



抱負 Vision

在滿足客戶對優質供水服務的需求，務求有卓越之表現。
To excel in satisfying customers' needs for the provision of quality water services.

- 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.



使命 Mission

- 維持及激勵一支能幹、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.



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



目錄 Contents

1	抱負、使命及信念 Vision, Mission & Values
3	部門總覽 Corporate Profile
5	水務署組織圖 WSD Organisation Chart
7	大事紀要 Events in Brief
19	署長的話 Director's Statement
26	主要工作表現指標 Key Performance Indicators

29	供水管理 Water Supply Management
39	培養節約用水文化 Fostering a Water Conservation Culture
51	水質 Water Quality
55	水務基建設施 Waterworks Infrastructure
63	財務及水費 Finance and Water Charges
71	可持續運作 Sustainable Operations
81	專注客戶服務 Focusing on Customer Service
85	精益求精 Enhancing Our Competencies
93	附錄 Appendices
96	附件 Annexes



部門總覽

Corporate Profile

香港的供水對本港居民的生活不可或缺，同時亦是支援本港可持續發展的關鍵要素。香港特別行政區政府水務署負責監測及維持香港的食水及海水供應，確保供應可靠充足。遍佈本港17個水塘的集水區收集的本地集水約佔香港總食水用量二至三成。本港的食水大部分由中國南部的東江輸入。本地集水和輸入的東江水均經過嚴格處理及監測，務求食水水質符合世界衛生組織的《飲用水水質準則》。此外，自二十世紀五十年代以來，我們充分利用香港鄰近中國南海的地理優勢，將經處理的海水用作沖廁用途。食水及海水透過兩個完全獨立的水務基建系統供應。所有供水會儲存在廣泛分佈的配水庫和水管內，以待配送至各家各戶及商用物業。

為確保香港的供水穩健，我們透過海水化淡、再造水、中水重用及雨水回收等先進技術，努力開拓新水源。這六個水源將成為重要支柱，進一步提升香港的供水保障及適應氣候變化的能力。

作為香港最大的能源用戶之一，水務署已實施相關措施，透過開發可再生能源，致力減少能源消耗。此外，水務署是首個獲得ISO 50001能源管理系統認證的政府部門。

我們的抱負是滿足客戶對優質供水服務的需求。為此，水務署的團隊致力提供以客戶為本的服務，確保我們的用戶獲得最有效及優質的服務。

Hong Kong's water supply is indispensable to the livelihoods of the people who live here and is critical to support the Territory's sustainable developments. The Hong Kong SAR Government's Water Supplies Department (WSD) is charged with the responsibility of monitoring and maintaining reliable and adequate water supplies. Local yield collected in catchment areas with the 17 impounding reservoirs accounts for about 20% to 30% of Hong Kong's total fresh water consumption. The major proportion of our fresh water supply comes from Dongjiang in the southern part of Mainland China. Both the collected local yield and the imported Dongjiang water are subject to stringent treatment and monitoring in order that the quality of treated water meets the Guidelines for Drinking-water Quality published by the World Health Organization (WHO Guidelines). Moreover, since the 1950s, we have taken full advantage of Hong Kong's geographic proximity to the South China Sea to adopt sea water for flushing purposes. Fresh water and sea water are supplied through two entirely separate waterworks infrastructure systems. The water supplies are maintained in an extensive array of service reservoirs and water mains for distribution to homes and commercial developments.

To ensure that Hong Kong's water supplies remain secure, we make concerted efforts to exploit new water sources by introducing advanced technologies such as desalination, water reclamation, grey water recycling and rainwater harvesting. These six water sources will become the pillars that support Hong Kong with enhanced water security and ability to adapt to climate change.

As one of the largest energy consumers in Hong Kong, WSD has also implemented measures to reduce our energy footprint through the development of viable renewable energy sources. Moreover, we are the first government department to be awarded the ISO 50001 Energy Management System certification.

Our vision is to meet our customers' expectations in providing quality water supply services. With this in mind, WSD's committed workforce has adopted customer-oriented approach to ensure that our customers receive the most effective and high quality services.

主要統計數字(截至二零一七年三月三十一日)
Principal Statistics (as at 31st March 2017)



水塘數目
No. of Impounding Reservoirs

17 個
nos.

總存水量
Total Storage Capacity

586 百萬立方米
million cubic metres (mcm)



濾水廠數目
No. of Water Treatment Works

21 個
nos.

每日總濾水量
Total Daily Treatment Capacity

5 百萬立方米
million cubic metres (mcm)



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

154 座
nos.

每日總抽水水量
Total Daily Pumping Capacity

32.1 百萬立方米
million cubic metres (mcm)



海水抽水站數目
(包括抽水站及泵房)
No. of Salt Water Pumping Stations
(including both pumping stations and pump houses)

35 座
nos.

每日總抽水水量
Total Daily Pumping Capacity

2.1 百萬立方米
million cubic metres (mcm)



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

7 座
nos.

每日總抽水水量
Total Daily Pumping Capacity

0.3 百萬立方米
million cubic metres (mcm)



食水配水庫數目
No. of Fresh Water Service Reservoirs

174 座
nos.

總存水量
Total Storage Capacity

4.3 百萬立方米
million cubic metres (mcm)

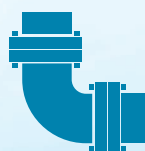


海水配水庫數目
No. of Salt Water Service Reservoirs

54 座
nos.

總存水量
Total Storage Capacity

0.3 百萬立方米
million cubic metres (mcm)



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)

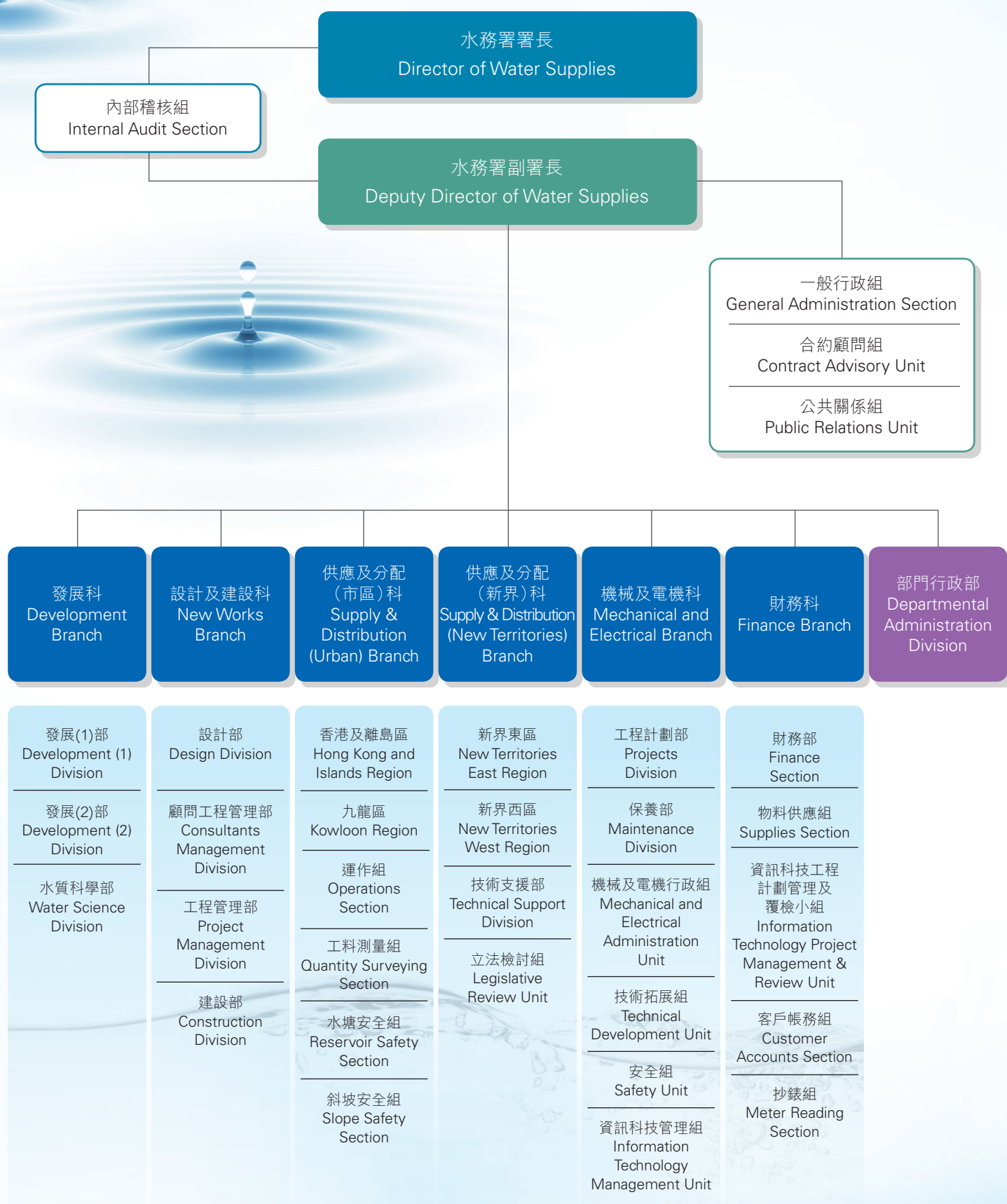
6,565 公里
kilometres (km)

海水水管長度
(直徑20毫米至1,200毫米)
Length of Salt Water Mains
(20 mm to 1,200 mm diameter)

1,582 公里
kilometres (km)

水務署組織圖

WSD Organisation Chart





1. 林天星工程師, 太平紳士
Ir LAM Tin Sing, Enoch, JP

水務署署長
Director of Water Supplies

2. 黃仲良工程師, 太平紳士
Ir WONG Chung Leung, JP

水務署副署長
Deputy Director of Water Supplies

3. 黃敏清工程師
Ir WONG Man Ching

助理署長／機械及電機
Assistant Director/
Mechanical & Electrical

4. 陸偉雄工程師
Ir LUK Wai Hung

助理署長／設計及建設
Assistant Director/New Works

5. 黃俊光先生
Mr WONG Chun Kwong

助理署長／財務
Assistant Director/Finance

6. 譚偉源先生
Mr TAM Wai Yuen

部門秘書
Departmental Secretary

7. 周世威工程師
Ir CHAU Sai Wai

助理署長／發展
Assistant Director/Development

8. 林正文工程師
Ir LAM Ching Man

助理署長／市區
Assistant Director/Urban

9. 陳仲勤工程師
Ir CHAN Chung Kun

助理署長／新界
Assistant Director/New Territories

大事紀要

Events in Brief

二零一六年
五月
May 2016

點滴掙水行2016 *Walk for Water 2016*

由點滴是生命在二零一六年五月八日舉辦的「點滴掙水行」，為三千名參加者提供機會，讓他們揹起不同容量的樽裝水，從淺水灣沙灘展開三公里的掙水之旅。這項活動旨在讓公眾體驗內地乾旱地區居民的掙水之苦，並為內地山區居民籌款興建集雨水窖。水務署署長林天星先生在活動上不但分享了他對節約用水的心得，也參加了步行活動。作為支持機構，水務署在活動中設立遊戲攤位，推廣節約用水。



Organised by A Drop of Life on 8th May 2016, “Walk for Water 2016” provided a platform for the 3,000 participants to carry different loads of bottled water on a 3-km walk starting from Repulse Bay Beach. The aim of this event was to let the public experience the hardship of carrying water in arid areas of Mainland China and to raise funds for building water cellars. The Director of Water Supplies, Mr Enoch LAM, not only shared his thoughts on water conservation, but also participated in the walk. As a supporting organisation, WSD set up a game booth at the event to promote water conservation.

二零一六年
六月
June 2016

2016沙田龍舟競賽 *Shatin Dragon Boat Race 2016*



水務署的龍舟隊於今年的端午節參加了三項龍舟競賽。我們在鳳艇奪得殿軍；在混合賽奪得冠軍，這是水務署龍舟隊首次在沙田龍舟競賽奪冠。得到如此出色的比賽成績，全靠隊員的專心訓練和資深隊員的指導，以及眾多水務署同事激勵人心的吶喊助威。

This year, WSD Dragon Boat Team took part in three boat races at the Dragon Boat Festival. We won the 3rd runner-up prize in the women's competition and also came in as champion in the mixed match event; the first time WSD was crowned champion at the Shatin Dragon Boat Races. These exemplary race results came about following extensive and focused dragon boat trainings and coaching by experienced members as well as the inspiring cheers from many WSD colleagues at the event.



公務員事務局局長參觀水務署沙田濾水廠

Secretary for the Civil Service's Visit WSD – Sha Tin Water Treatment Works

公務員事務局局長張雲正先生在二零一六年六月十三日參觀沙田濾水廠，了解本署的工作。張先生與部門首長級人員、濾水廠的前線人員和署方各職系的員工代表會面。他讚賞同事致力服務社群，並勉勵他們繼續善用資源和科技，力求不斷改善服務。



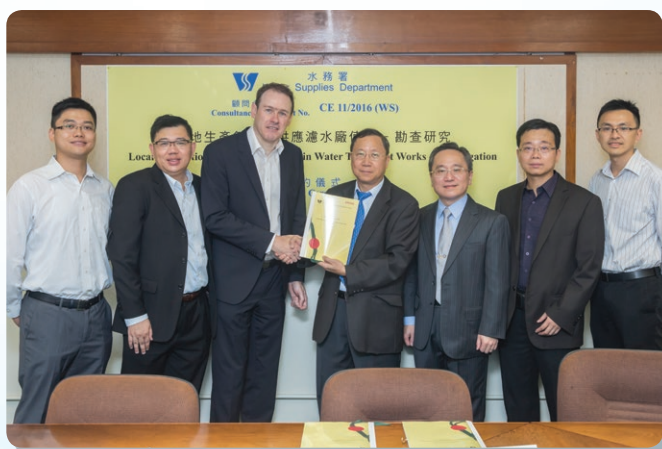
Secretary for the Civil Service, Mr. Clement CHEUNG, visited Sha Tin Water Treatment Works (WTW) on 13th June 2016 to learn more about the operations of the Department. Mr. Cheung met the senior management, frontline colleagues stationed in the WTW, and staff representatives of various grades. He praised the efforts made by all the staff members serving the community and encouraged them to continue making the best use of resources and technology to strive for improvements in services.



本地生產氯氣以供應濾水廠使用－顧問合約簽署儀式

Signing Ceremony of the Consultancy Agreement for the Local Generation of Chlorine for Use in Water Treatment Works

本署批出一份價值二百萬港元的顧問合約予奧雅納工程顧問，就本地生產氯氣以供應濾水廠使用進行勘查研究。合約簽署儀式在二零一六年六月二十九日舉行。



A consultancy agreement worth \$2 million was awarded to Ove Arup & Partners Hong Kong Limited for the feasibility study regarding local generation of chlorine in WTW. The contract signing ceremony was held on 29th June 2016.

國際環保博覽2016 Eco Expo Asia 2016

水務署參加了由香港貿易發展局主辦及環境局協辦的國際環保博覽2016，並在活動上展示了「自動讀錶系統」。這個系統有助提高讀錶效率，亦可密切監察用戶用水情況，以及鼓勵節約用水。環境局局長黃錦星先生也參觀了水務署的攤位。水務署署長在有關水質的環節上，介紹了本港穩健供水的發展里程。

WSD participated in ECO Expo Asia 2016 hosted by the Hong Kong Trade Development Council and co-organised by the Environment Bureau. Through this event, WSD demonstrated the Automatic Meter Reading system which helps improve meter reading efficiency. It also enables close monitoring of water consumption by customers and encourages water conservation. Secretary for the Environment Mr WONG Kam-sing also made a visit to the Department's booth. The Director of Water Supplies gave a presentation about water resilience development in Hong Kong during the session on water quality.

二零一六年
十月
October 2016



二零一六年
十一月
November 2016

水務諮詢委員會廣東之行 Advisory Committee on Water Supplies' Visit to Guangdong

水務諮詢委員會成員在二零一六年十一月一日至三日到訪廣東，視察東江供水系統，並了解保障東江水水質的最新發展及所採取的措施。



Members of the Advisory Committee on Water Supplies visited Guangdong during 1st to 3rd November 2016, to inspect the Dongjiang water supply system and learn more about the latest developments and measures adopted to safeguard the quality of Dongjiang water.

馬鞍山濾水廠開放日

Ma On Shan Water Treatment Works Open Day



水務署在二零一六年十一月二十日在馬鞍山濾水廠舉辦開放日，讓公眾正確認識本港的食水水質及處理過程。活動吸引了各階層的市民參與。在水務署義工的帶領下，市民參觀了由原水入口處至過濾池的整個濾水過程。這次開放日更設有一個與濾水廠有關的展覽，內容包括「香港主要的供水系統」、「食水處理工藝流程」、「香港食水處理技術的發展」及「濾水廠的創新科技」等，令市民對最新的食水處理技術和本港不同濾水廠的發展歷史有更深入的認識。

To convey proper message about water quality and to help introduce the water treatment process to the public, WSD organised an Open Day at Ma On Shan WTW on 20th November 2016. The Open Day attracted people from

all walks of life who were guided by our volunteer staff for a technical tour of the entire water treatment process from the raw water inlet to filtration and disinfection. In the Open Day this year, the Exhibition Gallery showcased a series of exhibitions that helped introduce "Raw Water Supply System in Hong Kong", "Water Treatment Process", "Development of Water Treatment Technology in Hong Kong" and "Innovation at Water Treatment Works" to help broaden visitors' understanding about the latest water treatment technology and the history of different treatment works.

「大廈優質供水認可計劃－食水(2.0版)及沖廁水」證書頒發典禮2016 Quality Water Supply Scheme for Buildings – Fresh Water (Plus) & Flushing Water Certificate Presentation Ceremony 2016

水務署於二零一六年十一月舉行「大廈優質供水認可計劃－食水(2.0版)」及「大廈優質供水認可計劃－沖廁水」證書頒發典禮，以表揚業主、業主立案法團、物業管理公司和其他相關團體在妥善維修保養樓宇食水系統及沖廁水系統方面所作出的努力。截至二零一六年十月底，本署已分別頒發1,366和1,454張證書予參與「大廈優質供水認可計劃－食水(2.0版)」和「大廈優質供水認可計劃－沖廁水」的樓宇。

The certificate presentation ceremony for Quality Water Supply Scheme for Buildings – Fresh Water (Plus) (Q-Plus) and Quality Water Supply Scheme for Buildings – Flushing Water (QWSSBFW) was held in November 2016 to recognise the efforts of building owners, owners' incorporations, property management agents, and other related entities for proper maintenance of their fresh water and flushing water plumbing systems. By the end of October 2016, 1,366 and 1,454 certificates were issued for the participating buildings in Q-Plus and QWSSBFW respectively.



節約用水週2016 Water Conservation Week 2016

由水務署主辦的「節約用水週2016」於二零一六年十一月十七日至二十一日假香港理工大學舉行，主題是「節約用水 你我都得」。水務署借助「點滴香港•探古惜今創未來」展覽以及每日為特定對象安排的一系列活動，向社會各階層推廣節約用水，讓市民認識氣候變化對水資源帶來的各種挑戰，以及在社區內建立節約用水的文化。

我們在「節約用水週」期間舉辦了一系列精彩活動。首先，我們舉辦了「惜水學堂」頒獎典禮，嘉許於二零一五／一六學年在推動節約用水方面有傑出表現的學校和辦學團體。大會上「滴惜仔」、「大唯鬼」和水務署的同事擔綱演出一齣精彩的話劇，向現場觀眾傳遞節約用水的信息。水務署也舉行了「商界節水零浪費」論壇暨「用水效益最佳實務指引」啟動禮，向餐飲業及酒店業推出適用於業界的指引。



市民也參加了探索米埔和大潭的生態導賞團、節約用水Go Go Run、週日嘉年華和「滴惜•DIY」工作坊。而在「點滴傳承—邁步向前」水資源研討會上，市民亦可從多位環保團體的講者的分享，了解氣候變化對水資源的保育和管理所帶來的挑戰。

WSD organised the Water Conservation Week 2016 (WCW) from 17th to 21st November 2016 at The Hong Kong Polytechnic University under the theme “Save Water We Can”. Through the “Water Conservation – Past • Present • Future” Exhibition and a wide range of targeted activities arranged each day for different stakeholders, WCW promoted water conservation to different sectors of the community in order to help the public understand the challenges brought by climate change on water resources and to build a water conservation culture throughout the community.

