可靠性及效率。系統亦讓我們能夠做好故障風險管理，同時提供優質的服務水平，並根據風險分析進行資源調配及制訂行事優先次序。

WATER RELIABILITY

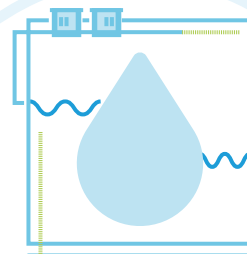
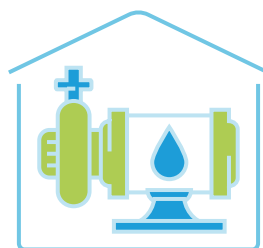
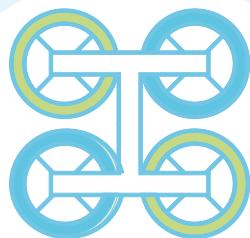
Asset Management

Waterworks Asset Management

To optimise our the performance of our waterworks while minimising costs and failure risks, we strive to attain world-class quality for waterworks maintenance and management. In accordance with ISO 55001 standards, we are implementing an 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. The system also 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.

我們致力在二零二零年為水塘、濾水廠、抽水站、配水庫及斜坡等取得ISO 55001標準認證，確保供應可靠及充足的優質食水及沖廁用水。

We aim to obtain ISO 55001 standard certification for our impounding reservoirs, WTWs, pumping stations, service reservoirs, slopes, etc., for the reliable and adequate supply of wholesome potable and flushing water in 2020.



詳細及獨立的水塘視察

鑑於二零一九冠狀病毒病疫情，我們外聘的海外專家顧問未能於二零二零年第一季到訪香港進行視察。同樣在此期間，由水務署人員進行的視察次數亦有所減少。然而，我們進行了風險評估及為視察計劃進行重新排序。我們將於疫情穩定時，增加外聘專家顧問及水務署人員的視察次數，以確保盡快按優次恢復視察。

Detailed and Independent Reservoir Inspections

In view of the COVID-19 epidemic, our external expert advisors from overseas could not visit Hong Kong during the first quarter of 2020 to conduct inspections. Similarly, the number of detailed inspections by internal staff was also reduced during that period. Nevertheless, we have conducted risk assessments and re-prioritised our inspection programme. We will increase the number of inspections by external expert advisors as well as internal staff when the epidemic becomes stabilised to ensure that the most-needed inspections can resume as early as possible.

在二零一九至二零年度，我們為水塘及配水庫進行了以下視察：
In 2019/20, we conducted the following inspections of our impounding and service reservoirs:



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



32 次由外聘專家顧問
進行的視察
inspections conducted
by external expert
advisors



由水務署保養及進行預防性保養或改善工程的斜坡

我們定期為轄下斜坡進行保養及改善工程，包括打泥釘、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，大幅降低了發生山泥傾瀉的風險，以及減少對公眾、水務員工和設施構成的威脅。

Slopes under WSD Maintenance and that Received Preventive Maintenance or Upgrades

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

在二零一九至二零年度，
我們負責保養約
In 2019/20, we oversee
approximately

6 500 幅斜坡
slopes



並為其中
Of these, 65 幅
slopes

進行了預防性保養或改善工程
received preventive maintenance
or upgrades

提升水管資產管理

我們負責管理龐大的水管資產，並致力提升管理質素。水管爆裂個案數字一直維持在低水平，在二零一九年只有約40宗。我們將繼續採用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、周遭環境等各項因素，評估水管爆裂或滲漏的風險，並為評定為高風險的水管優先進行改善工程，包括進行更換或修復，以降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地點）的水管進行改善工程。

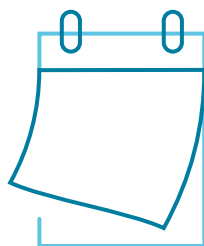
提升供水可靠性

沙田濾水廠原地重置工程（南廠）

透過沙田濾水廠（南廠）原地重置工程，將可確保為公眾提供充足的優質食水。作為「建造業2.0」的先導項目，此項工程積極融合創新的建築方法及科技，包括BIM、DWSS、MiC等，從而提高生產效率、提升建造質素，並改善工地安全及促進環保效益。竣工BIM模型所包含的資產資料，將可在設施正式啟用後用於資產及設施管理。我們的目標是為此項目在「綠建環評」計劃中獲取鉑金評級。

原地重置工程的前期工程：
Advance works for the in-situ re-provisioning:

2020 四月
April
大致完成
Substantially Completed



Enhancing Water Main Asset Management

We are committed to enhancing the management of our huge water main assets. Water main burst cases have remained at a relatively low level. In 2019, about 40 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. We will assess the risk of the water mains, 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. and 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. locations with repeated water main bursts).