We organised various activities during WCW. Firstly, we held the “Cherish Water Campus Award Ceremony” to commend the outstanding performance of the participating schools and sponsoring bodies in the 2015/16 school year. A lively “Cherish Water Campus” Drama with a cast that included Water Save Dave, Big Waster and several WSD colleagues was staged to convey water conservation messages. We also held the “Zero Waste in Trades” Forum cum Launching Ceremony on “Best Practice Guidelines for Water Usage” to launch the guidelines for the catering and hotel industries.

The public also participated in eco-tours to Mai Po and Tai Tam, the “Save Water Go Go Run”, Sunday Carnival, “Water Save • DIY” Workshops, and learned from prominent environmental studies speakers about the challenges brought by climate change on water conservation and water resources management by joining the “Water Resources Sustainability – Marching On” Seminar.

二零一六年
十二月
December 2016

建設智管網，九龍東、沙田及離島主供應區內餘下的監測區域及水壓管理區域－勘查研究、設計及建造的顧問合約簽署儀式

Signing Ceremony of the Consultancy Agreement for the Implementation of Water Intelligent Network, Remaining District Metering Areas and Pressure Management Areas in Kowloon East, Sha Tin and Islands Major Supply Zones – Investigation, Design and Construction



博威工程顧問有限公司獲批建設智管網，九龍東、沙田及離島主供應區內餘下的監測區域及水壓管理區域－勘查研究、設計及建造的顧問合約。合約價值1,130萬港元。合約簽署儀式於二零一六年十二月十五日舉行。

A consultancy agreement worth \$11.30 million was awarded to Black & Veatch Hong Kong Limited for the Investigation, Design and Construction of Implementation of Water Intelligent Network (WIN), Remaining District Metering Areas and Pressure Management Areas in Kowloon East, Sha Tin and Islands Major Supply Zones. The contract signing ceremony was held on 15th December 2016.

建設智管網，元朗、上水及粉嶺主供應區內餘下的監測區域及水壓管理區域－勘查研究、設計及建造的顧問合約簽署儀式

Signing Ceremony of the Consultancy Agreement for the Implementation of Water Intelligent Network, Remaining District Metering Areas and Pressure Management Areas in Yuen Long and Sheung Shui & Fanling Major Supply Zones – Investigation, Design and Construction

邁進(香港)有限公司獲批建設智管網，元朗、上水及粉嶺主供應區內餘下的監測區域及水壓管理區域－勘查研究、設計及建造的顧問合約，合約價值814萬港元。合約簽署儀式於二零一六年十二月十五日舉行。

A consultancy agreement worth \$8.14 million was awarded to Meinhardt (Hong Kong) Limited for the Investigation, Design and Construction of Implementation of WIN, Remaining District Metering Areas and Pressure Management Areas in Yuen Long and Sheung Shui & Fanling Major Supply Zones. The contract signing ceremony was held on 15th December 2016.



港島及離島水管測漏的合約簽署儀式

Signing Ceremony of the Contract for the Leak Detection for Water Mains in Hong Kong and Outlying Islands

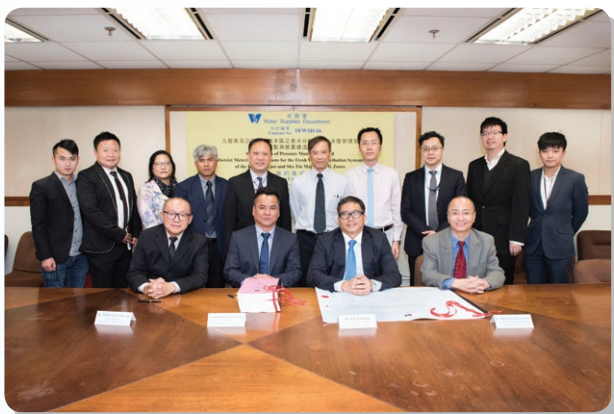
沛達工程顧問有限公司獲批港島及離島水管測漏的合約。合約價值370萬港元。合約簽署儀式於二零一六年十二月二十二日舉行。

A service contract worth \$3.7 million was awarded to BUDA Engineers and Consultants Co. Limited for the leak detection for water mains in Hong Kong and the Outlying Islands. The contract signing ceremony was held on 22nd December 2016.



九龍東及沙田主要供水區之食水分配系統的水壓管理及區域監測裝置建造工程的合約簽署儀式

Signing Ceremony of the Contract for the Construction of Pressure Management and District Metering Installations for the Fresh Water Distribution Systems of the Kowloon East and Sha Tin Major Supply Zones



駿業水務建築(香港)有限公司獲批九龍東及沙田主要供水區之食水分配系統的水壓管理及區域監測裝置建造工程的合約。合約價值1.3798億港元。合約簽署儀式於二零一六年十二月二十三日舉行。

A contract worth \$137.98 million was awarded to Chun Yip Waterworks Construction (HK) Limited for the Construction of Pressure Management and District Metering Installations for the Fresh Water Distribution Systems of the Kowloon East and Sha Tin Major Supply Zones. The contract signing ceremony was held on 23rd December 2016.

環保嘉年華2017 Green Carnival 2017

二零一七年
一月
January 2017

由環保促進會於二零一七年一月八日假九龍公園廣場舉辦的「環保嘉年華」是一年一度的公眾環保教育活動，旨在向市民推廣綠色低碳生活。水務署副署長黃仲良先生為活動開幕禮擔任主禮嘉賓並致辭。水務署是活動的支持機構之一，於嘉年華會場擺設遊戲攤位，鼓勵公眾節約用水。

Organised by Green Council on 8th January 2017 at Piazza, Kowloon Park, "Green Carnival 2017" is an annual public environmental education event to promote a green low-carbon life style. The Deputy Director of Water Supplies, Mr WONG Chung-leung officiated at the opening ceremony and delivered a speech. As a supporting organisation, WSD set up a game booth at the event to promote water conservation.



用水小貼士講座 Seminars on Water Usage Tips

為進一步推廣及加深各方對食水安全和使用固定熱水罈的認識，水務署分別於二零一七年一月十七日、十八日和二十日為幼稚園、幼稚園暨幼兒中心、院舍、日間中心和幼兒中心舉辦了四場講座，題目分別為「確保食水水質和飲用安全的方法」及「正確使用固定熱水罈須知」。

To further promote and deepen the understanding of respective parties on water safety and the use of wall-mounted dispensers, WSD organised four seminars for kindergartens, kindergarten-cum-child care centres, residential institutions, day care centres and child care centres on 17th, 18th and 20th January 2017, focusing on the topics of "Ways to Ensure Water Quality and Water Safety in Drinking Water" and "Proper Use of Wall-mounted Dispensers".



天水圍水資源教育中心設計及建造管理的顧問合約簽署儀式 *Signing Ceremony of the Consultancy Agreement for the Design and Construction Management for the Water Resources Education Centre at Tin Shui Wai*

二零一七年
二月
February 2017



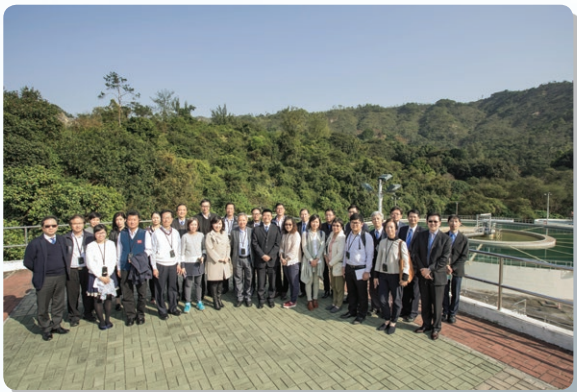
利安顧問有限公司獲批天水圍水資源教育中心設計及建造管理的顧問合約。合約價值530萬港元。水資源教育中心將會展示有關水資源保護的知識和教育展品。合約簽署儀式於二零一七年二月二十一日舉行。

A consultancy agreement worth \$5.3 million was awarded to Leigh and Orange Limited for the design and construction management of the Water Resources and Water Conservation Exhibition Centre, which present knowledge-based, and educational exhibits on water conservation issues. The contract signing ceremony was held on 21st February 2017.

二零一七年
三月
March 2017

屯門區議會議員到訪屯門濾水廠 *Tuen Mun District Council Members Visit Tuen Mun Water Treatment Works*

水務署非常重視持份者的意見，以維持良好的社區關係。為此，水務署於二零一七年三月二日邀請屯門區議會到訪屯門濾水廠。在這次視察中，水務署向區議員介紹了屯門濾水廠內整個食水處理過程中涉及的技術、水質監控程序及再生能源的應用，並邀請區議員就本署的服務提供意見。



WSD attaches great importance to the views of stakeholders in order to maintain good community relations. To this end, WSD invited the Tuen Mun District Council to visit the Tuen Mun WTW on 2nd March 2017. Through this visit, members were briefed on the technology, water quality monitoring procedures and application of renewable energy involved in the entire water treatment process of the WTW. WSD also sought members' advice about its services.

強制使用已註冊「用水效益標籤計劃」的指定產品的講座 *Seminar on Mandatory Use of Designated Products registered under the "Water Efficiency Labelling Scheme" (WELS)*

本署在二零一七年二月一日推出強制使用已註冊「用水效益標籤計劃」的指定產品的規定後，於二零一七年二月二十三日及三月六日舉行了兩場講座，向持份者介紹有關措施和解答他們的疑問。

Following the launch of measures concerning the mandatory use of designated products registered under WELS on 1st February 2017, WSD organised two seminars for stakeholders on 23rd February and 6th March 2017, to introduce the associated measures and to answer their enquiries.



掙水一戰2017 *Race for Water 2017*

由點滴是生命舉辦的「掙水一戰2017」於二零一七年三月十二日為「世界善用食水日」揭開序幕，藉此喚起公眾對珍惜食水及節約用水的關注。超過4,200名參賽者揹負4.5公升水完成指定的賽程，身體力行體驗為取水而長途跋涉的苦況，從而體會「水」的珍貴。水務署總工程師／發展(2)鍾兆榮先生是活動開幕禮的主禮嘉賓之一，並發表了有關節約用水的講辭。



Organised by A Drop of Life, "Race for Water 2017" was held as a prelude to "World Water Day" on 12th March 2017, for the purposes of raising public awareness about water conservation. This year, over 4,200 participants, each carried 4.5 litres of bottled water along a designated route in order to experience the hardship of travelling long distances to fetch water. This event helped raise participants' awareness about cherishing water. Chief Engineer/Development (2) of WSD, Mr CHUNG Siu-wing, Joseph, was one of the officiating guests at the launching ceremony and delivered a speech to promote water conservation.



水務科研交流及茶聚

Tea Gathering on Research and Development at WSD

本署積極應用創新科技去應對各種挑戰，為此更於二零一六年十二月成立了「研究及發展督導委員會」以加強研究與發展的活動及日後的應用工作。委員會一向熱衷於與各大院校的研究及發展團隊合作。在二零一七年三月十四日，委員會邀請本地學者到大埔濾水廠作茶聚及交流。在到訪學者參觀濾水設備（包括「斑馬魚水質監察系統」及「氣泡浮聚淨化濾水設施」）後，副署長黃仲良先生連同本署同事與學者交流意見，並且分享在供水方面面對的各種挑戰。茶聚交流亦涵蓋了有關食水處理、水質監控、資產管理、再生能源科技及其應用等可行的研究發展課題。這次活動成功加深了本署和本地學術界的溝通和認識，為將來的合作奠定基礎。本署將繼續尋覓更多在研究和發展方面與學術界合作的機會，藉推動水務科技創新和改進，提升本署服務。



WSD actively applies the latest technologies to meet new challenges. The Steering Committee on Research and Development (R&D) was formed in December 2016 to strengthen R&D activities and their future application. The Committee has been actively looking for collaboration opportunities with the R&D teams of several universities. A "Tea Gathering on R&D" event with members of local academia was held on 14th March 2017, at the Tai Po WTW. Following the technical tour,

which included a visit to the Zebrafish Bio-monitoring System and Dissolved Air Flotation Facility, Deputy Director of Water Supplies, Mr WONG Chung-leung together with his colleagues shared and exchanged ideas about the challenges concerning water supplies. The event also covered potential R&D topics related to water treatment, water quality control, asset management, as well as renewable energy technologies and their practical applications. The Tea Gathering successfully enhanced communication and strengthened the foundation for future collaborations between the department and local academia. WSD will continue to seek more collaborative opportunities with academia in R&D to enhance our services by innovation and improvements in water science and technology.

與香港地球之友合辦水論壇2017

“Water Forum 2017” Co-organised with Friends of the Earth (Hong Kong)

為響應「世界善用食水日」這個極具意義的日子，香港地球之友聯同水務署於二零一七年三月二十二日合辦「水論壇2017」。今年論壇的主題為「氣候變化衝擊與應變－海綿城市」。大約150位學者和來自各業界、環保團體及專業團體的代表出席了論壇，聚焦討論香港如何面對氣候變化的威脅及香港的全面水資源管理策略。論壇更設有討論及答問環節，促進講者與聽眾互相交流意見和分享經驗。

To mark the importance of “World Water Day”, Friends of the Earth (Hong Kong) collaborated with WSD on 22nd March 2017, to organise the “Water Forum 2017” under the key theme “Climate Change Resilience – Sponge City”. Around 150 academics and representatives from various business sectors, green groups and professional bodies attended the Forum to contribute to the focused discussions about Hong Kong’s readiness to cope with the potential threats posed by climate change as well as issues related to the total water management strategy in Hong Kong. The speakers and attendees exchanged views and shared their experiences during the panel discussion as well as the question and answer sessions.



署長的話

Director's Statement

持續提升本港食水安全和供水保障是水務署莊嚴的責任和義務。通過與專業人士、專家和各業界合作，加強宣傳和持份者的參與，水務署一直以多管齊下的方針，滿足客戶對優質供水服務的需求。

We at WSD have a solemn duty and obligation to continually enhance the quality of water supply services in terms of both water safety and water security. Working together with professionals and experts as well as cooperating with various industry associations and through enhanced publicity and stakeholder engagement, WSD has been implementing a multi-pronged approach with a mission to excel in satisfying customers' needs for provision of quality water services.



林天星工程師，太平紳士
Ir LAM Tin Sing, Enoch, JP

水務署署長
Director of Water Supplies





加強供水保障

由二零零八年起，本署推出全面水資源管理策略，以全方位管理水資源，維持供水和用水需求之間的最佳平衡，達致可持續使用水資源的目標，並為香港做好準備以應對日後全球氣候變化帶來的不明朗因素。這一策略主要著眼於通過推廣節約用水以節制本地用水需求的增長，以及開發新的水資源。全面水資源管理策略推出以來，已為本地的供水保障和可靠性作出重大貢獻。

建基於我們迄今取得的成功，我們將繼續落實全面水資源管理策略的措施，並計劃於二零一八年前完成全面檢討工作，以期更新全面水資源管理策略，更充份地裝備自己以應對各種不明朗因素和挑戰。

節約用水

本署一直採取多管齊下的方法，推廣住宅和非住宅的節水措施，同時採用有效的硬件及軟件策略。

Enhancing Water Security

Since 2008, we have promulgated the Total Water Management (TWM) Strategy in order to manage all aspects of water resources to achieve an optimal balance between water supply and demand for sustainable use of water resources and to better prepare the Territory for future uncertainties resulting from global climate change. This strategy focuses primarily on curbing the growth of local water demand through promoting water conservation and exploiting new water resources. Since its inception, the TWM has made good contribution towards water security and reliability for the Territory.

Building on successes we have achieved to date, we will continue implementing the initiatives under the TWM strategy and have embarked on a comprehensive review for completion by 2018 with a view to updating the TWM strategy for strengthening our resilience while staying fully prepared against any uncertainties and challenges.

Water Conservation

Our Department has been adopting a multi-pronged approach that promotes water conservation in both the domestic and non-domestic sectors while applying both effective hardware and software strategies.

在教育及宣傳工作方面，水務署於二零一五／一六學年在小學推出「惜水學堂」節約用水教育計劃，以加深學生對水資源、節約用水和水資源可持續性的認識，以應對氣候變化的影響。乘着「惜水學堂」取得的成功，我們將在二零一七／一八學年在幼稚園推行先導教育計劃。

此外，我們亦於二零一六年十一月假香港理工大學舉辦「節約用水週2016」。一系列向市民推廣節約用水的活動深受歡迎，吸引了超過二萬人參與其中。這項為期一周的特別活動旨在向包括教育界、餐飲和酒店業以及環保團體在內的各個社區界別推廣節約用水，並幫助公眾了解氣候變化給水資源帶來的挑戰。

With respect to education and promotional schemes, WSD has launched the “Cherish Water Campus” integrated education programme for primary schools since the 2015/16 school year in order to broaden students’ knowledge about water resources and raise their awareness of water conservation while deepening their appreciation of water sustainability in order to address the effects of climate change. Riding on the success of “Cherish Water Campus”, we will launch a pilot education programme for kindergarten students in the 2017/18 school year.

On the other hand, Water Conservation Week 2016, a programme of publicity and outreach activities about water conservation held at the Hong Kong Polytechnic University in November 2016 was well received, attracting more than 20,000 visitors. The aim of this special week-long event was to promote water conservation in various community sectors including education, catering and hotel industries, and environmental sectors and to aid public understanding of the challenges brought about by climate change on water resources.



本署副署長黃仲良先生與一眾「點滴傳承－邁步向前」水資源研討會嘉賓合照。
A group photo of the Deputy Director of Water Supplies, Mr WONG Chung-leung together with other guests of the “Water Resources Sustainability – Marching On” Seminar.

新的供水來源

在全面水資源管理策略及其現行措施的推動下，水務署正建立一個由本地集水、輸入東江水、海水沖廁、海水化淡、再造水、中水重用及雨水回收組成的多源供水結構。這六個供水來源將共同構成本港未來的供水支柱，令本港水資源更為安全、可靠及穩健。建立這些新供水來源的工作進展良好。

海水化淡

我們一直都有留意海水化淡技術方面的最新發展。分別於二零零二年及二零零七年完成的可行性研究，已確定採用逆滲透海水化淡技術生產的食水，可符合世界衛生組織所定的《飲用水水質準則》。這些年來，逆滲透技術日趨成熟，海水化淡的成本亦逐漸下降，我們認為現在是為香港發展海水化淡的適當時機。

隨將軍澳第137區海水化淡廠的策劃和勘察研究完成後，我們於二零一五年十一月委聘顧問為該廠展開設計工作。我們正準備就其「設計—建造—運作」的合約進行招標，以期於二零一八年年尾展開工程。擬建海水化淡廠將採用逆滲透技術，其食水產量為每日135,000立方米，其後可擴展至每日270,000立方米，為本港供應約百分之五至十的總食水量。我們已完成海水化淡廠的相關輸水基建部分，即連接海水化淡廠至現有將軍澳配水庫的十公里水管的設計工作，該工程亦會隨後展開。

New Water Resources

The TWM strategy and its on-going initiatives are moving us towards a water supply structure that comprises multi-faceted sources, including local yield, imported Dongjiang water, sea water for flushing, desalinated water, recycled grey water and harvested rainwater as well as reclaimed water. These six water supply sources will be the pillars that altogether support Hong Kong's enhanced water security, reliability and resilience. Good progress has been achieved in establishing these new sources.

Desalination

We have been keeping abreast with the latest developments in desalination technology. The feasibility studies in 2002 and 2007 have confirmed that sea water desalination using reverse osmosis is a viable technology to produce potable water in compliance with the World Health Organization (WHO)'s Guidelines for Drinking-water Quality. The technology of reverse osmosis has become more mature and the cost of sea water desalination has been reduced over the years, making it a right juncture for Hong Kong to develop sea water desalination.

Having completed the planning and investigation study on a desalination plant in Tseung Kwan O Area 137, we engaged consultants in November 2015 to embark on the design of the desalination plant. We are preparing to invite tenders for a "Design-Build-Operate" (DBO) contract of the plant for works commencement in end 2018. The proposed desalination plant will adopt reverse osmosis technology, and will have a water production capacity of 135,000 m³ per day expandable to 270,000 m³ per day to meet about 5% to 10% of the overall fresh water demand of Hong Kong. The design of the associated water transfer infrastructure part of the desalination plant viz. 10 km water mains from the future plant to an existing service reservoir in Tseung Kwan O has been completed and its construction will then commence.

再造水

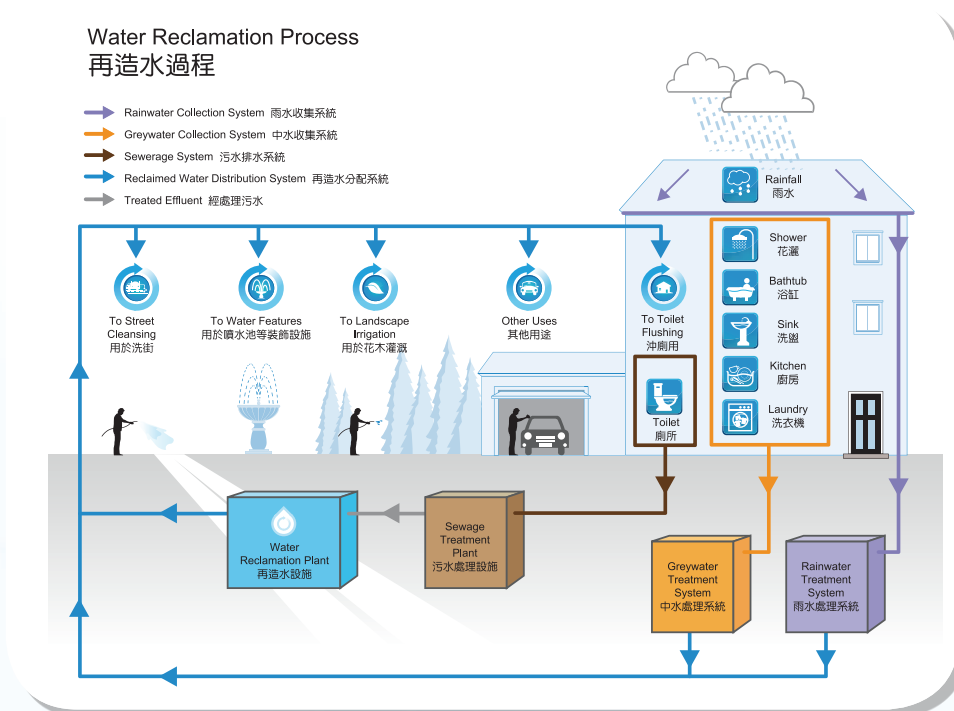
再造水是指經過污水廠高度處理的排放水而生產的水。香港於二零零六年開始推行再造水使用試驗計劃。政府在昂坪進行首項試驗計劃，將經污水處理廠處理過的污水轉化成再造水後，用作非飲用用途。使用再造水作非飲用用途除了可以節省食水資源（尤其是在那些供應海水作沖廁用途並不具成本效益的內陸地區），也可以減少處理後的污水排放量。因此，再造水是一種既節省食水又環保的水源。

水務署會繼續努力，以期在二零二二年由上水及粉嶺開始，把經石湖墟污水處理廠三級處理排放水生產的再造水，提供予新界東北部地區作沖廁用途。供應再造水將有助本港每年節省約2,100萬立方米食水。

Reclaimed Water

Reclaimed water is produced from highly treated effluent in sewage treatment works. Pilot schemes involving the use of reclaimed water began in Hong Kong in 2006. The Government has commissioned the first pilot scheme at Ngong Ping to provide reclaimed water, by converting the treated effluent from sewage treatment works, for non-potable uses. The use of reclaimed water for non-potable purposes can save fresh water especially in inland areas where supply of salt water for flushing is not cost effective and reduce the amount of treated effluent discharge. It can be regarded as a water-saving and environment-friendly water resource.

We continue our work to supply reclaimed water, converted from tertiary treated sewage effluent at the Shek Wu Hui Sewage Treatment Works, to the north-eastern part of the New Territories for flushing uses starting with Sheung Shui and Fanling from 2022 onwards. The supply of reclaimed water is estimated to save Hong Kong about 21 million cubic metres of fresh water each year in future.



發展再造水為新的水源是水務署推行的《全面水資源管理策略》中供水措施的一環。

Developing reclaimed water as a new water resource is one of supply initiatives under TWM Strategy implemented by the Water Supplies Department.

中水重用／雨水回收

從浴室、洗手盆、廚房洗滌盆和洗衣機等地方收集得來的水稱為中水。中水與收集的雨水經處理後可予以重用，作沖廁等非飲用用途。我們已就中水重用及雨水回收系統訂立指引，讓新建政府大樓安裝處理和循環設施，通過中水重用或雨水回收系統減少食水作非飲用用途的使用量。水務署在安達臣道石礦場用地發展項目中將興建中央中水重用系統，處理從發展區中收集的中水作以沖廁為主的用途。該系統包括一所中水處理廠及相關抽水系統、一個配水庫，以及收集中水和輸送經處理後的中水到客戶的管道。建造工程預期於二零一九年展開，並於二零二二年完成。

提升食水安全

目前，我們正根據世界衛生組織於二零一一年發布的第四版《飲用水水質準則》監測食水水質。在二零一五年食水含鉛超標事故發生後，水務署聯同有關的政府決策局及部門，不遺餘力地採取跟進行動，推行一系列有效改善本港食水安全的措施。

水務署已委聘顧問制訂《香港食水水質標準》。根據發展局成立的食水安全國際專家小組的建議，並大量參考海外的經驗和知識後，發展局與水務署已全面檢討現行的食水安全制度，制訂行動計劃，並預計於二零一七年九月推出計劃，以保障食水水質。這項行動計劃包含五個部分，分別是

Grey Water Recycling/Rainwater Harvesting

Water collected from baths, showers, wash basins, kitchen sinks and laundry machines etc. is known as grey water. Along with harvested rainwater, the grey water can be treated and reused for non-potable purposes such as toilet flushing. We have formulated guidelines on the implementation of rainwater harvesting and grey water recycling systems so that new government buildings with the potential of reducing their fresh water demand for non-potable applications through rainwater harvesting or grey water recycling system can be installed with on-site treatment and recycling facilities. WSD will construct a centralized grey water recycling system to treat grey water collected from the Anderson Road Quarry Site Development mainly for toilet flushing use. The system comprises a grey water treatment plant with associated pumping system, a service reservoir, pipes for grey water collection and distribution of the treated grey water to consumers. The construction works are planned to commence in 2019 for completion in 2022.

Enhancing Water Safety

Currently, we are monitoring drinking water quality in accordance with the fourth edition of the Guidelines for Drinking-water Quality published by the WHO in 2011. After the occurrence of the excess lead in drinking water incident in 2015, WSD, working together with relevant government bureaux and departments, has spared no efforts in taking forward, follow-up actions to implement a host of effective improvement measures that will enhance drinking water safety in Hong Kong.

WSD has engaged a consultant to establish Hong Kong Drinking Water Standards. Following the advice of the International Expert Panel on Drinking Water Safety (IEP) established by the Development Bureau (DEVB) and with reference to the wealth of overseas experiences and knowledge, DEVB and WSD has holistically reviewed the existing drinking water safety regime in Hong Kong and is developing an Action Plan for promulgation

「食水標準及水質監測優化計劃」、「水喉物料監管及新建水喉裝置驗收規定」、「水安全計劃」、「食水安全規管制度」和「宣傳及公眾教育」。

此外，水務署已開始全面檢討《水務設施條例》及《水務設施規例》，對法例作出修訂，以配合水管業界的最新發展、技術和做法。檢討工作包括檢討從業員的角色和責任，以及技術要求和水管物料標準。為此，水務署已確定了數項須優先處理的修訂，其中包括界定持牌水喉匠和水管工人的職責，以及該些有關更新內部供水系統所用水管物料標準的修訂。修訂草案將於二零一六至二零一七年度提交立法會審議。

展望未來，面對重重挑戰，水務署將繼續保持警覺，憑藉上下一心的凝聚力和積極主動的策略，不論是現在還是未來，都會致力提供優質服務、精益求精。

in September 2017 with an aim to safeguarding the drinking water quality. The Action Plan will comprise five components, namely “Drinking water standards and enhanced water quality monitoring programme”, “Plumbing material control and commissioning requirements for new plumbing installations”, “Water safety plans”, “Water safety regulatory regime”, as well as “Publicity and public education”.

Moreover, WSD has embarked on a holistic review of the Waterworks Ordinance and its Regulations with a view to revamping the legislation in order to cater for the latest developments in the plumbing trade as well as technologies and practices, including a review of the roles and responsibilities of trade personnel plus technical requirements and plumbing material standards. In this regard, WSD has identified several priority amendments including those that define the duties of the licensed plumbers and plumbing workers, and those related to updating the standards for plumbing materials used for the inside services and will submit them to the Legislative Council for deliberations during the 2016-17 legislative session.

Looking ahead, with continued vigilance against manifold challenges coupled with our cohesive and pro-active strategies, we at WSD will strive to deliver ever improving service quality now and the years to come.



林天星工程師，太平紳士
水務署署長

Ir LAM Tin Sing, Enoch, JP
Director of Water Supplies

主要工作表現指標

Key Performance Indicators

財政年度(百分比)
Financial Year (Percentage)

指標 Indicators	14/15	15/16	16/17
食水水質(供水接駁位置) 100%符合世界衛生組織在二零一一年制定的《飲用水水質準則》 [#] Fresh Water Quality (at connection points) 100% compliant with WHO's "Guidelines for Drinking-water Quality"(2011 [#])	達到指標 Target achieved	達到指標 Target achieved	達到指標 Target achieved
海水水質(供水接駁位置) 96%符合水務署所定的水質指標 Salt Water Quality (at connection points) 96% compliant 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) ^λ Fresh Water Supply Pressure (15 – 30 metres) ^λ	100	100	100
海水供水水壓(15米) ^λ Salt Water Supply Pressure (15 metres) ^λ	100	100	100

財政年度(百分比)
Financial Year (Percentage)

到場處理故障投訴所需的時間 Response Time for Attendance to Fault Complaints			
食水供應故障 ^λ (半天內) Fresh Water Supply Fault ^λ (within half a day)	100	100	100
其他(24小時內) Others (within 24 hours)	100	100	100
因預算進行的工程而暫停供水的時間長度(98%於八小時內) Duration of Suspension of Water Supply for Planned Works (98% within 8 hours)	達到指標 Target achieved	達到指標 Target achieved	達到指標 Target achieved
水錶準確程度 [@] (偏差程度不超過±3%) Accuracy of Water Meters [@] (inaccuracy not exceeding ± 3%)	96.7	97.0	97.3

[#] 已於二零一二年八月採用世界衛生組織在二零一一年制定的《飲用水水質準則》。
The World Health Organization (WHO) Guidelines for Drinking-water Quality (2011) were adopted in August 2012.

^λ 配水系統的最低剩餘水壓(系統的盡頭除外)。
Minimum residual pressure in the distribution systems except at their extremities.

^λ 包括食水供應中斷、食水受污染以及因內部食水管爆裂而可能導致水浸的情況。
Including cases of no fresh water supply; polluted fresh water supply; and internal fresh water pipe bursts likely to cause flooding.

[@] 在驗錶時，如水錶的偏差程度不超過 ±3%，水錶即視作運作正常。
Water meters are deemed to register correctly if their inaccuracy does not exceed ± 3%.





供水管理

Water Supply Management

供水管理

Water Supply Management



全面水資源管理

於二零零八年發佈的「全面水資源管理策略」為我們持續使用珍貴的水資源提供堅實基礎。此策略強調控制用水需求增長及加強供水，以令香港能更好地應對未來的不明朗因素及挑戰。本署一直多管齊下，採取「軟硬兼備」的策略，向住宅用戶及非住宅用戶推廣節約用水。除抑制用水需求增長外，我們亦已完成為期15年、長達3,000公里的老化水管更換及修復計劃，大幅減少水管滲漏情況，並逐步建立「智管網」，持續監測供水網絡狀況，以便及時採取適當和具成本效益的行動，讓我們成功開創管網管理新紀元。

Total Water Management

The Total Water Management strategy promulgated in 2008 provides a firm foundation for us to move toward sustainable use of our precious water resources. This strategy places emphasis on containing the growth of water demand and strengthening supply to better prepare Hong Kong for future uncertainties and challenges. Our Department has been adopting a multi-pronged approach to promote water conservation in both domestic and non-domestic sectors, applying hardware as well as software strategies. On the other front of containing water demand growth, we have achieved a significant reduction in water main leakage following the completion of a 15-year programme of replacement and rehabilitation for 3,000 kilometres of aged water mains, and are progressively establishing the Water Intelligent Network (WIN) to continuously monitor the health of water supply networks in order to respond with timely and cost effective actions, bringing the network management into a new era.

策略回顧

本署深知水資源所面臨的挑戰。為了確保依循正確的方向進發，本署於二零一四年底聘請顧問，對全面水資源管理策略進行全面檢討。這次檢討旨在借鑒海外相關經驗、評估現有水資源管理措施的成效、預測直至二零四零年的水資源需求及供應情況、尋求新的水資源管理措施，以及在有需要時適當調整現行措施，以加強本署的應變能力，讓本署作好更充足的準備，以應對因氣候變化、快速的人口和經濟增長，以及廣東省多個城市對東江水的競爭加劇而帶來的不明朗因素及挑戰。

六管齊下的供水結構

目前，香港供水系統有三個分支，包括本地集水區收集的雨水、從廣東輸入的東江水及沖廁用海水。二零一六年的總耗水量（包括沖廁用水需求）為12.47億立方米，其分項為29%雨水、50%東江水及21%海水。憑藉這三個水源，香港多年來一直擁有可靠的供水。

然而，為使香港能充分應對上述各種挑戰，本署致力透過用水流失管理及節約用水控制用水需求增長，並探索受氣候影響較少的海水化淡及再造水作為可替代水源。隨著該等措施的推行，本署正致力建設六個分支的供水結構，該結構由現有三個來源—本地集水、輸入的東江水及沖廁用海水，以及三個新增來源，（即淡化海水、再造水和重用中水及回收雨水）構成。這六個供水來源將成為提升香港供水保障及適應性的重要支柱。

Strategy Review

The Department fully recognises the challenges faced by our water resources. In order to ensure moving forward on the right track, we appointed consultants in late 2014 to conduct a comprehensive review of the Total Water Management Strategy. The review aims to make reference to relevant experience overseas, evaluate the effectiveness of existing water management measures, forecast water demand and supply up to 2040, seeking for new water management initiatives and adjustments to the existing measures if necessary to strengthen our resilience and preparedness against uncertainties and challenges arising from climate change, rapid population and economic growth, as well as heightened competition for Dongjiang water among cities in Guangdong Province.

6-Pronged Water Supply Structure

Currently, Hong Kong has a 3-pronged water supply system, comprising rainwater from local catchments, imported water from Dongjiang in the Guangdong Province, and the use of sea water for toilet flushing. The share breakdown of total water consumption in 2016 (including flushing water demand) was 1,247 million cubic metres, comprising 29% rainwater, 50% imports from Dongjiang, and 21% from sea water. These three water sources have provided Hong Kong with a reliable water supply over the decades.

Nevertheless, to better prepare Hong Kong for the aforementioned challenges, we have been striving to contain water demand growth through water loss management and water conservation and by exploiting alternative water resources which are less susceptible to climate change, including sea water desalination and water reclamation. With the implementation of these measures, WSD is moving towards the establishment of a 6-pronged water supply structure, comprising the existing three sources – local yield, imported Dongjiang water and sea water for flushing, supplemented by three new sources, i.e. desalinated water, reclaimed water, plus recycled grey water and harvested rainwater. These six water supply sources will become the pillars supporting Hong Kong with enhanced water security and adaptation into the future.

東江水

東江水佔目前本港食水供應量約七成至八成，能夠彌補本地集水量的不足以應付本港的食水需求。因此，可靠和穩定的東江水供應對本港非常重要。

自二零零六年起的東江水供水協議均採用「統包總額」方式，使香港有可靠和靈活的東江水供應以應付實際需求；並確保供水的可靠性達99%，即縱使在百年一遇的極旱情況下，仍能維持全日供水。採用這個方式，我們一方面可按需要輸入東江水至供水協議所訂明每年8.2億立方米的供水量上限；另一方面亦可在本地集水足夠時，避免浪費東江水資源以及節省抽水成本。根據現行為期三年的供水協議，二零一五年、二零一六年及二零一七年的東江水費用分別為42.23億港元、44.92億港元和47.78億港元。

本地集水

遍佈全港17個水塘的集水區佔香港面積近三成。一般而言，從集水區收集的雨水大多不受污染，然而，為確保食水安全，本署採取額外措施，包括進行定期巡查、檢查水質及對集水區進行必要維修和清除泥石等。本地雨水收集佔總食水用量約二至三成。

Dongjiang Water

Dongjiang (DJ) water, which now provides about 70% to 80% of our fresh water supply, is able to fill the gap due to the insufficient local yield in meeting the water demand. A reliable and stable supply of DJ water is thus essential for Hong Kong.

Since 2006, the “package deal lump sum” approach has been adopted in the DJ Water Supply Agreements to ensure a reliable and flexible supply of DJ water to meet the actual needs of Hong Kong with 99% reliability, i.e. water supply is maintained around the clock even under extreme drought conditions with a return period of once in 100 years. This approach enables us to import DJ water as needed each year up to an annual supply ceiling of 820 million cubic metres specified in the supply agreements while it also avoids wastage of the DJ water resources and saves our pumping costs when more local yield is available in a particular year. The current 3-year agreement for the cost of water from Guangdong breaks down to: HK\$4,223 million, HK\$4,492 million and HK\$4,778 million for the years 2015, 2016 and 2017 respectively.

Local Yield

All across Hong Kong, covering nearly 30% of the Territory, are catchment areas with 17 impounding reservoirs. In general, rainwater collected in catchment areas is uncontaminated. However, as additional measures for water safety, the Department makes regular inspections, checks water quality, carries out necessary maintenance and removes debris in the catchwaters. Local yield generally accounts for about 20% to 30% of our total fresh water consumption.

海水沖廁

除飲用水源外，本署同樣重視沖廁用的海水。薄扶林及新界西北（包括屯門東、元朗及天水圍）海水供應水務基礎設施完成後，沖廁用海水供水網絡覆蓋的人口已由八成上升至八成半。新界西北天水圍的海水沖廁轉換工作已於二零一六年底竣工，額外有30萬人口可利用海水沖廁。餘下地區的海水沖廁轉換工作正在逐步進行。

海水化淡

本署一直高度重視與供水管理有關的事宜，並致力探討所有可行方案尋找新的水資源。在這情況下，除了現有來自雨水、東江水和沖廁用海水的水資源外，我們還積極開發不會或不容易受氣候變化影響的新供水來源，包括海水化淡、再造水及中水重用及雨水回收。

氣候變化可能影響香港的供水穩健，為了發展不受氣候變化影響的新供水來源，我們應用先進的逆滲透技術，開始在將軍澳興建海水化淡廠。我們已完成擬建海水化淡廠第一階段的參考設計，並正準備為海水化淡廠的「設計—建造—運作」合約進行招標。我們將要求投標者建議合適的創新設計，在使用可再生能源、建築處理、環境影響和消耗較少能源的水處理過程各方面，令海水化淡廠能與未來周邊發展相協調，並與所在的自然棲息地和諧共存，以兌現水務署的使命宣言。

Sea Water for Flushing

In addition to potable water sources, we also place great importance on the application of sea water for toilet flushing. Following completion of the waterworks infrastructure for the supply of sea water to Pok Fu Lam and North West New Territories (Tuen Mun East, Yuen Long and Tin Shui Wai), the population coverage of sea water for flushing has increased from 80% to 85%. In northwest New Territories, conversion of flushing supply to sea water in Tin Shui Wai was completed by end of 2016 with an additional 300,000 population served by sea water flushing. The conversion works in remaining areas are now underway.

Sea Water Desalination

The Department always places great emphasis on issues concerning water supply management, and we have been working diligently to explore all viable options of new water resources. Given this scenario, apart from the existing water resources from rainwater, DJ water and sea water for flushing, we have been actively developing new sources of water supply that are not, or less susceptible to climate change, including sea water desalination, water reclamation, grey water recycling and rainwater harvesting.