Enhancing Water Supply Reliability

In-Situ Re-provisioning of Sha Tin WTW (South Works)

The re-provisioned Sha Tin WTW (South Works) will ensure an adequate and quality supply of potable water to the public. As a Construction 2.0 pilot project, this project actively incorporates innovative construction methods and technology to promote productivity, uplift build quality, improve site safety and enhance environmental performance, including BIM, DWSS, and MiC. As-built BIM models containing asset information will be used to enhance asset and facility management once the facility is fully commissioned. Our goal is to obtain a Platinum rating under the BEAM Plus Scheme.

主項工程動工：
Commencement of main works:

預計於
Targeted for
2020 八月
August

全面投入運作：
Full facility commissioning:

預計於
Scheduled for
2026

小蠔灣濾水廠擴展工程

為滿足北大嶼山的可持續發展需要，我們正為小蠔灣濾水廠擴展工程進行詳細設計，以將其每日濾水量增加一倍。此項目從設計階段已廣泛採用BIM技術。作為我們對可持續發展承諾的一部分，我們期望為此項目在「綠建環評」計劃中獲取金級或更高評級認證。

Siu Ho Wan WTW Extension

To cope with North Lantau's sustainable developments, we are working on the detailed design for Siu Ho Wan WTW extension to double its daily water treatment capacity. We have adopted BIM extensively in this project, starting from the design stage. As part of our commitment to sustainable development, our goal is to achieve BEAM Plus Gold or higher accreditation for this project.

小蠔灣濾水廠擴展工程完成後的每日濾水量
Daily water treatment capacity of Siu Ho Wan WTW
after completion:

150 000 立方米 m^3  300 000 立方米 m^3



配合新發展區的供水

新界新發展區計劃對確保香港的中期及長期土地供應十分重要，並為房屋發展提供主要土地來源。我們正與不同政府部門合作，為包括古洞北、粉嶺北及洪水橋/廈村等新發展區規劃、設計和建造所需要的水務設施，並會加入智能設計的新方案，例如使用循環再用水作為沖廁水和採用智能水壓管理，以提高供水系統的可持續性及可靠性。

我們亦為牛潭尾濾水廠擴展工程進行可行性研究，將其每日濾水量增加至44萬立方米，以滿足新界西北發展計劃（包括元朗南、洪水橋/廈村新發展區、橫洲、丹桂村及朗邊）預期所帶來的用水需求增長。目前，可行性研究已大致完成，並正進入勘查研究階段。

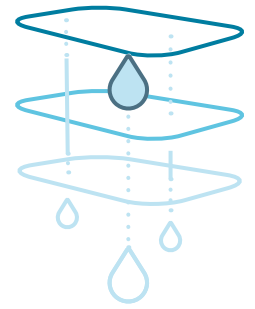
Facilitating the Water Supply in the New Development Areas

The New Development Area (NDA) projects in the New Territories are essential both for Hong Kong's medium and long-term land supply and as a major source of housing development. We are working alongside various government departments to plan, design and construct the waterworks infrastructures for these NDAs, including Kwu Tung North, Fanling North and Hung Shui Kiu/Ha Tsuen, incorporating smart initiatives such as using recycled water for flushing and intelligent pressure management to enhance the sustainability and reliability of the water supply systems.

We also conducted a feasibility study on the extension of Ngau Tam Mei WTW to increase its daily water treatment capacity to 440 000 m^3 to meet the water demand growth arising from the planned developments in the Northwest New Territories, including Yuen Long South, the Hung Shui Kiu/Ha Tsuen NDA, Wang Chau, Tan Kwai Tsuen and Long Bin. This study has been substantially completed, and we are now proceeding to the investigation stage.

牛潭尾濾水廠擴展工程完成後的每日濾水量
Daily water treatment capacity of Ngau Tam Mei WTW
after completion:

230 000 立方米 m^3  440 000 立方米 m^3



東江水水管改善工程

為了持續地確保東江水供應的可靠性及靈活性，我們將於二零二零年年底展開一項改善工程，更換東江水P4水管已老化的玻璃纖維強化塑膠管部分。在設計階段，我們便採用了BIM技術，以提高此項目的質素及效率。



Dongjiang Water Main Improvements

As part of our ongoing efforts to ensure a reliable and flexible supply of Dongjiang water, we will commence a project to replace the aged glass reinforced plastic (GRP) section of the P4 Dongjiang water mains in late 2020. In the design stage, we have adopted BIM technology to enhance the quality and efficiency of this project.