In order to develop a new water source that is immune to climate change which could disrupt the security of our water supply in Hong Kong, we have embarked on the construction of a desalination plant in Tseung Kwan O (TKO), using advanced reverse osmosis technology. We completed a reference design of the first stage of the proposed desalination plant, and we are preparing to invite tenders for the DBO contract for the plant. We will require the tenderers to propose suitable innovative designs in terms of renewable energy usage, architectural treatment, environmental impacts, and water treatment processes that require less energy consumption, for blending the plant with future surrounding development coherently as well as harmoniously coexisting with its natural habitats to fulfill WSD's mission statement.

我們正準備就「設計－建造－運作」合約進行招標，以期於二零一八年年底展開化淡廠的建造工程。化淡廠的食水產量預期可滿足香港約百分之五的食水需求，日後產量可擴大至滿足本港約百分之十的食水需求。

再造水

本署亦計劃分階段向上水、粉嶺及古洞北和粉嶺北新發展地區提供石湖墟污水處理廠經三級處理排放水生產的再造水作非飲用用途，其中上水及粉嶺將於二零二二年起率先使用。本署已於二零一七年四月展開有關配水庫和輸水幹管的建造工程，預計向上述地區全面供應再造水最終可望每年節省約2,100萬立方米的食水。同時，本署正在制訂在香港供應再造水的適用財務及法律框架。

中水重用及雨水回收

從浴室、洗手盆和廚房洗滌盆等地方收集得來的水稱為中水。中水與回收雨水經處理後可予重用，作非飲用用途。

水務署將在安達臣道石礦場用地發展項目中興建中央中水重用系統。該系統由政府負責運作，處理在發展區內從居民收集的中水作以沖廁為主的用途。該系統將包括一所中水處理廠、抽水系統、一個貯存經處理中水的配水庫、以及收集中水和輸送經處理後的中水的管道。我們已聘任顧問為中水處理廠進行詳細設計，該廠的處理量為每日3,300立方米，而建造工程預計於二零一九年展開，並於二零二二年完成。

We are preparing for invitation of tenders for commencing construction of the plant by end 2018. The water production output is expected to meet about 5% of the fresh water demand in Hong Kong with provisions for expanding its capacity in the future to meet about 10% of the Territory's total fresh water demand.

Water Reclamation

We also plan to effect the supply of reclaimed water converted from tertiary treated sewage effluent at Shek Wu Hui Sewage Treatment Works to Sheung Shui, Fanling and New Development Areas in Kwu Tung North and Fanling North for non-potable uses in phases starting with Sheung Shui and Fanling from 2022 onwards. We began the construction of a relevant service reservoir and trunk mains in April 2017 and anticipate that the full-fledged reclaimed water supply to the above areas will ultimately save up to 21 million cubic metres of fresh water each year. Concurrently, we are developing an appropriate finance and legal framework for the supply of reclaimed water in Hong Kong.

Grey Water Recycling and Rainwater Harvesting

Water collected from baths, showers, wash basins and kitchen sinks is known as grey water. Along with harvested rainwater, these supplies can be treated and reused for non-potable purposes.

WSD will construct a centralized grey water recycling system at the Anderson Road Quarry Site Development, which is a government-operated system treating grey water collected from inhabitants within the development mainly for toilet flushing use. This system comprises a grey water treatment plant, a pumping system, a treated grey water service reservoir, and pipes for grey water collection and distribution of the treated grey water to the service reservoir and consumers respectively. We have engaged consultants to conduct the detailed design of the grey water treatment plant which will have a treatment capacity of 3,300 cubic metres per day, and the construction works are planned to commence in 2019 for completion in 2022.

本署一直在探索更廣泛地應用中水重用及雨水回收系統，以在合適的新政府項目中加以安裝。發展局和環境局發出的環保政府大樓聯合技術通告已納入詳細指引，讓新建政府大樓盡可能在合理的情況下安裝處理和再造設施，通過中水重用或雨水回收系統減少以食水作非飲用用途。

就私人樓宇而言，除了在二零一六年三月推出的綠建環評既有建築2.0版下，給予設有中水重用和雨水回收系統的樓宇額外得分外，我們正為香港綠色建築議會對綠建環評新建建築類似的檢討中提供技術支援，以鼓勵發展商提供設施減少非飲用用途的食水用量。

供水危機管理

為確保全港供水可靠及充足，本署須時刻作好準備應對任何影響供水的不可預見問題。為此，我們已制訂一個危機管理計劃、乾旱應變計劃和多個其他應變計劃，以隨時準備快速調配資源及協調各個緊急行動。

此外，本署已透過各種溝通渠道與其他政府部門保持緊密聯絡，以便在發生危機時，協調各方緊急應變措施以確保持續供水。

We have been exploring the wider use of grey water recycling and rainwater harvesting systems in suitable new government projects. Detailed guidelines have been incorporated into the Joint Development Bureau and Environment Bureau Technical Circular in Green Government Buildings so that new government buildings with the potential of reducing their fresh water demand for non-potable applications through rainwater harvesting or a grey water recycling system will be able to install on-site treatment and recycling facilities as much as is reasonably possible.

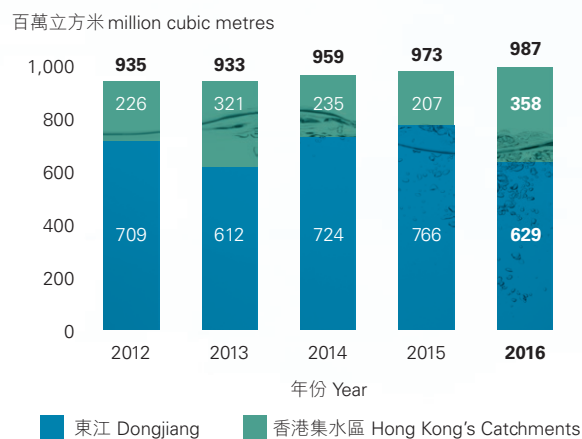
As far as private buildings are concerned, apart from bonus credits awarded to buildings with grey water reuse and rainwater harvesting systems under the Building Environmental Assessment Method (BEAM) Plus for Existing Buildings Version 2.0 launched in March 2016, we are providing technical support to Hong Kong Green Building Council in their similar review of BEAM Plus for New Buildings to encourage developers to provide these facilities in reducing the use of fresh water for non-potable uses.

Water Supply Crisis Management

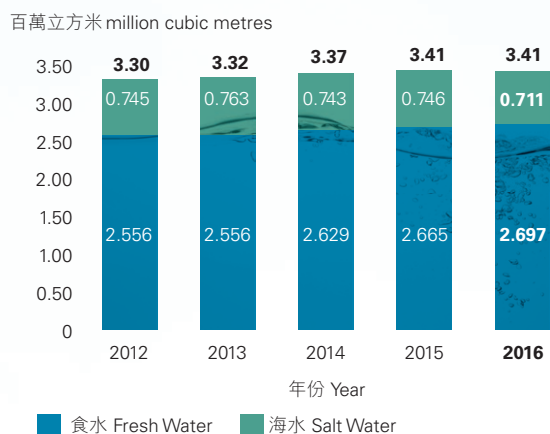
To ensure a reliable and adequate water supply for Hong Kong, it is essential for the Department to prepare for any unforeseen problems in the water supply system. For this reason, we have a crisis management plan, drought contingency plan and several other contingency plans in place to maintain a state of readiness for the rapid mobilisation of resources and coordination of emergency actions.

In addition, we nurture close contacts with other government departments through various communication channels in order to coordinate emergency responses for maintaining continuous water supplies in the event of crises.

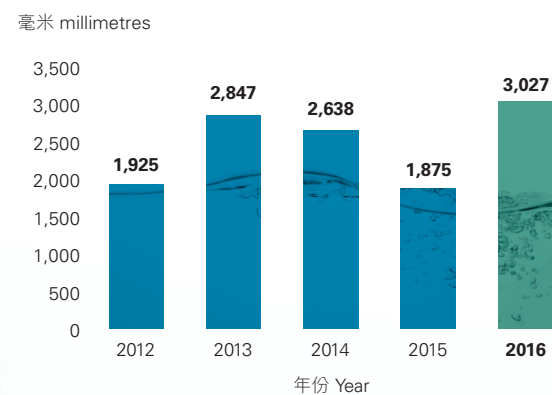
二零一二年至二零一六年全年供水量 Annual Quantity of Raw Water Supply 2012-2016



二零一二年至二零一六年總平均日耗水量(食水及海水) Total Average Daily Consumption (Fresh Water and Salt Water) 2012-2016

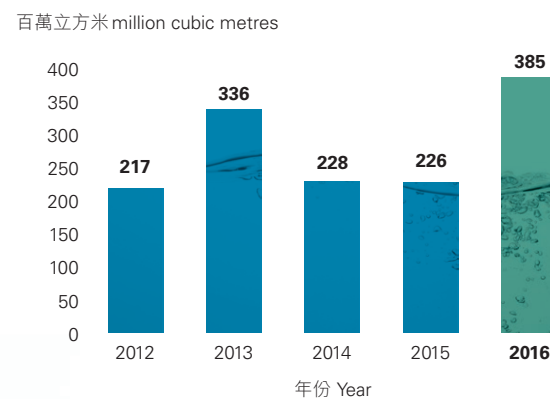


二零一二年至二零一六年全年降雨量 Annual Rainfall 2012-2016



註：長期平均降雨量為2,399毫米
Note : Long Term Mean Rainfall is 2,399 millimetres

二零一二年至二零一六年全年集水量 Annual Yield 2012-2016



註：長期平均集水量為295百萬立方米
Note : Long Term Mean Yield is 295 million cubic metres

二零一二年至二零一六年按用水類別劃分的食水用量(百萬立方米)佔總量百分比

Annual Fresh Water Consumption (by Sector) 2012–2016 in Million Cubic Metres (MCM) and Percentage of Total

用水類別 Sector	年份 Year				
	2012	2013	2014	2015	2016
住宅用水 Domestic	505 (54.1%)	504 (54.1%)	516 (53.8%)	526 (54.1%)	537 (54.4%)
工業用水 Industrial	59 (6.3%)	58 (6.2%)	60 (6.3%)	60 (6.2%)	60 (6.1%)
服務業及商業用水 Service Trades	236 (25.3%)	234 (25.1%)	240 (25.0%)	243 (25.0%)	246 (24.9%)
政府用水 Government Establishments	41 (4.4%)	41 (4.4%)	44 (4.6%)	43 (4.4%)	43 (4.4%)
建築及船舶用水 Construction & Shipping	18 (1.9%)	20 (2.0%)	23 (2.4%)	24 (2.4%)	23 (2.3%)
臨時淡水沖廁 Flushing	76 (8.0%)	76 (8.2%)	76 (7.9%)	77 (7.9%)	78 (7.9%)
食水總用量 Total Fresh Water Consumption	935 (100.0%)	933 (100.0%)	959 (100.0%)	973 (100.0%)	987 (100.0%)





培養節約用水文化
Fostering a Water
Conservation Culture

培養節約用水文化 Fostering a Water Conservation Culture



提倡節約用水

Making Water Conservation Count

用水效益標籤計劃

Water Efficiency Labelling Scheme (WELS)

本署於二零零九年開始實施自願參與的「用水效益標籤計劃」，鼓勵用戶使用節水裝置和器具。計劃現在涵蓋沐浴花灑、水龍頭、洗衣機、小便器具和節流器。

In 2009, WSD began implementing the voluntary “Water Efficiency Labelling Scheme” (WELS) to encourage consumers to use plumbing fixtures and appliances that conserve water. The scheme now covers showers for bathing, water taps, washing machines, urinal equipment and flow controllers.

本署亦正制訂策略，分階段強制用水效益標籤計劃（標籤計劃）。本署自二零一七年二月起推出首階段，強制住宅處所的廚房，以及所有處所的浴室及洗手間的擬建水管工程，均須採用已註冊標籤計劃的指定節水裝置。我們相信以上的強制措施，

WSD is also formulating strategies to mandate WELS in stages. In the first stage, we have already mandated the use of designated water-efficient devices registered under WELS in the proposed plumbing works for kitchens of domestic premises as well as for bathrooms and toilets of all premises since February 2017. We believe that the above mandatory

將有助已註冊標籤計劃的產品在指定處所的水管更換工程中得到更廣泛的使用，以進一步節約用水。

在政府大樓、學校及公共屋邨加裝節水裝置

由於節流器已證明能有效幫助用戶節約用水以減少耗水量，水務署繼續為公共屋邨租戶、政府大樓和學校安裝節流器。截至二零一七年三月底，本署已為58個公共屋邨約93,000名租戶安裝花灑和水龍頭節流器。此外，在政府大樓和學校加裝節水設備的第一及第二階段工程完成後，本署已於二零一七年三月繼續展開第三階段工程，為約2,930幢政府大樓和學校安裝48,700個節流器。

measures will promote more extensive use of WELS products in designated premises, which will help achieve greater water conservation.

Retro-fitting Government Buildings, Schools and Public Housing Estates with Water-saving Devices

With the proven effectiveness of flow controllers in helping users conserve water and thereby reducing water consumption, WSD has been continuing with flow controller installation works in public rental housing estates, government buildings and schools. By the end of March 2017, nearly 93,000 households at 58 public rental housing estates had flow controllers installed onto their taps and showers. Moreover, following completion of the first and second phases of retrofitting plumbing fixtures with water-saving devices in government buildings and schools, the third phase is now well underway with 48,700 flow controllers installed in nearly 2,930 government buildings and schools as of March 2017.



「齊來慳水十公升」運動

響應該運動，水務署鼓勵市民透過承諾宣言，與水務署一同加入節約用水的行列。截至二零一七年三月，已有約240個來自各行業和界別的機構參與，以支持及推廣運動。約14萬個參與的住宅用戶獲贈節流器。

"Let's Save 10 Litres Water" Campaign

Under the Campaign, participants were encouraged to join forces with WSD to save water through declarations. By the end of March 2017, about 240 organisations from various trades and sectors had participated in the Campaign to show support and to help publicise the Campaign, while about 140,000 households participating in the Campaign had been provided with complimentary flow controllers.

提高公眾節水意識

節水教育與宣傳

從二零零九年一月起，水務署已為小學舉辦一系列節水教育活動，當中包括「保護水資源大使選拔賽」、「巡迴講座」及「校園用水考察」，培養學童養成良好的節水習慣，並鼓勵他們向朋友和家庭成員推廣節約用水。

於二零一五／一六學年，水務署繼而加強及整合校園活動，向小學推出「惜水學堂」節約用水教育計劃。「惜水學堂」理論與實踐相結合，旨在拓寬學生的水資源知識，並提高他們對節約用水及水資源可持續性的認識，以應對氣候變化的影響。截至二零一七年三月底，超過220間學校參與「惜水學堂」節約用水教育計劃。在這個成功的基礎上，我們將在二零一七／一八學年在幼稚園推行先導教育計劃。

Raising Public Awareness

Education and Promotion

Since January 2009, WSD has run a series of educational programmes for primary schools, including the “Water Conservation Ambassador Selection Scheme”, “School Roadshow” and “School Water Audit” to cultivate good water-saving habits amongst school children and encourage them to promote water conservation to their peers and family members.

Subsequently, in the 2015/16 school year, WSD enhanced and combined these school programmes by launching the “Cherish Water Campus” integrated education programme for primary schools. Integrating theory with practice, the programme aims to broaden students’ knowledge about water resources and raise their awareness of water conservation as well as water sustainability in order to address the effects of climate change. As at the end of March 2017, over 220 schools had joined the programme. Riding on this success, we will be launching a pilot education programme for kindergartens in the 2017/18 school year.



校園用水考察
School Water Audit



「惜水學堂」頒獎典禮（二零一五／一六學年）
“Cherish Water Campus” Award Ceremony (School Year 2015/16)

二零一二年，水務署在旺角辦事處設立臨時水資源教育中心，旨在提高年輕一代對水資源和節約用水的認識。截至二零一七年三月，臨時水資源教育中心已接待約五萬名主要來自小學及非牟利機構的訪客。由於旺角辦事處計劃於二零一八年搬遷至天水圍，水務署已著手策劃在水天圍新辦事處設立永久水資源教育中心。永久水資源教育中心預計將於二零一八／一九年啟用，屆時將會增加展覽面積，以便向學生及不同年齡的社會各階層人士介紹更多關於節水及水資源的新措施及深入資訊。



節約用水週2016

匯聚各種向市民推廣節約用水活動的「節約用水週2016」於二零一六年十一月十七日至二十一日假香港理工大學圓滿舉行。在「節約用水 你我都得」的活動主題下，水務署借助貫穿五天的大型展覽—「點滴香港•探古惜今創未來」和一系列豐富活動，向社會各個界別推廣全民節約用水，讓市民認識氣候變化為水資源帶來的重重危機，在社會構建惜水文化。

在主題為「全城啟動 同惜點滴」的「節約用水週2016」開幕典禮上，一眾來自學術界、教育界、商界、環保界的嘉賓和政府代表以匯聚「小水點」方式進行亮燈儀式，寓意眾志成城，將社會各界的努力集腋成裘，與大會主題「節約用水 你我都得」互相呼應，共創節水都市。

In 2012, WSD set up a temporary Water Resources Education Centre (WREC) at our Mong Kok Office with the aim of enhancing knowledge about water resources and water conservation among the younger generation. As at March 2017, the temporary WREC had received some 50,000 visitors since its opening, mainly from primary schools and non-profit organisations. With the Mong Kok Office scheduled to be relocated to Tin Shui Wai in 2018, WSD has embarked on a project to establish a permanent WREC in the new Tin Shui Wai office. The permanent WREC, expected to be commissioned in 2018/19, will have an expanded exhibition area to introduce more new initiatives and display in-depth materials covering various aspects of water conservation and water resources to cater for a wider spectrum of visitors of all ages from students to the general public.



Water Conservation Week 2016

Publicity and outreach activities on water conservation culminated in “Water Conservation Week 2016” (WCW), which was successfully held at The Hong Kong Polytechnic University from 17th to 21st November 2016. Under the event theme “Save Water We Can”, a large-scale “Water Conservation – Past • Present • Future” Exhibition took place throughout the five days of WCW and was complemented by a series of activities to promote water conservation to every community sector and also to enhance public understanding of the challenges brought by climate change on water resources, thereby helping to build a water-saving culture within the community.

At the “Let’s Get Started! Make Every Drop Count” WCW Opening Ceremony, guests from the academic, education, business, and environmental sectors, along with Government representatives, performed a “droplet accumulation” lighting ceremony to signify the build-up of concerted efforts from across every sector in the community to echo “Save Water We Can” and pledge to build a water-saving city together.

第二天的主題是「惜水學堂 由你做起」，為表揚一眾積極參與及支持「惜水學堂」節約用水教育計劃的學校及辦學團體於二零一五／一六學年的傑出表現，我們舉行了「惜水學堂」頒獎典禮。當天，合共56間學校及27間辦學團體獲頒發獎項。在典禮上，「滴惜仔」與「大咗鬼」聯同水務署同事，透過生動有趣的「惜水學堂」話劇表演與台下觀眾互動，強調在日常生活中節約用水的重要性。話劇以節約用水為主題，並分段穿插於頒獎典禮當中，使整個頒獎典禮兼具教育意義和趣味。

Under the theme “Put Cherish Water Campus into Action”, the “Cherish Water Campus” Award Ceremony was held on the second day of WCW to commend schools and sponsoring bodies for their outstanding participation in the integrated education programme during the 2015/16 school year. Awards were presented to 56 schools and 27 sponsoring bodies. A lively “Cherish Water Campus” Drama was also staged with a cast including Water Save Dave, Big Waster and several WSD colleagues conveying water conservation messages and highlighting the importance of water-saving practices in everyday life. The drama was divided into several acts which mingled with sessions for award presentations, to make the whole award ceremony educationally significant and interesting.

第三及第四天的主題分別是「小點滴 大意義」和「環保聯盟 共創節水香港」。市民可以參加探索米埔和大潭的生態導賞團，加深市民對香港的水資源和水務歷史的認識。節約用水Go Go Run、週日嘉年華和「滴惜•DIY」工作坊等活動可以讓孩子明白水資源稀少，從而了解節約用水的重要性。在「點滴傳承—邁步向前」水資源研討會上，多位環保團體的專業人士分享了氣候變化對水資源的保育、可持續性及其管理帶來的挑戰。

On the third and fourth days respectively “A Small Drop for a Big Difference” and “Green Alliance for a Water-wise Hong Kong”, there were specially arranged eco-tours to Mai Po and Tai Tam Reservoir to strengthen public understanding of Hong Kong’s wetland resources and waterworks history. There were also “Save Water Go Go Run”, Sunday Carnival and “Water Save • DIY” Workshops for children to learn about water as a scarce resource and hence the importance of water conservation. In the “Water Resources Sustainability – Marching On” Seminar, distinguished environmentalists talked about the challenges brought by climate change on water conservation, water sustainability and water resources management.



「節約用水週2016」開幕典禮亮燈儀式
Lighting ceremony in WCW Opening Ceremony



最後，在第五天的主題「商界齊協力 節水零浪費」下，我們舉辦了「商界節水零浪費」論壇暨「用水效益最佳實務指引」啟動禮。在論壇上，飲食業和酒店業的專業人士分享了他們的節水之道，商會的代表亦攜手在啟動禮上承諾實施「用水效益最佳實務指引」。此活動亦為「節約用水週」劃上句號。為期五天的「節約用水週」活動共吸引了超過二萬人參加。

公開講座和展覽

聯合國把每年的三月二十二日定為「世界善用食水日」。為響應這個極具意義的日子，香港地球之友再次聯同水務署合辦「水論壇2017」，並以「氣候變化衝擊與應變—海綿城市」為題。是次論壇邀請了多位水務和環境保育的專家就本港是否已準備好應對氣候變化帶來的潛在危機發表演講，以及就有關本港全面水資源管理策略的議題進行討論。論壇更設有圓桌討論及答問環節，以促進講者與聽眾交流觀點和分享經驗。

Finally, on the fifth day under the banner of “Join Hands for Water-efficient Business”, we organised the “Zero Waste in Trades” Forum cum Launching Ceremony on “Best Practice Guidelines (BPG) for Water Usage”. Experts from the catering and hotel service trades shared their water-saving experiences at the forum and representatives from trade associations joined hands to pledge to implement the BPG at the launching ceremony. That activity concluded the five-day WCW, which attracted more than 20,000 visitors.

Public Lectures and Exhibitions

The United Nations has designated the 22nd of March each year as “World Water Day”. To mark the significance of this day, Friends of the Earth (Hong Kong) collaborated with WSD again to organise the Water Forum 2017 under the key theme “Climate Change Resilience – Sponge City” as part of the day’s activities. Experts in the fields of water supply and environmental protection were invited to give talks on Hong Kong’s readiness to cope with the potential threats against climate change as well as discuss topics related to the total water management strategy in Hong Kong. Panel discussions as well as question and answer sessions were held to exchange views and encourage experience-sharing between the speakers and the audience.



用水效益檢討

在完成對泳池、公園、街市、廁所、垃圾收集站和懲教所等政府管理設施的用水效益檢討，並隨之發佈相關的用水效益最佳實務指引後，本署一直與設施管理者合作，根據用水效益最佳實務指引落實各種措施，以提升有關設施的用水效益。有關酒店及餐飲業的商界最佳實務指引已於二零一六年十一月在「節約用水週」期間頒布。推行用水效益檢討的主要目標是讓我們的用戶出一分力，降低整體耗水量。檢討程序讓我們掌握以事實為基礎的工具，在制訂和實行日常節約用水措施時，能平衡得失，無損整體的服務水平。

防止非法取水

本署負責執行《水務設施條例》及《水務設施規例》，並對違法人士採取法律行動。根據《水務設施條例》，除非水務監督批准，否則未經水錶量度取水即屬違法行為。在二零一六年，本署檢控組平均每月處理的非法取水個案數目為105宗。宣傳方面，我們推出多個關於防止非法取水的教育和宣傳計劃，服務對象除本署內外的政府職員之外，亦包括市民大眾。有關教育和宣傳活動包括濾水廠開放日、研討會及學校巡迴探訪、港鐵車站廣告、水費單上的告示，以及政府及私人物業、客戶諮詢中心及水資源教育中心張貼的海報及宣傳牌。

Water Efficiency Review

Following the completion of the water efficiency reviews and subsequent issuing of Best Practice Guidelines (BPGs) for government-managed swimming pools, parks, markets, toilets, refuse collection points and correctional institutions, we have been working with facility operators on implementing measures according to the BPGs to enhance water use efficiency at their facilities. The BPGs for hotel and catering industries were promulgated in November 2016 during WCW. Our primary objective is for our customers to play its part in contributing to water conservation. The review process involves a fact-based method to formulate balanced water-saving measures for implementation in day-to-day operations without compromising the overall level of services.

Preventing Illegal Water Use

The Department is responsible for administering the Waterworks Ordinance (WWO) and Waterworks Regulation as well as taking legal action against offenders. It is an offence under the WWO to draw water without a meter except with the permission of the Water Authority. The average number of cases of illegal use of water handled by the Department's Prosecution Unit per month in 2016 was 105. In terms of publicity, we conducted a number of education and information programmes on preventing the illegal use of water not only to government officers within and outside the Department, but also to the public during events such as Treatment Works Open Day, seminars and school tours, and through advertisements in MTR stations, notices on water bills as well as posters and promotion boards displayed at government and private properties, customer enquiry centres and at the WREC.

改善供水網絡

在過去十六年間，本署在減少水管爆裂方面取得明顯進步。水管爆裂宗數由二零零零至零一年度的2,500宗下降至二零一六至一七年度的僅96宗。這主要歸功於本署為期15年的更換及修復水管計劃。該計劃更換及修復了接近3,000公里的老化水管(全港水管總長度約為8,000公里)，因而大幅提高了供水的可靠程度。

在進行這項工程時，我們採用了全球最先進的建造方法和技術。在合適的情況下，我們採用無坑建造法，包括內喉緊貼法(用於原有水管)、原位內搪喉管法、水管推頂法和橫定向鑽挖法，以減少路面施工和對公眾和交通造成干擾。

在鄉郊地區，水務署亦已於二零一三年十月開始更換海底水管，包括大嶼山至長洲、坪洲至周公島，以及周公島至喜靈洲的海底水管。為此，我們採用橫定向鑽挖法在海床下的岩石層鋪設管道，盡量減少對環境的整體影響，同時避免干擾海陸考古地點和海上交通。定向鑽挖工程已於二零一六年年中大致竣工。

Improving the Supply Network

Over the past 16 years, the Department has made dramatic improvements in reducing water main bursts from 2,500 in 2000/01 to just 96 in 2016/17. This has been accomplished in large part through the success of our 15-year programme of replacement and rehabilitation of about 3,000 km of aged water mains out of a total of around 8,000 km of pipelines all across Hong Kong, resulting in significantly higher water supply reliability.

In carrying out this work, we apply the world's most advanced construction methods and technologies. Where applicable, we use trenchless construction, including close-fit lining of existing mains, cure in-place pipes, pipe jacking and horizontal directional drilling (HDD) to help reduce above ground construction and limit disturbances to the public and traffic.

Outside of the urban areas, starting from October 2013, WSD also began replacing submarine pipelines, including the sections from Lantau to Cheung Chau, Peng Chau to Sunshine Island, and Sunshine Island to Hei Ling Chau. To do this, we employed HDD to lay the pipelines through the rock layer below the seabed to minimise the overall environmental impact as well as to avoid disrupting marine and terrestrial archaeological sites and marine traffic. The HDD works were substantially completed by mid-2016.

工程人員正在進行鑽挖工作。
Engineering staff are carrying out drilling works.



用水流失管理措施

本署定期進行音聽視察、噪聲測井、最低晚間流量測試和分段流量測漏，以探測漏水情況，並應用最新的區域持續監測及水壓管理技術，加強控制用水流失。我們致力盡早發現可疑漏水情況，以便即時採取措施避免進一步流失，並防止情況惡化至水管爆裂。

本署已將部分測漏工作外判予專門承辦商，以定期對全港的水務署水管進行有效檢測。同時，我們亦以評估表現的方式鼓勵承辦商進行更多檢測。迄今為止，港島、九龍和新界的多條水管均成功採用評估表現的方式由專門承造商進行檢測。

Water Loss Management Initiatives

The Department conducts regular leak detection through sounding and visual inspections, noise logging, minimum night flow tests and step tests. The control of water loss has also been strengthened through the application of the latest district continuous monitoring and pressure management technologies. We are also doing our best to detect suspected leaks as early as possible so that we can take immediate action to cut further losses and stop the deterioration that could lead to water main bursts.

Some leak detection work has been outsourced to specialist contractors to maintain effective regular leak detection of all WSD water mains in Hong Kong. We have also adopted a performance-based approach to motivate contractors to detect more leaks. To date, leak detection of a number of the water mains in Hong Kong Island, Kowloon and New Territories has been successfully conducted by the specialist contractors using this performance-based approach.

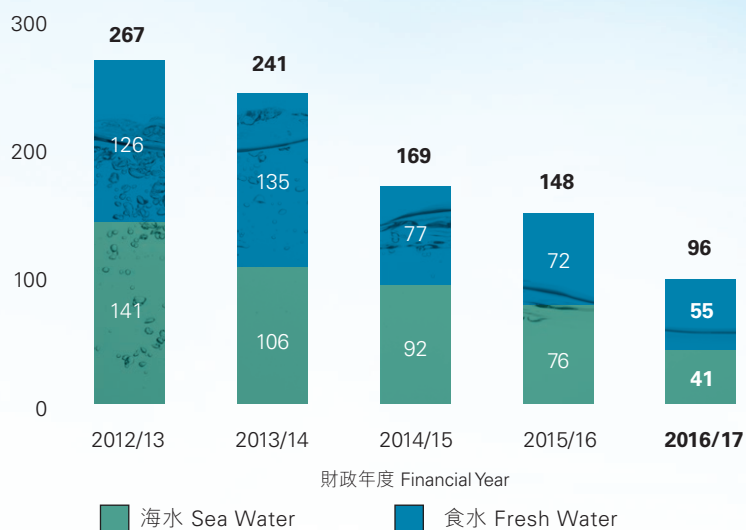


水務署致力盡早發現可疑漏水情況，以便即時採取措施避免進一步流失。

WSD is striving to detect suspected leaks as early as possible in order to allow immediate action to cut further losses.



水管爆裂修理個案統計數字 Statistics on Mains Bursts



測漏統計數字 Statistics on Leak Detection

食水 Fresh Water

測漏工作 Leak Detection	財政年度 Financial Year				
	2012/13	2013/14	2014/15	2015/16	2016/17
最低晚間流量測試次數 No. of Minimum Night Flow Tests	139	92	63	39	31
分段流量測漏次數(或滲漏測試) No. of Step Tests (or Leakage Tests)	13	15	7	19	31
音聽視察次數 No. of Sounding & Visual Inspections	3,282	2,918	4,121	3,271	3,679
經發現的滲漏個案數目 No. of Leaks Detected	1,432	1,237	1,448	1,143	1,761
估計每日可節省的水量(立方米/日) Estimated Quantity of Fresh Water Saved (cubic metres/day)	57,128	47,872	42,125	50,847	77,357

海水 Sea Water

測漏工作 Leak Detection	財政年度 Financial Year				
	2012/13	2013/14	2014/15	2015/16	2016/17
音聽視察次數 No. of Sounding & Visual Inspections	516	488	1,212	1,688	1,837
經發現的滲漏個案數目 No. of Leaks Detected	127	116	197	164	247
估計每日可節省的海水量(立方米/日) Estimated Quantity of Sea Water Saved (cubic metres/day)	35,040	19,881	30,561	21,447	35,390





水質

Water Quality



水質 Water Quality

水質標準

廣東當局已採取有效措施，確保輸港的東江水水質符合國家《地表水環境質量標準 GB3838-2002》第II類（適用於集中式生活飲用水地表水源地一級保護區）的標準，有關標準是適用於集中式生活飲用水地表水源地的最高標準。有關措施和項目包括興建新污水處理廠、遷走具污染性的工廠和農場、鋪設專用輸水管道、建立東江流域水量水質監控系統，以及在深圳水庫設立生物硝化站等。此外，廣東當局已推展沙灣河流域水環境綜合整治工程，以解決在暴雨期間沙灣河洪水流入深圳水庫的問題。我們亦在接收東江水的木湖抽水站設有在線水質監察系統，該系統透過先進的監控及資料收集系統運作，全天二十四小時密切監測輸港東江水的水質。此外，我們正發展一套包含現有水安全計劃的水質管理系統，以提供一個更全面的框架，保障香港的食水水質和公眾健康。我們也在二零一六年十月二十六日成立隸屬水務諮詢委員會的建築物食水安全專責小組，就建築物的水質安全問題提供意見，包括發展香港的建築物水安全計劃。我們將繼續運用創新的生物感應預警系統密切監察斑馬魚的行為，結合利用生物發光技術為基礎進行快速毒性檢測，以盡早發現輸港的東江原水的異常情況。為進一步加強水質監察，我們內部亦研發了一款嗅覺儀，並配合簡易氣味嗅味層次分析法，在馬鞍山濾水廠和小蠔灣濾水廠從味道及氣味方面監察水質。定期的食水味道及氣味監察令濾水廠操作員可及時調整濾水過程，從而確保食水水質在味道及氣味方面獲用戶接受。目前，我們正按照世界衛生組織在二

Water Quality Standards

The Guangdong Authorities have taken effective steps to ensure that the quality of Dongjiang water that reaches Hong Kong meets the national standard set out for Type II waters (applicable for the abstraction for human consumption in a first class protection area) in the “Environmental Quality Standards for Surface Water GB3838-2002”, which is the highest standard applicable for the abstraction for human consumption. This has been achieved through a combination of measures and projects, including the construction of new sewage treatment plants, removal of polluting factories and farms, commissioning of dedicated aqueducts, implementing the Dongjiang River Basin Water Quantity and Quality Monitoring and Control System, and the on-going operations of the bio-nitrification plant at the Shenzhen Reservoir. Moreover, the Guangdong Authorities have begun the Comprehensive Remediation Project for the Water Environment of Shawan River Basin in order to address the problem of flood water from Shawan River flowing into the Shenzhen Reservoir during heavy rainfalls. As regards the water quality monitoring to closely gauge the quality of imported Dongjiang water around the clock, we maintain an on-line Water Quality Monitoring System that runs via an advanced SCADA system at the Muk Wu Pumping Station, where we receive Dongjiang Water. Furthermore, we are developing an enhanced water quality management system which incorporates our existing Water Safety Plan (WSP) and provides a more comprehensive framework to safeguard the quality of the drinking water supply in Hong Kong to protect public health. We have also established a Task Group on Water Safety in Buildings under the Advisory Committee on Water Supplies on 26th October 2016, to advise on issues related to water safety in buildings including the development of the WSP for buildings in Hong Kong. We will continue to use the innovative Biosensing Alert System by closely monitoring the behaviour of zebrafish and coupled with rapid toxicity testing

零一一年制訂的第四版《飲用水水質準則》(世衛準則)來監測食水水質。世衛準則第四版(世衛2017)的首個增編最近於二零一七年二月發布。主要更新的內容包括修訂鉍的準則值(GV)、刪去4-(2-甲基-4-氯苯氧基)乙酸(MCPA)的準則值,以及加入高氯酸鹽的準則值。為了緊貼世衛準則的最新修訂,我們正就世衛準則相關修訂進行檢討及研發新的測試方法以應對世衛2017的新要求。



我們分別從集水區、進水口、木湖抽水站的東江水接收點、水塘、濾水廠、配水庫、食水分配系統以至用戶的水龍頭處抽取水樣本進行物理、化學、細菌學、生物學和輻射學方面的化驗,從而有系統地監測整個食水處理過程、供水及分配系統的水質。每年我們抽取及檢測超過16萬個樣本。

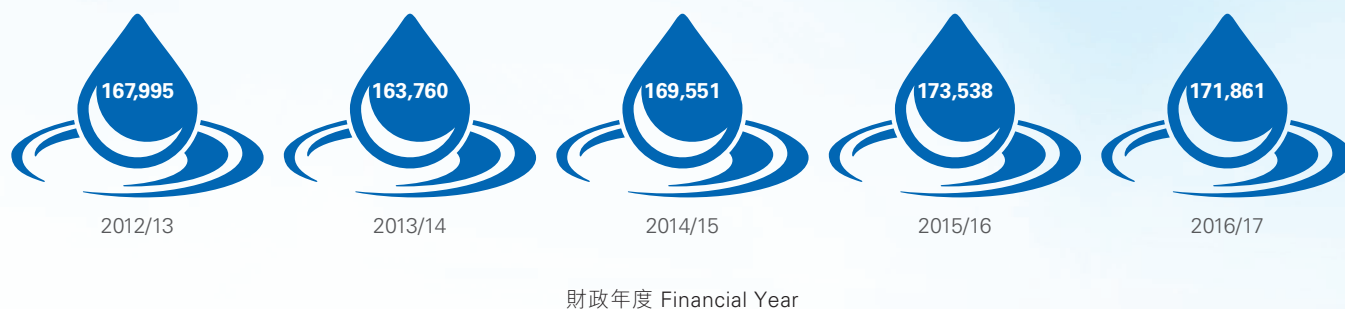
based on bio-luminescent technology, to detect abnormalities in the Dongjiang water supplied to Hong Kong. To further enhance water quality monitoring, we have also developed an in-house olfactometer and the simplified Flavour Profile Analysis at both Ma On Shan and Siu Ho Wan Water Treatment Works for use in water quality monitoring in respect of taste and odour. Regular taste and odour surveillance of the drinking water supply enables operators to make timely adjustments of water treatment processes to ensure that the drinking water quality in terms of taste and odour is acceptable to consumers. Currently, we are monitoring the drinking water quality in accordance with the fourth edition of the Guidelines for Drinking-water Quality published by the World Health Organization (WHO) in 2011. The first addendum to the fourth edition of the WHO's Guidelines (WHO 2017) was recently released in February 2017. The key updates include the revision of Guideline Value (GV) for barium, the withdrawal of GV for 4-(2-methyl-4-chlorophenoxy) acetic acid (MCPA) and the introduction of GV for perchlorate. In order to stay up to date with the latest revisions to the WHO's Guidelines, we are conducting a review on the latest update of WHO 2017 and developing testing method to cope with the new requirements in the WHO 2017.

Water quality throughout the entire treatment, supply and distribution system is systematically monitored by means of physical, chemical, bacteriological, biological and radiological examinations of water samples taken at catchment, intakes, the receiving point of Dongjiang water at Muk Wu Pumping Station, impounding reservoirs, water treatment works, service reservoirs, distribution systems and publicly accessible taps. More than 160,000 samples are taken and tested each year.

二零一五年發生食水中發現鉛含量超標事件後，公眾增加了對水龍頭食水安全的關注。就此，水務署不遺餘力地採取必要的跟進整治措施。發展局於二零一六年六月成立了食水安全國際專家小組（專家小組），就食水安全事宜提供意見。就制定香港食水標準方面，水務署已委聘英國專家顧問進行全面的檢討和研究，就訂立香港食水的標準提出建議，並就此諮詢專家小組。鑑於公眾關注食水可能受金屬污染，顧問專家在第一階段研究中檢視了世衛準則所列的十二項金屬參數。此外，在研究其他國家食水安全的經驗和做法，並考慮專家小組的建議後，發展局和水務署已全面檢討現行的食水安全制度，並正在制訂行動計劃，進一步保障本港的食水水質，包括加強水務署現行的水質監測計劃，以隨機方式從用戶水龍頭收集食水樣本，測試可能在內部供水系統出現的六種金屬（即鉛、鎳、鉻、鎘、銅和銻），以監察用戶水龍頭的食水水質。

In the wake of the incident in 2015 in which excess lead was discovered in drinking water, the public have raised concerns over the drinking water quality at consumers' taps. In response to this, WSD has spared no effort in taking the necessary follow-up remedial actions. The IEP established by the DEVB in June 2016 has been providing advice on issues regarding drinking water safety. With respect to formulating drinking water standards for Hong Kong, WSD has engaged an expert consultant from the United Kingdom to conduct a holistic review and study in view of recommending the Hong Kong Drinking Water Standards, and has consulted the IEP in this regard in view of recommending the Hong Kong Drinking Water Standards. In view of the public concern over possible metal contamination in drinking water, the expert consultant has focused on the 12 metal parameters in the WHO Guidelines in the first stage of the review study. In addition, after studying on the experience and practices of drinking water safety in other countries and taking into account the advice of the IEP, DEVB and WSD have holistically reviewed the existing drinking water safety regime in Hong Kong and are developing an action plan to further safeguard the drinking water quality in Hong Kong, including the enhancement on WSD's current water quality monitoring programme to collect random water samples from consumers' taps for testing six metals (viz. lead, nickel, chromium, cadmium, copper and antimony) which could be present in the internal plumbing system.