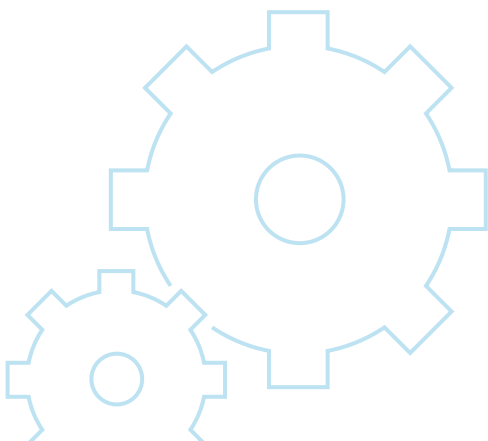
目前東江水水管的現場環境

The site environment of the existing Dongjiang water mains



透過無人機攝影測量法獲取的點雲記錄

Point cloud records taken via unmanned aerial vehicle photogrammetry



可持續運作 Operational Sustainability



船灣淡水湖的浮動太陽能板發電系統
Floating PV System at Plover Cove Reservoir

在運作中實踐環保 Conserving Environment in Operation

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 operation through an array of green initiatives on energy conservation, renewable energy development and environmental mitigation.

節約能源及開拓替代能源

ENERGY CONSERVATION AND ALTERNATIVE ENERGY FOR SUSTAINABILITY

能源管理系統

Energy Management System

我們竭力透過推行一系列節約能源的措施，提升供水運作中的能源效益。為進一步加強能源管理，我們正著手提升ISO 50001認證至最新版本，預計於二零二零年年底完成。該認證覆蓋整個供水鏈，包括收集、貯存、輸送及處理原水，以及食水與海水的供應及分配。

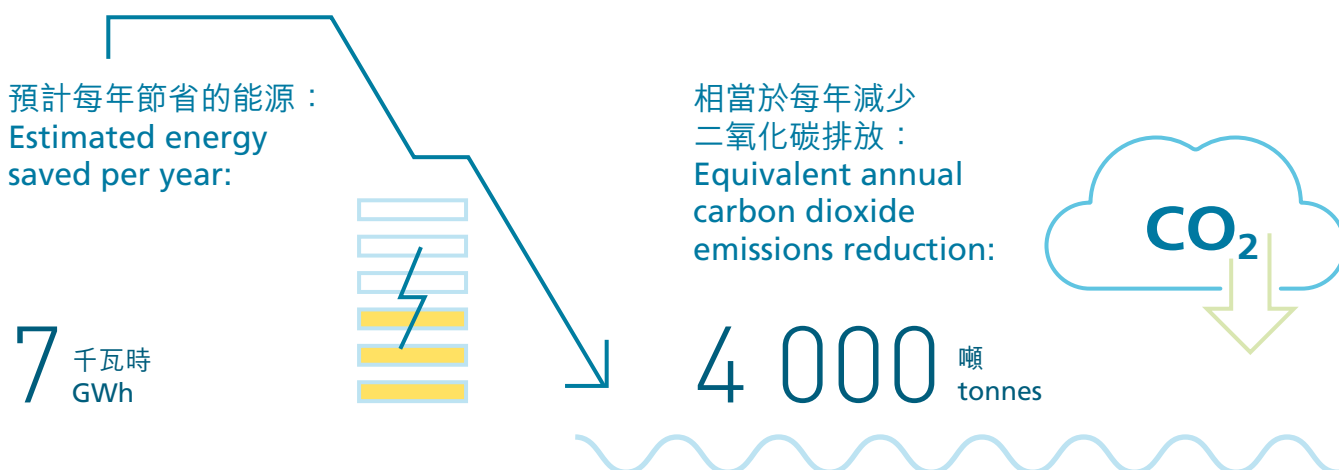
We strive to optimise the energy use in water supply operations by implementing a host of energy saving measures. To further improve our energy management, we are upgrading our ISO 50001 certification to the latest version, targeted for completion at the end of 2020. This certification covers the entire water supply chain, from collection, storage, transfer and treatment of raw water to the supply and distribution of fresh water and salt water.

海傍海水抽水站安裝次氯酸鈉液體投放系統

目前，我們運作22個海傍海水抽水站，為香港近85%的人口平均每日供應76萬立方米的海水作沖廁用途。一般情況下，我們使用電解氯化設備將海水電解為次氯酸鈉溶液，為海水進行消毒。我們正逐步將電解氯化設備更換為成本效益更高、更節能的次氯酸鈉液體投放系統，藉此節省電解氯化設備所消耗的電力。

Installation of Sodium Hypochlorite Dosing Systems at Seafront Salt Water Pumping Stations

Currently, we operate 22 seafront salt water pumping stations, which supply an average of 760 000 m³ of salt water per day for toilet flushing to nearly 85% of Hong Kong's population. Conventionally, electrochlorination plants have been used to produce a sodium hypochlorite solution through the electrolysis of salt water to disinfect salt water. We are gradually replacing them with more cost effective and energy-efficient sodium hypochlorite dosing systems, thereby saving the electrical energy required for the electrochlorination plants.



減少碳足印

我們已對五項設施完成碳審計工作，並將根據所收集的數據採取適當的應對措施，減少溫室氣體排放。

以下設施已完成碳審計工作，包括：

- 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

Carbon Footprint Reduction

We have completed carbon audits for five of our facilities, and will use the data collected to implement appropriate measures to reduce their greenhouse gas emissions.

Carbon audits have been completed for:

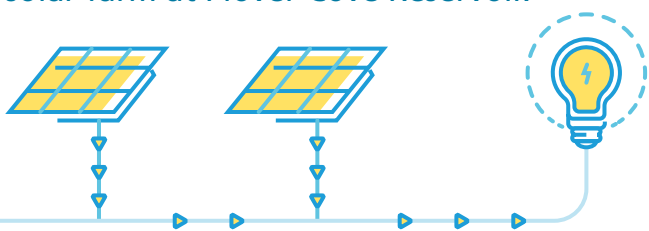
- Cheung Sha Wan Building
- Kowloon Bay Building
- North Point Building
- Tin Shui Wai Building
- Lung Cheung Road Mechanical and Electrical Workshop

浮動太陽能板發電系統

隨著於石壁水塘及船灣淡水湖的先導項目成功開展後，我們正計劃於大欖涌水塘安裝一組100千瓦的浮動太陽能板發電系統，以開拓更多可再生能源的應用。

我們目前正研究於船灣淡水湖建造大型浮動太陽能板發電場的可行性。

We are currently studying the feasibility of implementing a large-scale floating solar farm at Plover Cove Reservoir.



Floating Photovoltaic Systems

Following the success of our pilot projects at Shek Pik and Plover Cove reservoirs, we are currently determining how to implement a 100kW-capacity floating photovoltaic (PV) system at Tai Lam Chung Reservoir in a bid to explore more applications of renewable energy sources.



石壁水塘的浮動太陽能板發電系統
Floating PV System at Shek Pik Reservoir

水力發電站

繼香港首個水力發電站於屯門濾水廠落成後，第二個水力發電站亦已於二零一九年年底於沙田濾水廠順利完成建造，並將於二零二零年第三季開始投入使用。位於馬鞍山濾水廠的水力發電站的設計工作亦已完成，預計工程於二零二四年竣工。



沙田濾水廠的水力發電站
Hydropower Plant at Sha Tin WTW

Hydropower Generation Plants

Following the commissioning of Hong Kong's first hydropower plant at Tuen Mun WTW, at the end of 2019 we completed construction of a second hydropower plant at Sha Tin WTW, and operations will begin in the third quarter of 2020. We have also completed the design for the hydropower plant at Ma On Shan WTW, targeted to complete in 2024.

點滴話你知 DO YOU KNOW?



水力發電站可將流入濾水廠的原水的位能轉化為電能，供濾水廠使用。

Hydropower plants convert the potential energy from raw water flowing into the WTWs into electrical power that the WTWs can use.

內聯閉式水力發電裝置

我們正著手於「智管網」的部分獨立監測區域安裝內聯閉式水力發電裝置，為感應及監測設備及數據傳輸裝置提供電力。在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，並將其中兩套安裝於「智管網」進行試運。



In-line Hydropower Harnessing Devices

We are installing sets of in-line hydropower harnessing devices (IHHD) in some of the DMAs that we are establishing under WIN to power sensing and monitoring equipment and data transmission devices. We have procured 20 sets of IHHD from Hong Kong Polytechnic University, funded by the Innovation and Technology Bureau's TechConnect Block Vote, and have deployed two IHHD sets to WIN sites as a trial.

內聯閉式水力發電裝置
In-line Hydropower Harnessing Device

減低環境影響

現場生產氯氣

我們繼續為十間主要濾水廠升級消毒設施，並預計於二零二一年完成。屆時，我們的現場氯氣生產系統將告竣工及投入使用，因而避免運輸及儲存液態氯氣過程中洩漏氯氣的風險。

減低建造工程的影響

我們的設計及建設科竭力於規劃、設計及建造等各個環節中，盡量降低水務建造工程對環境造成的影響。每年，我們均會參照《ISO 14001:2015環境管理體系》認證訂立新的方向和目標，不斷提升我們在環境管理體系及環保方面的表現。

ENVIRONMENTAL MITIGATION

On-site Chlorine Generation

We continue to upgrade the disinfection facilities of 10 of our major WTWs, and expect this work to be completed progressively in 2021. By then, we will have completed and commissioned our on-site chlorine generation plants, thus eliminating the risks of chlorine leakage during the transportation and storage of liquid chlorine.

Minimising Construction Impacts

Our New Works Branch strives to minimise the environmental impact of our waterworks construction works throughout their planning, design and construction. 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.