化驗樣本總數
No. of Water Samples Taken



東江原水內平均氨氮及錳水平
Average Ammoniacal Nitrogen and Manganese Levels in Dongjiang Water

財政年度 Financial Year	2014/15	2015/16	2016/17
錳(毫克／公升) Manganese (mg/L)	0.03	0.03	0.03
氨氮(毫克／公升) Ammoniacal Nitrogen (mg/L)	0.05	0.04	0.03

水務基建設施

Waterworks Infrastructure

改善水務基建設施及提升運作效率，讓香港享有更可靠的供水系統。

Hong Kong enjoys the benefits of a water supply that boasts greater reliability as a result of improved waterworks infrastructure and increased operational efficiencies

智管網

本署正沿整個供水網絡安裝感應器，設立監測區域和相關水壓管理區，逐步建立智管網系統。全港智管網將設有約2,000個監測區域/水壓管理區，同時亦將安裝智能網絡管理電腦系統，以便對感應器收集的數據進行持續的（及在必要時進行實時的）網絡表現分析，以監測供水網絡的狀況。

截至二零一七年三月，我們成功設立1,000多個監測區域，其中約300個同時兼為水壓管理區。此外，我們將建立上述智能網絡管理電腦系統，並將其與所有監測區域／水壓管理區連接。有賴智管網，我們

Water Intelligent Network (WIN)

The Department is progressively building up the Water Intelligent Network (WIN) system by installing sensors in the fresh water supply networks to create District Metering Areas (DMAs) and associated Pressure Management Areas (PMAs). There will be about 2,000 DMAs/PMAs throughout the entire Territory under WIN. An intelligent network management computer system will also be put in place to enable continuous (and where necessary real-time) network performance analysis of the data collected from the sensors in the DMAs/PMAs to monitor conditions of the water supply networks.

As of March 2017, we have successfully installed some 1,000 DMAs with about 300 of them serving as PMAs as well. Moreover, we will establish the above mentioned intelligent network management computer system and will link up all the DMAs/PMAs to it. With WIN, we will be able to continuously

得以持續監測及分析供水網絡狀況，並採用最符合經濟效益的方式，以維持供水網絡的健康狀況。

提升供水能力

供水是基建設施的基石，對支援香港未來發展極其重要。為此，目前東涌正在設建一座新的食水配水庫，以應對因北大嶼山在建的主要項目（包括餘下的東涌擬定發展項目和日後的第三條機場跑道項目）而增加的用水需求。

為應對新界上水、粉嶺和大埔不斷增加的住宅發展項目，本署將興建新配水庫，同時搭建配套的幹管配水系統，以滿足與日俱增的用水需求。桌山配水庫新建工程及配套水管敷設工程已於二零一七年四月動工。新配水庫及配套水管系統採用靈活設計，以便日後在需要時最終更改成再造水系統的組成部分，以提供水源作沖廁用途。

monitor and analyse the condition of the water supply networks and determine the most cost-effective means to maintain the healthiness of the networks.

Expanding Water Supply Capacity

As a major infrastructural cornerstone, our water supply is critical to support Hong Kong's future development. For this reason, a new fresh water service reservoir in Tung Chung is now being designed to cope with increased water demand resulting from major developments now underway in North Lantau, including the proposed remaining development projects in Tung Chung and the future third airport runway project.

To deal with expanding housing developments in Sheung Shui, Fanling and Tai Po in the New Territories, new service reservoirs with associated trunk and distribution water mains systems will be constructed to meet increasing water demands. The construction of a new service reservoir at Table Hill and laying of associated water mains began in April 2017. The new service reservoir and associated water mains system were flexibly designed to accommodate their eventual conversion to become part of the future reclaimed water supply system for flushing, when needed.



桌山配水庫新建工程正在進行中。
The construction of a new service reservoir at Table Hill is in progress



濾水廠設施升級

Upgrading Water Treatment Facilities

沙田濾水廠南廠原址重置工程的前期工程及大埔濾水廠的擴建工程現時均處於施工階段。工程竣工後將提升濾水廠運作的可靠性，並大幅增加濾水量，確保我們有足夠能力為公眾供應最優質的飲用水。這兩所濾水廠是重要的處理原水設施，原水經處理後會分配至全港各地。這些項目正在分階段推進，以配合全港與日俱增的食水需求。

The advance works of the re-provisioning of Sha Tin Water Treatment Works (South Works) and the expansion of Tai Po Water Treatment Works are all currently at the construction stage to enhance the operational reliability and to allow substantial treatment capacity increases, which will ensure adequate capacity to produce the highest quality of potable water for the public. They are important facilities for the treatment of raw water prior to its distribution across Hong Kong. These projects are being delivered in phases to meet the ever growing demand for potable water throughout the Territory.

大埔濾水廠的擴建工程正進行得如火如荼，及至二零一八年年中，其濾水量將由每日40萬立方米增加至80萬立方米。沙田濾水廠南廠已於二零一五年年底啟動原地重置工程的準備工作，並計劃於二零二三年年底全面投入服務。

Construction for the expansion of Tai Po Water Treatment Works is now in full swing to increase its treatment capacity from 400,000 cubic metres per day to 800,000 cubic metres per day by mid-2018. The advance works for the on-site re-provisioning of Sha Tin Water Treatment Works (South Works) began in late 2015 with the facility slated for full commissioning by the end of 2023.

為消除用於濾水廠作食水消毒之用的液態氯在運輸和儲存過程中洩漏氯氣的風險，我們計劃在大型濾水廠內安裝氯氣生產設施，以改善食水消毒設施。濾水廠食水消毒設施的改善工程將於二零一八年第一季度展開，預計於二零二一年第二季完成。

To eliminate the risk of chlorine gas leakage associated with the transportation and storage of liquid chlorine which is used for disinfection of drinking water, we plan to upgrade the disinfection facilities by installing on-site chlorine generation facilities in major water treatment works. Construction works for upgrading the disinfection facilities in water treatment works will commence in the first quarter of 2018 with completion slated for the second quarter of 2021.

為提高所有濾水廠食水消毒設施的可靠性，我們已開始在每所濾水廠安裝次氯酸鈉投配系統以支援現有的設施。投配系統的工程預計於二零一八年第一季完成。

提升水務運作效率

我們已開始更換各食水及原水抽水站的老化水管，並以此為恆常工程項目，以大幅提升抽水站的可靠程度及運作效率。

此外，六個主要濾水廠的現有手動控制設備將由遙距控制設備操作，以提高整體運作效率。手動操作閥驅動器將於二零一八年年底前分階段逐步由遙距控制電動驅動器取代。

六個主要濾水廠的分佈式控制系統的現代化改造工程正迅速推進。其中四個系統裝置已於過去數年成功投入運作，而牛潭尾濾水廠的現代化改造工程亦將於二零一七年五月完成。至於餘下的凹頭濾水廠，我們已為更新現有分佈式控制系統的工程進行招標，所有工程將分兩階段預計分別於二零一九年及二零二一年完成。

用以遙距監測相關供水地區內抽水站和配水庫等供水網絡設施的現有四個區域監控及資料收集系統正在分階段進行升級。香港及離島、九龍及新界西的系統已如期完

To enhance reliability of the drinking water disinfection facilities at all our water treatment works, we have begun to install a sodium hypochlorite dosing system at each treatment works to back up the existing facilities. Construction works for the dosing systems are scheduled for completion by the first quarter of 2018.

Improving Waterworks Operational Efficiencies

We have begun the replacement of aged water pipework at various fresh water and raw water pumping stations as an on-going programme to significantly enhance the reliability and operational efficiency of the pumping stations.

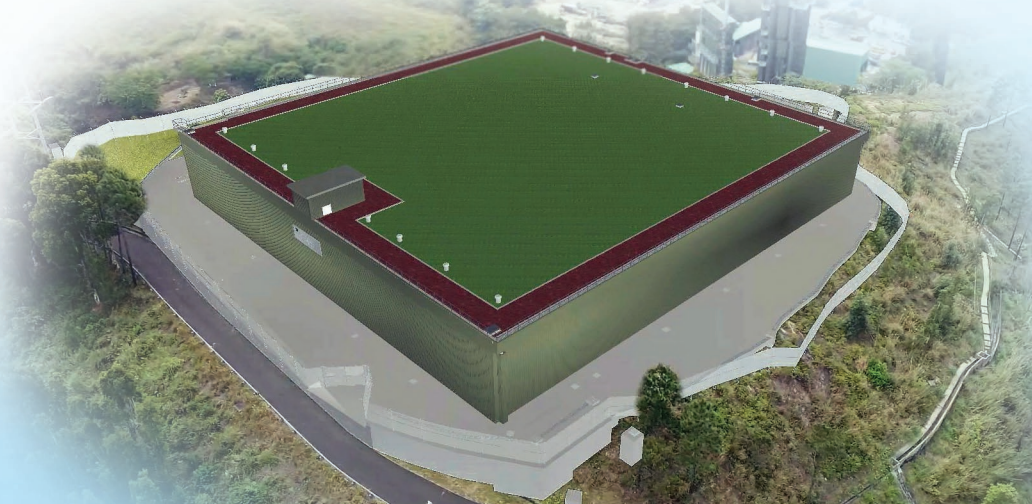
In addition, the existing manual control equipment at six major water treatment works will be mechanised with remote control facilities in order to enhance their overall operational efficiency. Manually operated valve actuators will be gradually replaced in stages with remotely controlled electrical actuators by the end of 2018.

The modernisation work for the Distributed Control Systems (DCS) for six major water treatment works is moving ahead apace. While four DCS units were successfully commissioned over the past years, the modernisation work at Ngau Tam Mei Water Treatment Works will be completed in May 2017. As for the remaining Au Tau Water Treatment Works, the tenders for upgrading the existing DCS have been issued and all works are expected to be completed in two phases by 2019 and 2021 respectively.

The existing four Regional SCADA Systems that are used to remotely oversee water supply network facilities, such as pumping stations and service reservoirs in their respective water supply regions, are being upgraded in stages. The

新建桌山配水庫構想圖。

Illustrative concept of new service reservoir at Table Hill.



成，並已投入運作。餘下的新界東區域監控及資料收集系統的升級工程正如期進行，預計將於二零一七年年底完成，屆時將可提供充足的監控能力，以應對未來十年供水系統的增長。

為提高向整個屯門地區提供沖廁用水的可靠程度，屯門海水抽水站更換高壓電掣板及增設一套現代化控制系統的工程項目已於二零一七年年年初完成。油柑頭濾水廠的電力供應系統和相關的控制系統的改善工程已於二零一七年三月完成，大大提高了供電系統的安全性和可靠性。荃灣海水抽水站亦會進行類似的工程，預計於二零二零年完成。

上水濾水廠正在進行現有脫水設備的啟動升級工程，以提高濾水廠的可靠程度及運作效率，並預計於二零一八年竣工。

除氯系統是一種防護裝置，有助於防止氯氣在罕見的系統故障期間釋放至大氣層，保障濾水廠時刻安全運作。沙田濾水廠除氯系統的更換工程預計於二零一八年中前完成。

systems for Hong Kong and Islands, as well as Kowloon and the New Territories West Regions have been completed on schedule and are already in operation. The upgrading work for the remaining New Territories East Regional SCADA System is on schedule and will be completed by the end of 2017. It will provide sufficient control and monitoring capacity to cope with the growth of the water supply systems over the next decade.

Replacement of the high voltage switchboard and addition of a set of modernised control systems carried out at Tuen Mun Salt Water Pumping Station to improve its reliability for providing flushing water across Tuen Mun area was completed in early 2017. The on-going improvement works on electrical power supply system and associated control systems carried out at Yau Kom Tau Water Treatment Works has been completed by March 2017, which significantly improve the security and reliability of the power supply system. Another similar project will be carried out at Tsuen Wan Salt Water Pumping Station, which is targeted for completion in 2020.

Improvement works on the existing dewatering plants at Sheung Shui Water Treatment Works are now underway and slated for completion by 2018 to enhance plant reliability and operational efficiency.

Chlorine scrubbers, which prevent chlorine gas from leaking into the atmosphere in the unlikely event of a system failure, are protective devices to keep water treatment works operating safely at all times. The replacement works of the chlorine scrubbers at Sha Tin Water Treatment Works is scheduled for completion by mid-2018.

沙田濾水廠南廠原址重置工程的前期工程
The advance works of the re-provisioning of Sha Tin Water Treatment Works (South Works)



優化供水設施

水務署其中一個主要的目標就是妥善管理所有水務設施的生命周期，務求在可接受的風險範圍內，以最符合經濟效益的方式達致最高的服務水平。

本署員工定期監察隸屬本署維修保養權責內的6,500幅斜坡，於去年對約65幅斜坡展開後續預防性保養及提升工程，當中大多數斜坡毗鄰水務署重要設施。有關工程包括打泥釘、斜坡表面加固、在斜坡護面的牆腳栽種植物、改善排水系統、提供安全通道走廊、常規栽種植被及其他措施等。各項措施均有助大大減低山泥傾瀉的風險，以及減少山泥傾瀉對本署設施、生命和財產的威脅。

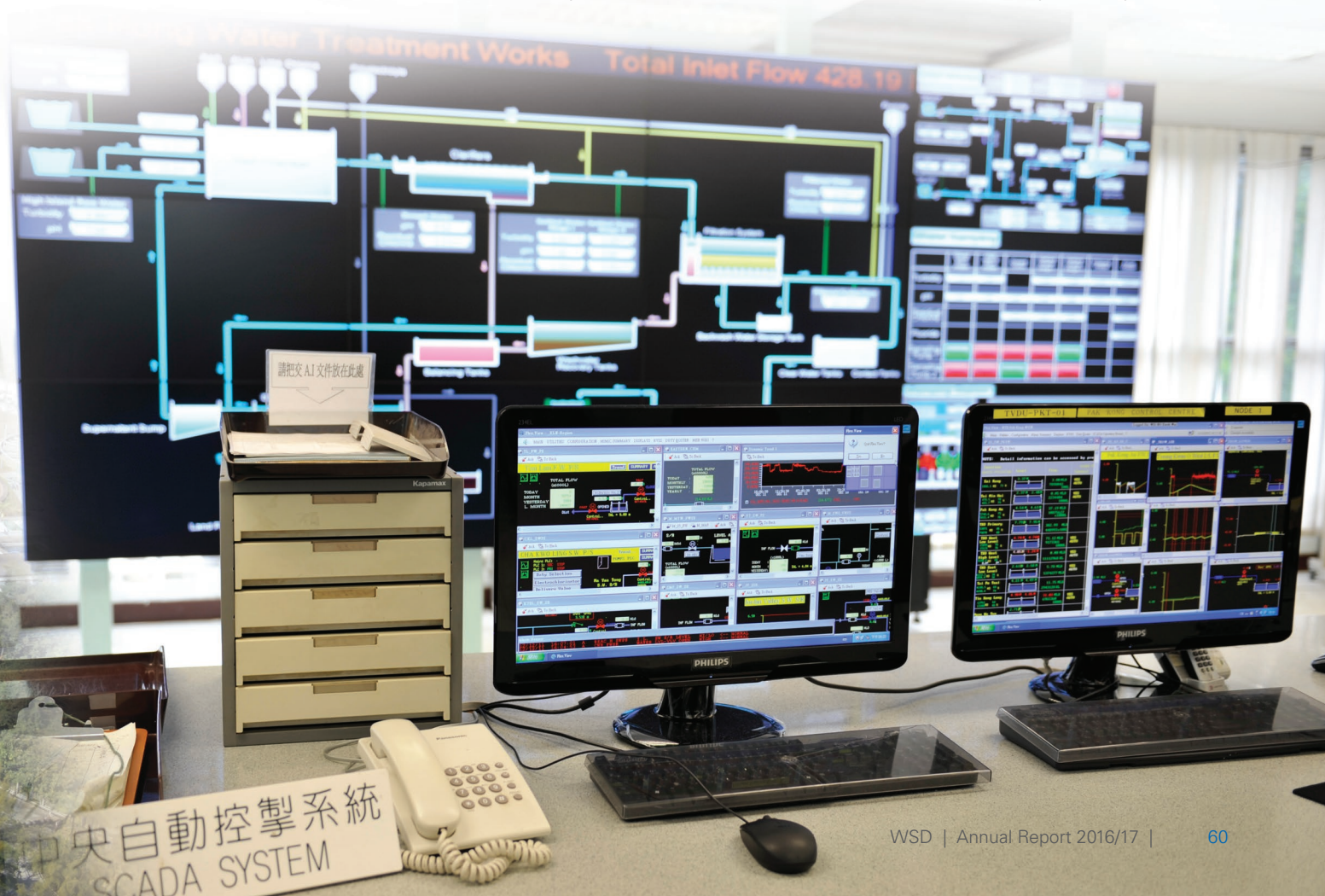
我們亦定期進行視察，檢討配水庫和水塘的安全和穩定性，並就維修工程提出建議，確保配水庫和水塘完善。在過去一年，本署內部員工和外聘顧問分別完成106次詳盡視察和26次獨立視察。

Optimising Waterworks Assets

At WSD, one of our primary goals is to manage the life cycles of all waterworks assets in order to achieve the optimal level of service in the most cost-effective manner all within an acceptable risk framework.

Our staff routinely inspects 6,500 slopes that fall under our maintenance responsibility. Last year we carried out subsequent preventive maintenance and upgrading work for about 65 slope features, most of which are near important WSD installations. This included soil-nailing, slope surface stabilisation, construction of toe planter walls, improvements to drainage systems, providing safe access corridors, general planting and other measures. The result of all these efforts has been a dramatic decrease in the risk of failure of our slopes as well as the danger they pose to our installations, life and property.

We also regularly conduct inspections to review the safety and stability of service reservoirs and impounding reservoirs, making recommendations for maintenance works to ensure each reservoir's integrity. During the past year, we conducted 106 detailed inspections as well as 26 independent inspections by our internal staff and external advisors respectively.



以可靠性為主的維修

於掃桿埔二號食水抽水站進行的以可靠性為主的維修研究計劃已完成。對於已完成以可靠性為主的維修研究的設施，本署會根據報告結果繼續落實修訂項目，例如安裝額外的集水坑泵、增加石灰混合缸的容量，以及採取跟進行動以覆檢定期維修計劃。本署會依據所收集的數據，在來年對以可靠性為主的維修計劃的落實情況展開全面檢討，以進一步完善機械和電力設施的長遠維修策略。

主要濾水廠及抽水站的機械和電力資產狀況評估

為制訂全面的濾水廠及抽水站舊設備更換計劃，我們已完成18個抽水站的狀況評估，並將於來年對六個濾水廠和另外24個抽水站進行評估。我們會持續進行此類評估，以制訂及更新資產管理計劃。

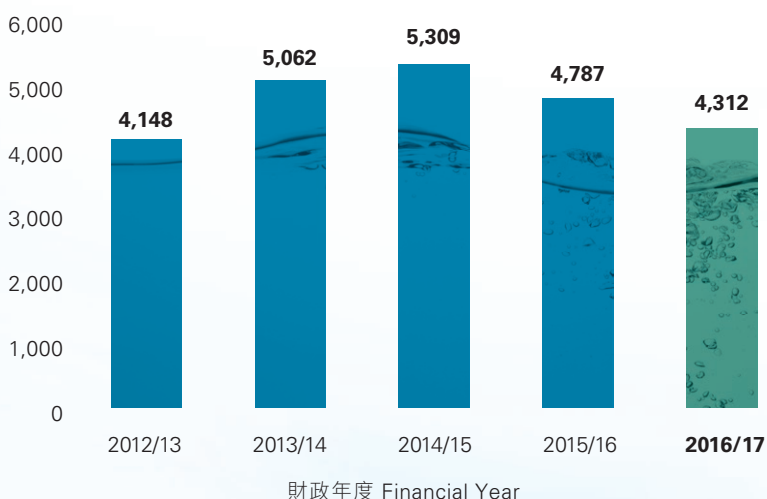
Reliability Centred Maintenance

The project for implementing Reliability Centred Maintenance (RCM) at So Kon Po No. 2 Fresh Water Pumping Station has been completed. For those installations in which the RCM study has been completed, implementation of modification items such as installing additional sump pumps, increasing the volume of lime mixing tanks, and follow up actions to review the planned maintenance programme will continue according to the report findings. An overall review will be initiated on the outcome of RCM implementation with reference to the data being collected in order to refine our long-term maintenance strategies for mechanical and electrical assets in the coming year.