提高生物多樣性

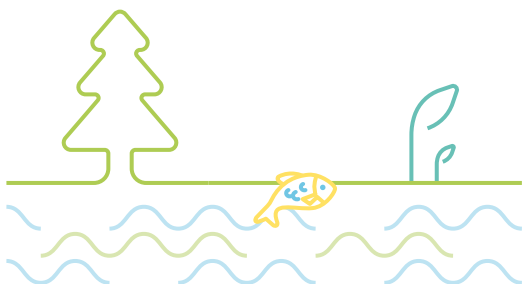
我們一直支持香港的可持續發展，響應環境局的《香港生物多樣性策略及行動計劃2016-2021》，探索各項可行措施，協助提高香港的生物多樣性。

Enhancing Biodiversity

We support Hong Kong's sustainable development, and have been exploring practical ways to enhance its biodiversity in conjunction with the Environment Bureau's Hong Kong Biodiversity Strategy and Action Plan 2016-2021 (BSAP).

《香港生物多樣性策略及行動計劃》 Hong Kong Biodiversity Strategy and Action Plan:

- 漁農自然護理署 Agriculture, Fisheries and Conservation Department
- 渠務署 Drainage Services Department
- 食物環境衛生署 Food and Environmental Hygiene Department
- 水務署 Water Supplies Department



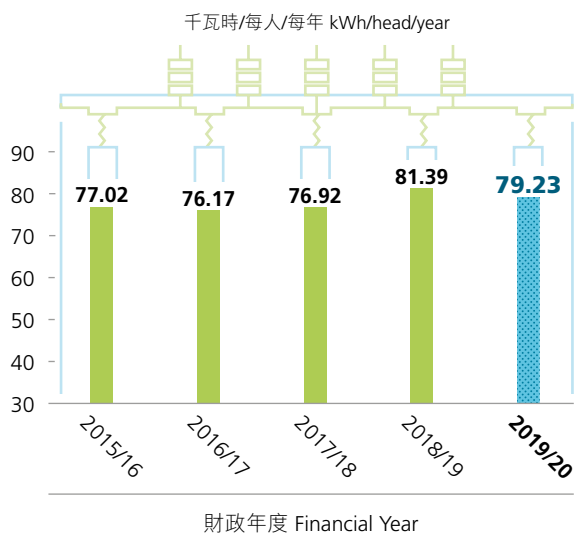
透過改良維修工作流程，盡量減少相關工作對生態環境造成的影響，加強對自然溪澗及引水道的保護。

Enhance the conservation of natural streams and catchwaters by improving practices in our maintenance works to minimise ecological impacts arising from these works.

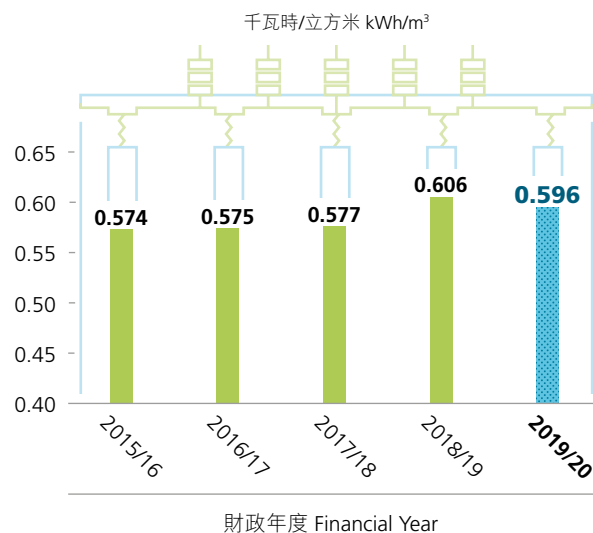
在漁農自然護理署（漁護署）的支持下，我們於多個引水道區域試驗推行了多項對野生動物友善的措施，包括於改善工程中設置動物逃生通道及採用環保物料。我們亦與多個環保團體合作，嘗試將收集到的部分雨水分流給下游的大嶼山東涌河，作為一項生態研究工作的一部分。研究結果顯示，此措施能夠幫助恢復下游淡水生態環境，提升區內的生物多樣性。

With the support of the Agriculture, Fisheries and Conservation Department (AFCD), we carried out trials of wildlife-friendly measures in catchwater areas, including installing animal escape routes and using ecologically friendly materials in our improvement works. We also collaborated with several green groups on a trial to discharge part of the yield to the Tung Chung River in Lantau as part of an ecological study. Results have shown that this could help revitalise freshwater habitats downstream, thus enhancing their biodiversity.

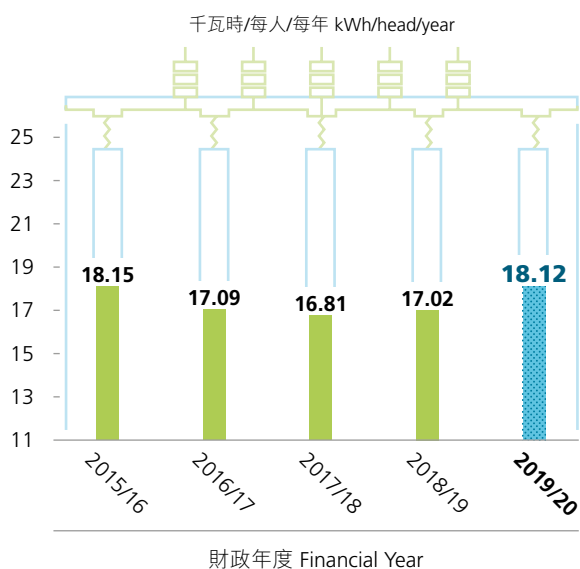
人均耗電量 (食水及原水)
Per Capita Electricity Consumption
(Fresh Water and Raw Water)



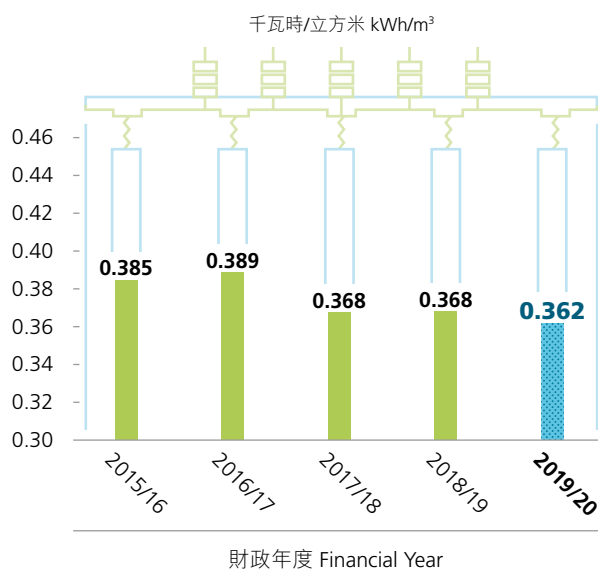
每單位耗電量 (食水及原水)
Unit Electricity Consumption
(Fresh Water and Raw Water)



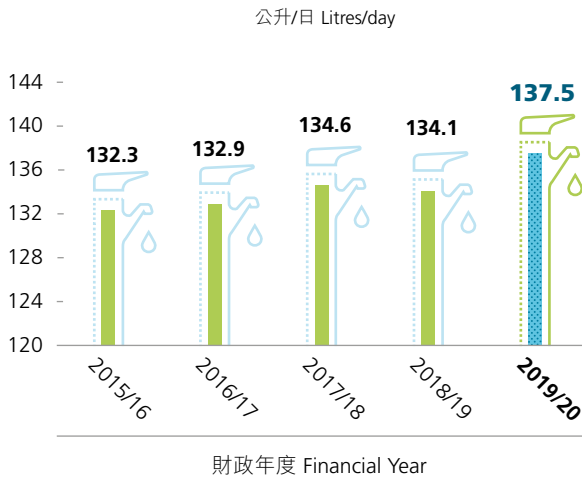
人均耗電量 (海水)
Per Capita Electricity Consumption
(Salt Water)



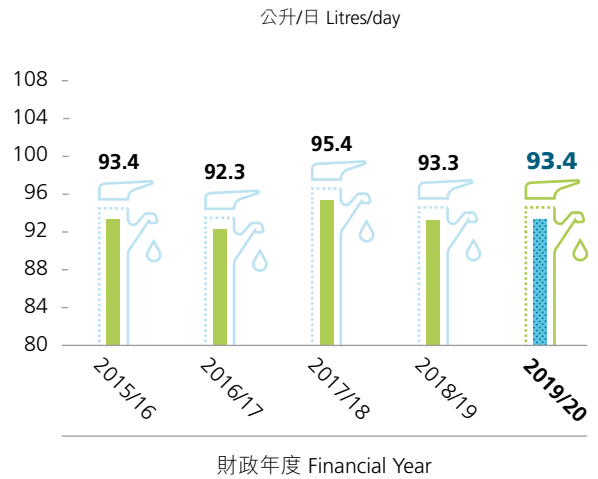
每單位耗電量 (海水)
Unit Electricity Consumption (Salt Water)