Condition Assessments of Mechanical and Electrical Assets for Major Water Treatment Works and Pumping Stations

To formulate a comprehensive replacement programme for old plant equipment, condition assessments for 18 pumping stations have been completed with assessments for six water treatment works and other 24 pumping stations set for the coming year. We will continue to conduct these assessments on an on-going basis to develop and update our asset management plan.

資本投資(百萬元) Capital Investment (\$million)





財務及水費

Finance and Water Charges

水費

與世界其他主要城市相比，香港用戶為優質食水所繳付的費用相對低廉。除了一九九六年六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。

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：

Water Charges

Water consumers 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 June 1996).

Scale of Charges

Fresh water for domestic use (other than flushing) is charged at four-month period 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)
航運以外用途（非本地船隻），並以預付票繳交水費 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 4 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)

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。在其後的水費檢討，由於對所有級別實施統一加費幅度，以收回整體水務經營成本，因此第二級的建議收費並不同於當時每單位的淨生產成本。於二零一六至一七年度，每單位的淨生產成本為12.0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。

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 the subsequent tariff reviews, the proposed charging rate for the second tier was not equal to the prevailing net unit production cost because a uniform rate of increase for all tiers was adopted taking the waterworks operating costs as a whole. In 2016-17, the net unit production cost is \$12.0, which is materially higher than the charging rate of \$4.16, mainly because water tariffs have not been changed since 1995.

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)。在其後的水費檢討，由於對所有級別實施統一加費幅度，以收回整體水務經營成本，因此第三級的建議收費並不同於當時每單位的總生產成本。於二零一六至一七年度，每單位的總生產成本為16.6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。

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 the subsequent tariff reviews, the proposed charging rate for the third tier was not equal to the prevailing full unit production cost because a uniform rate of increase for all tiers was adopted taking the waterworks operating costs as a whole. In 2016-17, the full unit production cost is \$16.6, which is materially higher than the charging rate of \$6.45, mainly because water tariffs have not been changed since 1995.

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。

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

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。

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

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。

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

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。

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

註七： 此等收費與商業用途收費相同。

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

海水沖廁費用全免。

Sea water for flushing is supplied free of charge.

水務經營帳目自一九九八年至九九年度起已錄得虧損，需依靠政府一般收入補助。二零一六至一七年度錄得虧損13.573億港元，成本回收率為86.5%。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。於二零一六至一七年度，25項法定收費項目維持不變。

水費收入總覽

於二零一六至一七年度，約14%住宅用戶毋須支付任何水費；42%達到第二級水費，需繳付每單位4.16元水費；20%需繳付第三級水費，即每單位6.45元；餘下24%需繳付第四級水費，即每單位9.05元的水費。於二零一六至一七年度，270萬住宅用戶(包括無須繳付水費之用戶)每月平均水費為48元。根據政府統計處的住戶開支統計調查，水費開支約相等於住戶每月平均開支的0.3%。

Waterworks operations have seen deficits since 1998-99 which means that it is subsidised by general government revenues. In 2016-17, the deficit was \$1,357.3M and the cost recovery rate was 86.5%. 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). We have been periodically reviewing 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 2016-17, 25 statutory fee items remain unchanged.

Profiles of the Revenue from Water Charges

During the year 2016-17, about 14 per cent of domestic customers were not required to pay water charges, 42 per cent were paying up to the tier 2 rate of \$4.16 per unit, 20 per cent were paying up to the tier 3 rate of \$6.45 per unit and 24 per cent were paying up to the tier 4 rate of \$9.05 per unit. For the 2.7 million domestic customers, the average water charge in 2016-17, including those not required to pay any charge, was \$48 per month. According to the Census & Statistics Department household expenditure survey, the water charge amounts to about 0.3 per cent of the average monthly household expenditure.

過去五年按用戶類別劃分的水費收入分析如下：

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

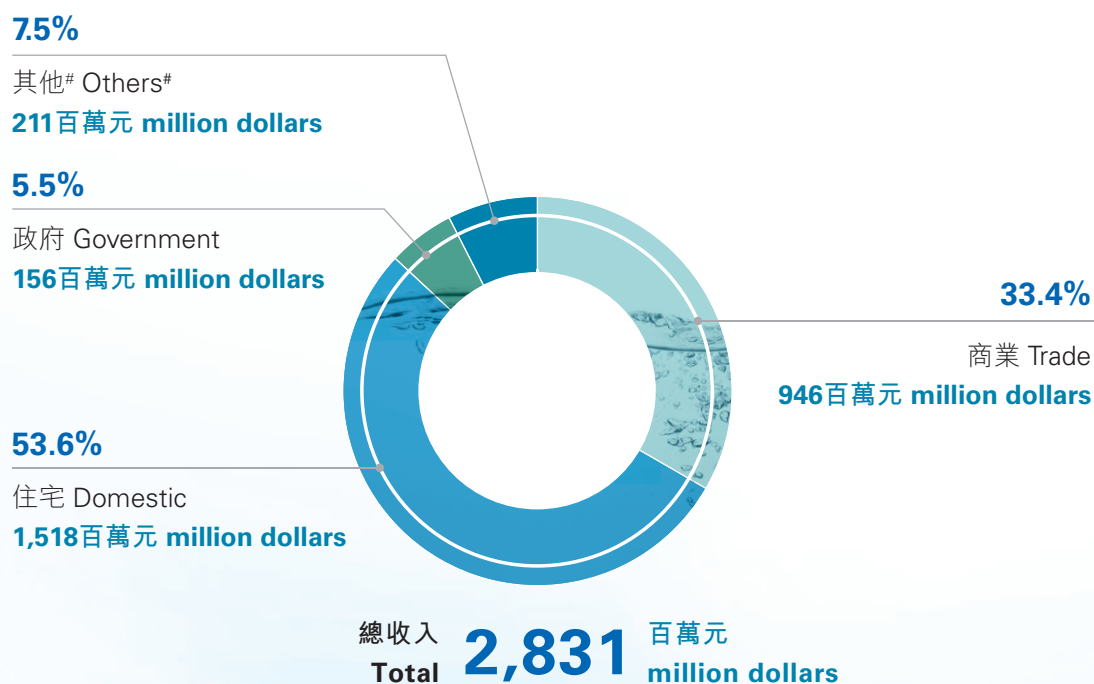
用戶類別 Sector	財政年度(百萬元) Financial Year (\$million)				
	12/13	13/14	14/15	15/16	16/17
商業 Trade	905	903	933	940	946
住宅 Domestic	1,437	1,452	1,474	1,503	1,518
政府 Government	156	159	155	159	156
其他# Others#	185	201	215	212	211
總收入 Total	2,683	2,715	2,777	2,814	2,831

包括沖廁用淡水

including fresh water for flushing

二零一六／一七年度水費收入(按用戶類別劃分，以百分比顯示)

Water Charge (% by Sectors) 2016/17



包括沖廁用淡水

including fresh water for flushing

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

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

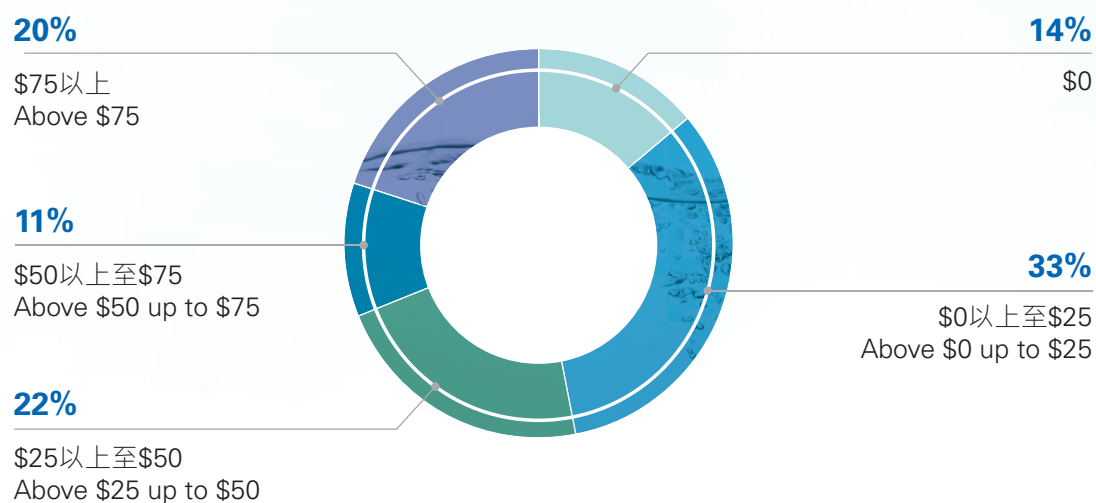
收入(百萬元)

Revenue (\$million)

財政年度 Financial Year	12/13	13/14	14/15	15/16	16/17
一般水費 Chargeable Supplies	2,527.2	2,555.8	2,622.0	2,654.9	2,674.9
差餉補貼 Contribution from Rates	3,561.0	3,970.6	4,263.4	4,574.4	4,763.2
免費用水補貼 Contribution on Free Allowance	912.4	918.7	961.3	1,009.2	1,067.4
政府用水 Supplies to Government Establishments	156.2	159.0	155.1	158.9	156.4
各項收費及其他 Fees, charges and others	31.0	26.5	28.9	37.1	44.5
總額 Total	7,187.8	7,630.6	8,030.7	8,434.5	8,706.4

二零一六／一七年度住宅用戶每月水費分佈圖

Distribution of Household Average Monthly Bill 2016/17



開支(百萬元)

Expenditure (\$million)

財政年度 Financial Year	12/13	13/14	14/15	15/16	16/17
員工開支 Staff costs	1,486.0	1,528.7	1,586.6	1,659.2	1,729.6
運作及行政開支 Operating and administration expenses	1,698.3	1,747.9	1,841.0	1,918.7	1,948.7
購買東江水的成本 Purchase cost of Dongjiang water	3,594.5	3,802.2	4,031.2	4,296.1	4,569.7
折舊 Depreciation	1,416.7	1,482.7	1,583.5	1,699.1	1,815.7
總額 Total	8,195.5	8,561.5	9,042.3	9,573.1	10,063.7

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



可持續運作

Sustainable Operations

經驗及準確理解供水所需的條件是我們維持可持續運作的重要元素。

本署致力：

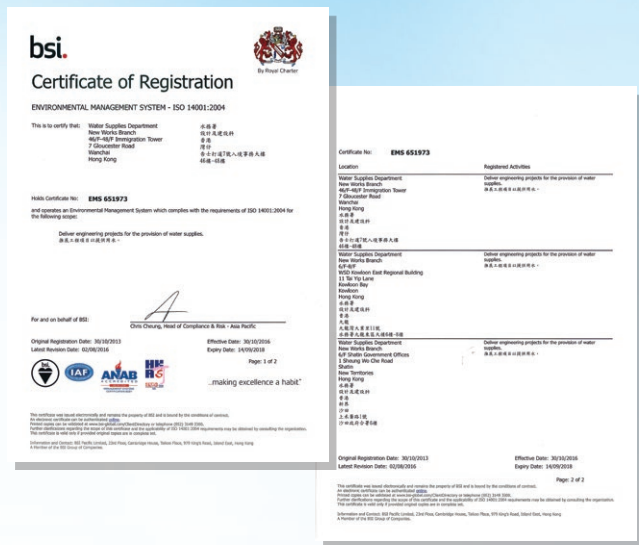
- 嚴格遵守環保規例
- 善用能源和燃料
- 限制氣體排放
- 盡量減少消耗辦公室用品
- 盡量減少在處理食水過程中使用化學品
- 盡量減少供水系統的用水流失量
- 盡量減少建築工程對環境造成的影響
- 減少化驗室、工場和濾水廠的固體、液體及化學廢物
- 盡量減少排放污水，並盡可能循環再用污水
- 減少抽水站發出的噪音
- 提倡安裝綠化屋頂
- 提倡使用再造紙
- 發展可再生能源

Experience and a precise understanding of what is required in terms of viable water supplies are key elements that enable us to operate in a sustainable manner.

WSD is committed to:

- Working in strict compliance with environmental regulations
- Optimising the use of energy and fuel consumption
- Limiting gaseous emissions
- Minimising the consumption of glossary items in offices
- Minimising the use of chemicals in the water treatment process
- Minimising water loss across the distribution system
- Minimising environmental impacts that can arise from construction work
- Reducing the quantities of solid, liquid and chemical wastes generated by our laboratories, workshops and treatment works
- Minimising the discharge of effluent and where possible recycle effluent
- Reducing noise generated from pumping stations
- Encouraging the establishment of green roofs
- Encouraging the use of recycled paper
- Developing renewable energy





使用及節約能源

作為全港其中一個最大的耗電用戶，本署在制定可行的再生能源計劃時，已推行多項措施減少消耗能源。

ISO 50001 能源管理系統

我們在二零一四年十二月獲得ISO 50001 能源管理系統認證。這標誌着一個重要的節能里程碑，見證我們在香港特別行政區整個供水鏈，包括集水、儲水、運水、濾水、分配水源及食水和海水供應方面所作的努力。我們是首個獲得此項認證的香港政府部門。我們會繼續推進多個正在實施的能源管理計劃，務求達致節能目標。舉例來說，我們把環氧樹脂塗料應用於第三批水泵外殼，令幾乎所有水泵的抽水效率均有所提高。

政府建築物的碳管理

本署將在長沙灣辦事處、龍翔道工場、九龍灣辦事處、旺角辦事處和港島及離島分署等五個每年用電量超過50萬千瓦時的水務署大樓進行碳審計，以制訂和實施相應的碳排放措施。

Energy Use and Savings

Being one of the largest electricity consumers in Hong Kong, the Department has been putting in place a myriad of measures to reduce its energy consumption while developing viable renewable energy initiatives.

ISO 50001 Energy Management System

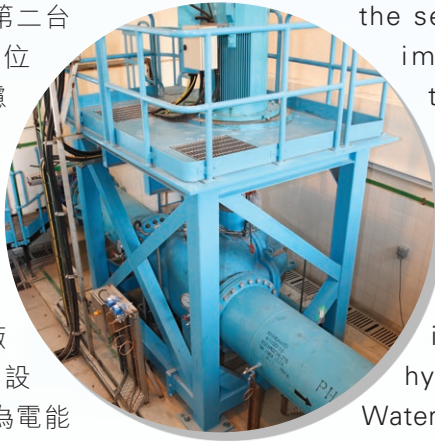
The award of the ISO50001 Energy Management System certification in December 2014 marked an important milestone for WSD's energy conservation efforts over the whole water supply chain including the collection, storage, transfer, treatment, distribution and supply of fresh water and sea water within the Hong Kong SAR. WSD was the first Government Department in Hong Kong to have received the certificate. We have continued to apply a host of on-going energy management programmes to help achieve our energy saving objectives and targets. As an example, ceramic epoxy coating was applied to the third batch of pump casings and the efficiency of nearly all such pumps had found to be improved after then.

Carbon Management in Government Buildings

The Department will conduct carbon audit in five WSD buildings, namely Cheung Sha Wan Office, Lung Cheung Road Workshop, Kowloon Bay Office, Mong Kok Office, and Hong Kong and Islands Regional Office, with annual electricity consumption over 500,000 kWh with a view to mapping out and implementing the corresponding carbon measures.

水力發電站

我們已於二零一七年二月成功為屯門濾水廠第二期工程安裝第二台水力發電機，把水流的位能轉化為電能，為屯門濾水廠的運作提供電力。此外，我們亦會在二零一九年或之前在沙田濾水廠重置工程中安裝另一個水力發電站。我們也已展開在馬鞍山濾水廠的入水口安裝水力發電設施，把水流的能量轉化為電能的可行性研究。



Hydropower Generation Plant

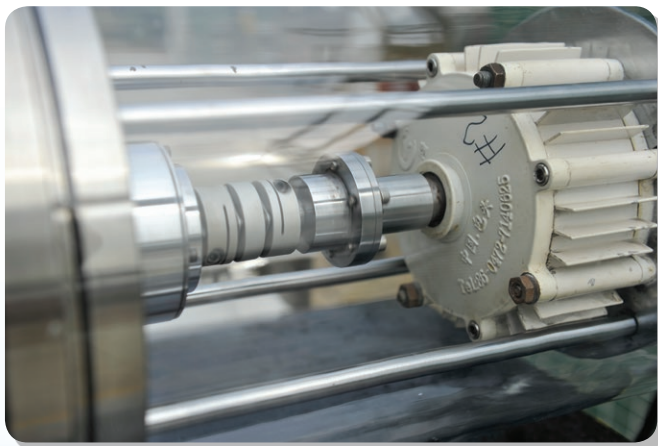
Phase II of the Tuen Mun Hydropower project to install the second generator at the site was successfully implemented in February 2017 to harvest the potential energy of flowing water into electrical power for operation of Tuen Mun Water Treatment Works. Moreover, another hydropower plant in the reprovisioning project of Sha Tin Water Treatment Works will be installed by 2019. A planning study has been initiated to investigate the feasibility of applying hydropower facilities at the inlet of Ma On Shan Water Treatment Works for harvesting electricity from the water inflow.

內聯閉式水力發電裝置

兩個適用於250毫米口徑水管的發電裝置原型已通過嚴格的操作測試。這些發電裝置將會為本署九龍區智管網水壓管理區／監測區域的裝置提供電力，以實時監測該區域，管理供水水壓及檢測區域內水管是否存在滲漏。

In-line Hydropower Harnessing Devices

Two in-line hydropower harnessing devices prototypes suitable for use in the 250mm diameter pipes have passed vigorous running tests. The units will be deployed to power the instruments in the pressure management areas (PMA)/district metering areas (DMA) of the WSD's Water Intelligent Network at Kowloon Region, for real-time monitoring of the PMA/DMA in order to manage water supply pressure and detect water leakage in the pipework in the PMA/DMA.



內聯閉式水力發電系統的模型。
The model of inline hydroelectric generating system in confined condition.

實行變速抽水

實行變速抽水是改善現有及新建抽水站抽水效率的其中一項重要措施。除了在華富海水抽水站進行的試驗計劃之外，本署亦計劃在龍鼓上灘食水泵房的提升工程和小西灣海水抽水站等新建設備採用類似設計。

Implementation of Variable Speed Pumping

Variable speed pump operation is one of the key initiatives that can improve the pumping efficiency for both existing and new pumping stations. In addition to the pilot scheme at Wah Fu Salt Water Pumping Station, a similar design has been adopted for uprating of Lung Kwu Sheung Tan Fresh Water Pump House and new installations such as Siu Sai Wan Salt Water Pumping Station.