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

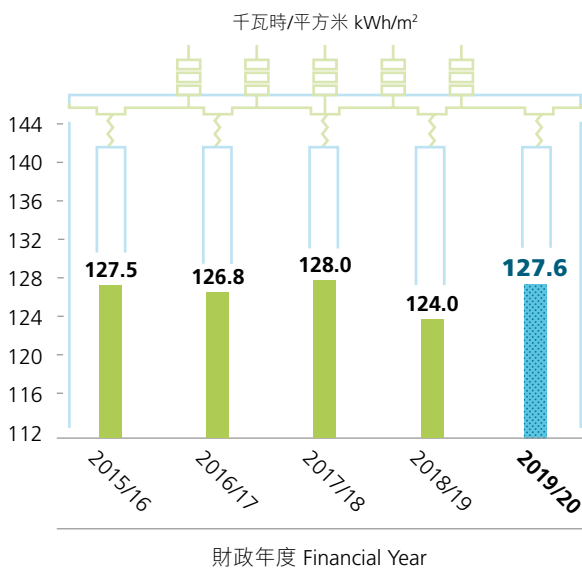


人均沖廁水用量（食水及海水） Per Capita Flushing Water Consumption (Fresh Water and Salt Water)

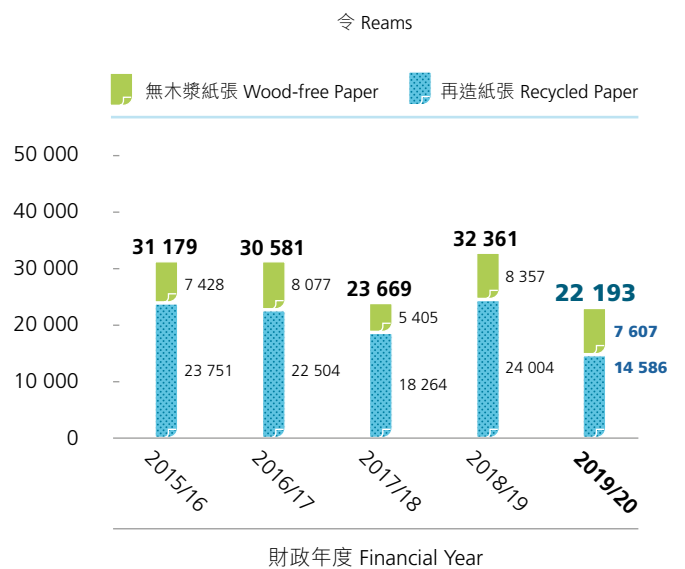


註：人均沖廁水用量（食水及海水）是根據本港的沖廁水總用量計算而得。
Note : Per Capita Flushing Water Consumption (Fresh Water and Salt Water) is based on Hong Kong's total flushing water consumption.

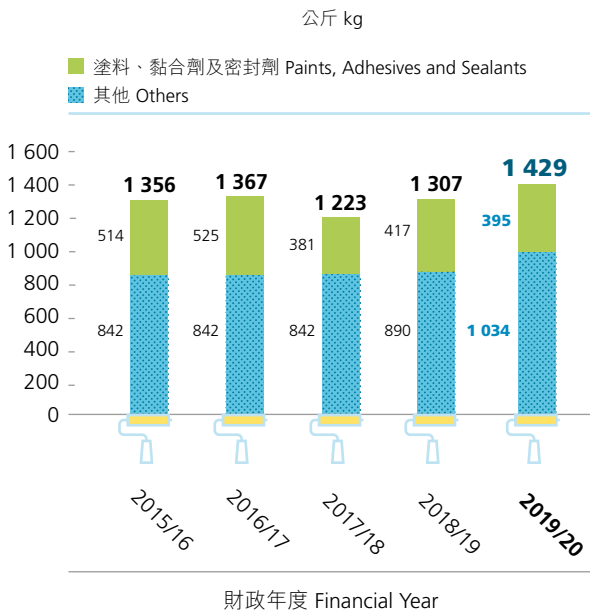
辦公室每單位樓面面積的耗電量 Office Electricity Consumption Per Unit Floor Space



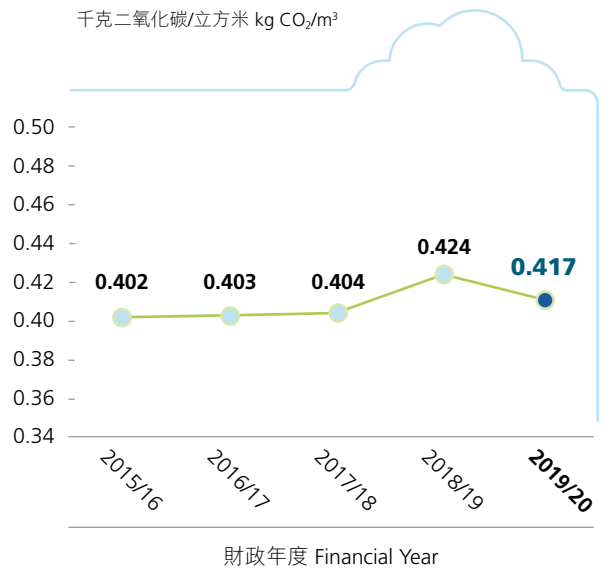
耗紙量 Paper Consumption



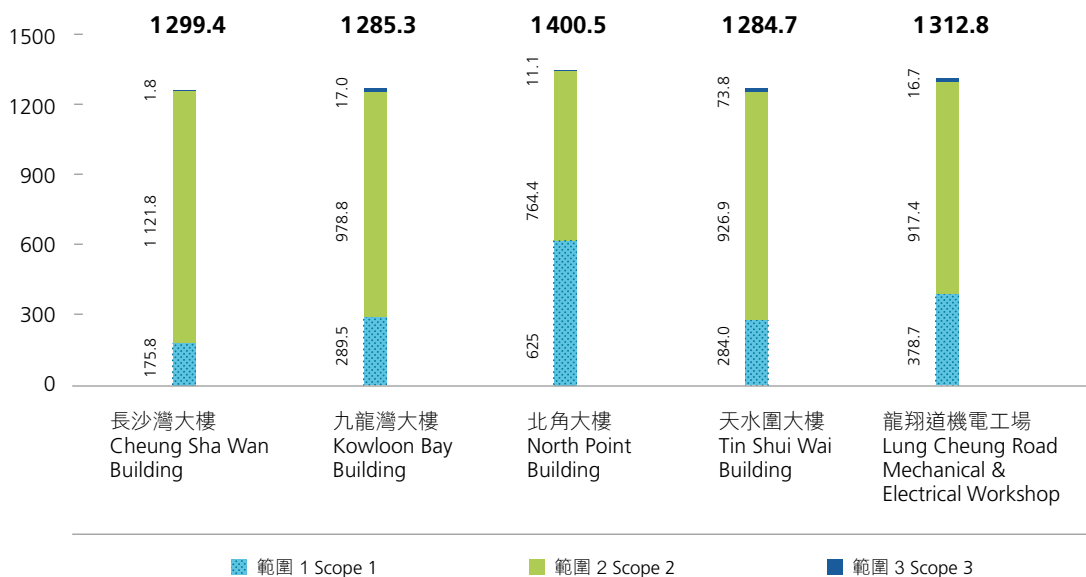
內部工作所需揮發性有機化合物耗用量 VOC Consumption for In-house Work



水務署因使用電力處理食水而出現的溫室氣體排放 Green House Gas Emissions Due to Electricity Used for Fresh Water Processing by WSD



碳審計報告 Carbon Audit Report



註： 範圍1—直接溫室氣體排放量
範圍2—使用能源間接引致的溫室氣體排放量
範圍3—其他間接溫室氣體排放量
Note: Scope 1 – Direct GHG Emissions
Scope 2 – Energy Indirect GHG Emissions
Scope 3 – Other Indirect GHG Emissions

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)		
	2017/18	2018/19	2019/20	2017/18	2018/19	2019/20	2017/18	2018/19	2019/20
柴油 Diesel	58	85	86	67 818	144 386	199 676	357 842	771 660	1 062 437
汽油 Petroleum	158	123	116	479 787	398 065	313 666	2 216 830	1 997 606	1 345 504
混合 (汽油/電力) Hybrid (Petrol/ Electric)	3	3	1	12 077	2 067	298	174 524	38 858	6 439
液化石油氣 LPG	11	11	11	51 379	43 503	49 097	139 457	121 690	135 514
電力 Electricity	16	15	13	–	–	–	98 845	122 293	81 510

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		
	2017/18	2018/19	2019/20	2017/18	2018/19	2019/20	2017/18	2018/19	2019/20	2017/18	2018/19	2019/20
財政年度 Financial Year	2017/18	2018/19	2019/20	2017/18	2018/19	2019/20	2017/18	2018/19	2019/20	2017/18	2018/19	2019/20
直接廢氣排放 Direct Emissions												
車輛 (柴油) Vehicle fleet (Diesel)	154	347	522	-	-	-	2	4	1	-	-	-
車輛 (汽油) Vehicle fleet (Petrol)	1 075	899	741	-	-	-	1	1	1	-	-	-
車輛 (液化石油氣) Vehicle fleet (LPG)	97	73	82	-	-	-	-	-	-	-	-	-
間接廢氣排放 Indirect Emissions												
耗用電 (九龍及新界) Electricity Consumed (Kowloon and New Territories)	315 317	342 785	322 807	86	94	65	261	310	297	8	8	8
耗用電 (港島) Electricity Consumed (Hong Kong Island)	52 184	54 533	53 632	14	19	12	51	51	48	1	1	1
總量 Total	368 826	398 637	377 784	100	113	77	314	366	347	10	10	9