在水塘鋪設浮動太陽能板發電系統

在石壁水塘的首個具約100千瓦容量的試驗浮動太陽能板發電系統已於二零一七年二月竣工。在船灣淡水湖建造容量相若的試驗浮動太陽能板發電系統工程也正在進行，預計於二零一七年十月完成。除了發電外，浮動太陽能發電系統還有助減少水塘的水份蒸發，抑制藻類生長，提高水質。這些試驗項目有助我們評估浮動太陽能板發電系統的技術性能、可能出現的環境問題及公眾的反應。就此，我們已委託顧問就大規模在香港水塘安裝浮動太陽能板發電系統進行可行性研究、評估試驗系統並將其表現與海外設施的表現作比較，以及制訂長遠的公眾參與計劃和項目實施策略。

嶄新技術和設備

熱成像安全監測系統

熱成像安全監測系統試驗項目已在北港濾水廠成功推行，我們希望在沙田濾水廠(南廠)項目等其他設施應用該系統。該系統有助減少水務設施內保安和區域照明裝置的耗電量，同時盡量減輕光污染對附近居民的滋擾。

Floating Solar Power Systems at Impounding Reservoirs

The first pilot floating solar system of about 100kW capacity at Shek Pik Reservoir was completed in February 2017. Another pilot with similar capacity at Plover Cove Reservoir is under construction for completion by October 2017. In addition to power generation, the floating solar system will also help reduce water evaporation of reservoirs and improve water quality by inhibiting algae growth. These pilot projects will enable the evaluation of the technical performance of the floating PV power systems, as well as the potential environmental issues and public reaction. In this connection, we have commissioned a consultant to conduct a feasibility study on the large scale implementation of floating PV solar systems in Hong Kong reservoirs, evaluate the pilot systems, benchmark their performance with overseas installations and work out a long-term public engagement and project implementation strategies.

New Technology and Equipment

Thermal Vision-based Security Surveillance System

With the successful implementation of the pilot thermal vision-based security surveillance system at Pak Kong Water Treatment Works, we are looking to apply this system at other installations such as the Sha Tin Water Treatment Works (South Works) project. The system reduces electrical consumption of the security and area lighting of waterworks installations as well as helps minimise the nuisance of light pollution to residents living nearby.

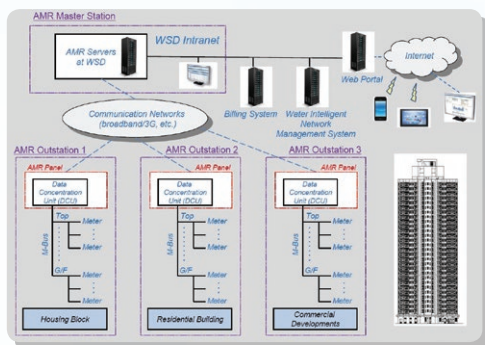


在屯門濾水廠安裝的水力發電機，把水流的位能轉化為電能，為屯門濾水廠的運作提供電力。

The hydropower generator installed in Tuen Mun Water Treatment Works enable harvesting of the potential energy of flowing water into electrical power for operation of the water treatment works.

推行自動讀錶，發展智慧城市

為配合政府發展智慧城市的計劃，我們其中一項的智能水務措施就是在東九龍及安達臣道石礦場用地發展區推行自動讀錶系統計劃。由二零一八／一九年度起，我們會逐步為這些發展區的新建私人及公共發展項目，分階段安裝約55,000個智能水錶。截至二零一七年二月，九龍東有六個私人發展項目和八個公共發展項目已納入安裝智能自動讀錶系統的規劃內。智能自動讀錶系統除了讓用戶遙距讀錶外，還可向用戶提供適時的用水數據和相關的資訊，以提升用戶節約用水的意識。



自動讀錶系統示意圖。

Schematic diagram of the Automatic Meter Reading System.

Automatic Meter Reading for Smart City

To support the Government's initiative to forge smart cities, a large scale Automatic Meter Reading (AMR) project will be implemented at the Development of Kowloon East and Anderson Road Quarry Development Site as one of our smart water initiatives. New private and public developments at these development areas will be installed with around 55,000 smart water meters progressively starting from 2018/19. As of February 2017, there are six projects in private sector and eight projects in public sector at Kowloon East being planned to install AMR system. In addition to remote reading of water meters, the AMR system can provide timely water consumption data and related information to customers to raise their awareness about water conservation.

可持續發展

騰出分區辦事處用地，善用土地資源造福社群

我們將搬遷位於旺角洗衣街的新界西分區辦事處，以騰出土地作其他有利用途。為此，該分區辦事處將遷往天水圍。新分區辦事處樓宇的建築工程已於二零一五年八月動工，預計於二零一七年年年底竣工。建築工程正如期進行，上層建築工程現亦正全力展開。該搬遷將改善新界西分區的運作效率及水務設施的維修保養工作。

Sustainable Development

Releasing a Regional Office to Optimise Land Use for the Public's Benefit

Our New Territories West (NTW) Regional Office at Sai Yee Street, Mong Kok will be relocated to release the site for other beneficial uses. To this end, the Regional Office will be relocated to Tin Shui Wai. The construction works for the new Regional Office building began in August 2015 with completion slated for end 2017. The progress of the construction is on schedule with superstructure works now in full swing. The relocation will enhance operational efficiency and maintenance of waterworks facilities in the NTW Region.



新界西新分區辦事處
New Territories West New Regional Office

將水務設施遷往岩洞

為配合政府增加土地供應的政策，發展岩洞是滿足社會發展需要的可行方法。政府已提出方案搬遷現有設施至岩洞，從而騰出土地作房屋或其他用途，以滿足本港長遠的社會及經濟需要。鑽石山食水配水庫及鑽石山海水配水庫已確定適合搬遷至岩洞。擬議搬遷項目的可行性研究預計將於二零一七年年中完成。土地在騰出後的建議用途主要是提供房屋，以滿足社區需要，以及提供政府、機構或社區所需設施及休憩空間，以造福當地社群。

除該搬遷建議外，水務署亦正聯同有關部門，確定其他不但適宜遷往岩洞而且該搬遷具成本效益的配水庫。

延伸海水供應系統，節約寶貴食水

華貴邨和嘉隆苑的海水供應現已投入運作，而在薄扶林區將沖廁水由食水轉為海水的工程仍進行得如火如荼。

新界西北部(包括屯門東、元朗及天水圍)的新供水核心系統已於二零一五年竣工。將沖廁水由食水轉為海水的工程已於二零一六至一七年度完成。元朗屋邨的改建工程目前正在進行中，而元朗工業邨的工程將會隨後展開。

此外，東涌的新海水供應項目現處於設計階段。

Caverning of Waterworks Installations

In line with the Government's policy of increasing land supply, rock cavern expansion is a practical approach for meeting the developmental needs of our society. The Government has initiated proposals to relocate existing facilities to caverns so that the released sites can be used for housing or other uses to meet Hong Kong's long-term social and economic needs. Diamond Hill Fresh Water Service Reservoir and Diamond Hill Salt Water Service Reservoir were identified as suitable facilities for relocation to caverns. The feasibility study for the proposed relocation project is anticipated to be completed by mid-2017. The proposed land uses of the released site focus on the provision of housing in meeting the community demand and the needed facilities comprising Government, institution or community facilities and open space in serving the local community.

In addition to this relocation proposal, WSD is also working with relevant departments to identify other potential service reservoirs that may be feasible and economically viable for relocation to caverns.

Extending the Salt Water Supply System to Save Precious Fresh Water

Salt water delivery to Wah Kwai Estate and Ka Lung Court is now in operation and the conversion to salt water for flushing in Pok Fu Lam continues apace.

The new core system for water supply to the North West New Territories, serving Tuen Mun East, Yuen Long and Tin Shui Wai was completed in 2015. The conversion of flushing water supply into salt water was completed in 2016-17. Conversion works for housing estates in Yuen Long are currently in progress and the works for Yuen Long Industrial Estate will follow afterwards.

Moreover, a new salt water supply system for Tung Chung is currently in the design stage.

樹木管理及樹木風險評估

本署一向貢獻己力，努力令我們的城市變得更綠意盎然，保持水務設施及斜坡內的景觀生機處處、永續欣榮，以維持環境的原生態。為此，我們會繼續實施全面的樹木風險評估和管理計劃，確保該些存在結構或健康問題的樹木能得以識別，以及時採取減低相關風險的措施，並對有問題的樹木進行定期監測和檢查。倘若當前並無有效措施將樹木風險降至可接受水平，最後一著則只能移除樹木，並另外種植樹木，彌補景觀損失。在可行情況下，我們會對現有樹木加以保育保護，選擇及種植能保護生態和節約用水的本土樹木，並進行不同主題種植，美化景觀。



Tree Management and Tree Risk Assessment

We have long contributed towards making our city greener as well as maintaining healthy and sustainable landscape within WSD's installations and slopes, to maintain a pristine environment. To this end, we have continued to implement a comprehensive tree risk assessment and management scheme to ensure that trees with structural or health problems are identified for timely risk mitigation procedures and undergoing regular monitoring and inspections. In cases where no effective measures are present to reduce tree risks to an acceptable level, tree removal is the last resort and replacement tree planting is undertaken to compensate for the landscape loss. Where practical, we incorporate existing tree preservation and protection, select and plant native species for ecological conservation and water saving, and carry out thematic planting to enhance the landscape.

關注環境

本署的抱負是致力滿足客戶對優質供水服務的需求，務求每天取得卓越表現。作為以上承諾的一部分，我們願意承擔對維持環境清潔應負的責任。為此，本署的設計及建設科肩負重任，力求確保在水務規劃、設計及建設方面，把建築工程對環境造成的影響降至最低。自二零一三年年初至今，設計及建設科一直奉行嚴格規程，作為按照ISO 14001所制訂環境管理體系的一部分。環境管理體系要求：「為已規劃及新增的工程項目、發展項目、產品及服務提供供水服務時，妥善做好環境管理工作」。於二零一三年十月，設計及建設科獲頒ISO 14001: 2004環境管理體系標準認證，此認證適用於供水工程項目交付。其後本署制訂多項環境管理計劃，並每年進行檢討，以利環境目標得以實現。

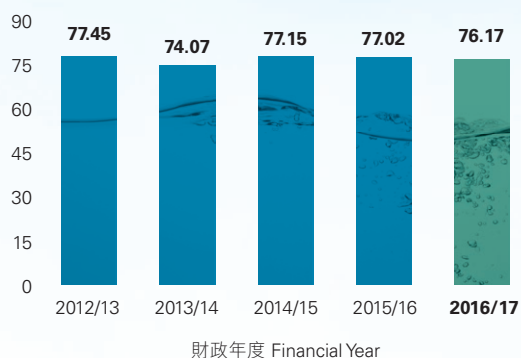
Environmental Focus

The vision of the Department is to excel each day in satisfying the need to provide quality water supply services to our customers. As part of that commitment, we fully appreciate the responsibilities we have in maintaining a clean environment. For this reason, the New Works Branch of the Department is tasked to ensure that all impacts to the environment that can arise from construction works are minimised in planning, designing and building waterworks. Since early 2013, the New Works Branch has followed a strict protocol as part of the Environmental Management System (EMS) in accordance with ISO Standard 14001. The EMS mandate is: "Environmental management while providing water supply services from planned and new engineering projects, developments, products and services". In October of 2013, the New Works Branch obtained ISO14001: 2004 Environmental Management System Standards certification applicable to the delivery of engineering projects for the provision of water supplies. A host of environmental management programmes have subsequently been developed and reviewed annually to assist in achieving our environmental objectives and targets.

人均耗電量(食水及原水)

Per Capita Electricity Consumption (Fresh Water and Raw Water)

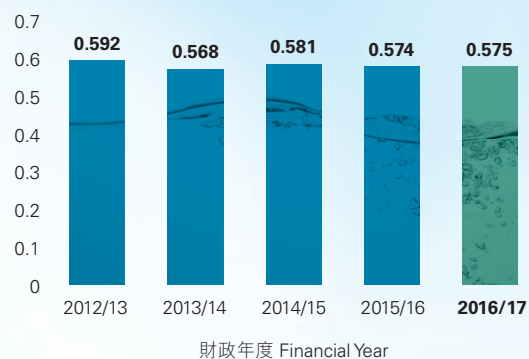
千瓦時/每人/每年 kWh/head/year



每單位耗電量(食水及原水)

Unit Electricity Consumption (Fresh Water and Raw Water)

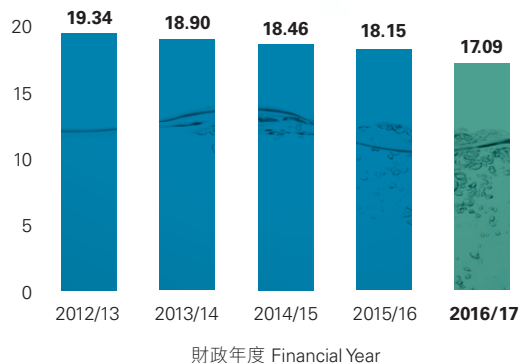
千瓦時/立方米 kWh/m³



人均耗電量(海水)

Per Capita Electricity Consumption (Sea Water)

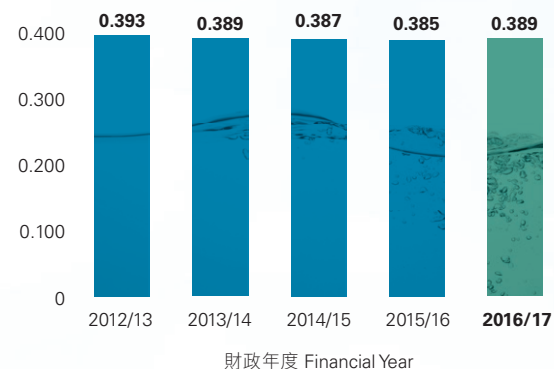
千瓦時/每人/每年 kWh/head/year



每單位耗電量(海水)

Unit Electricity Consumption (Sea Water)

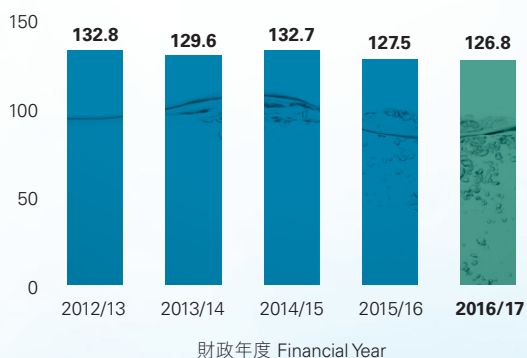
千瓦時/立方米 kWh/m³



辦公室每單位樓面面積的耗電量

Office Electricity Consumption Per Unit Floor Space

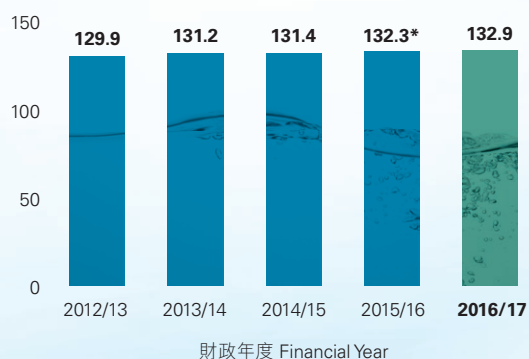
千瓦時/平方米 kWh/m²



人均住宅食水耗用量

Per Capita Domestic Fresh Water Consumption

公升/日 Litres/day

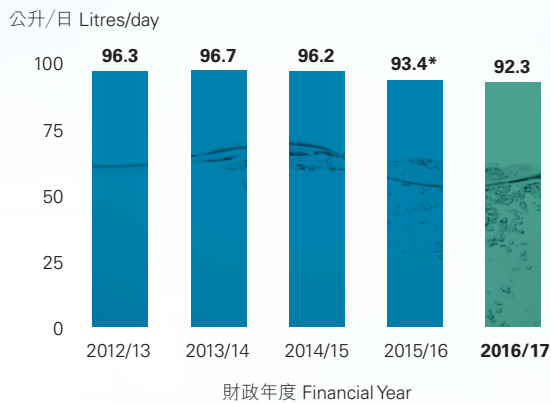


* 2015/16年度的數字經檢討後作出修訂。

* The figure in 2015-16 is restated following a review.

人均沖廁水耗用量(食水及海水)

Per Capita Flushing Water Consumption (Fresh Water & Sea Water)



註：人均沖廁水耗用量(食水及海水)是根據本港的沖廁用水總量計算而得。

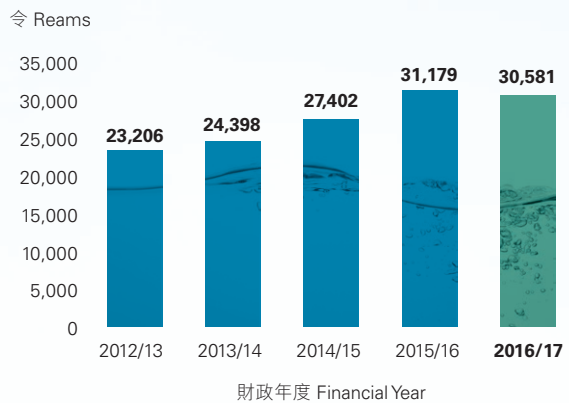
* 2015/16年度的數字經檢討後作出修訂。

Note: Per Capita Flushing Water Consumption (Fresh Water & Sea Water) is based on the total flushing water consumption in Hong Kong.

* The figure in 2015-16 is restated following a review.

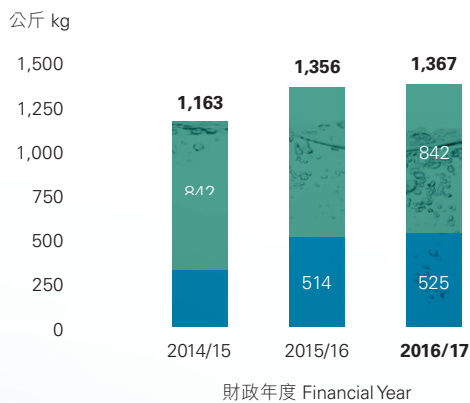
耗紙量

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

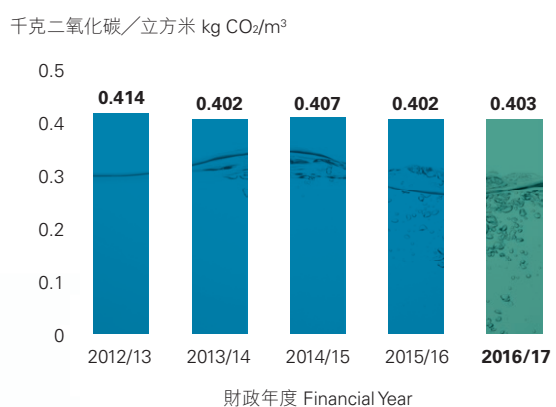


塗料、黏合劑及密封劑 Paints, Adhesives and Sealants

其他 Others

水務署因使用電力處理食水而出現的溫室氣體排放

GHG Emissions due to Electricity Used for Fresh Water Processing by WSD



公用集調車輛資料

Information on Vehicle Pool Transport

財政年度 Financial Year	公務用車數量 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)		
	14/15	15/16	16/17	14/15	15/16	16/17	14/15	15/16	16/17
柴油 Diesel	16	19	28	18,581	23,386	34,554	85,058	117,327	163,522
汽油 Petroleum	186	181	163	534,440	497,598	511,092	2,641,642	2,287,717	2,424,315
混合(汽油／電力) Hybrid (Petrol/Electric)	18	18	16	14,920	12,435	11,678	239,631	204,159	189,569
液化石油氣 LPG	13	13	11	53,802	57,218	55,940	157,962	165,590	160,744
電力 Electricity	13	15	20	—	—	—	82,740	97,188	101,237

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	14/15	15/16	16/17	14/15	15/16	16/17	14/15	15/16	16/17	14/15	15/16	16/17
直接廢氣排放 Direct Emissions												
公務用車(柴油) Vehicle fleet (Diesel)	48	55	82	—	—	—	—	1	1	—	—	—
公務用車(汽油) Vehicle fleet (Petrol)	1,216	1,114	1,129	—	—	—	1	1	1	—	—	—
公務用車(液化石油氣) Vehicle fleet (LPG)	88	85	93	—	—	—	—	—	—	—	—	—
間接廢氣排放 Indirect Emissions												
耗用電(九龍及新界) Electricity Consumed (Kowloon and New Territories)	391,276	332,732	320,938	250	78	91	482	313	293	15	7	6
耗用電(港島) Electricity Consumed (Hong Kong Island)	51,587	50,737	50,886	17	18	16	56	52	52	1	1	1
總量 Total	444,215	384,723	373,128	267	96	107	539	366	346	16	8	8

專注客戶服務

Focusing on Customer Service



作為一個以客為本的政府機構，我們盡量向公眾提供不同的溝通渠道，確保用戶能迅速與我們聯絡，從而清楚得知各區水務工作的進展情況。

As a customer-focused organisation, we at WSD make ourselves as accessible as possible to the public to ensure that our customers can reach us quickly and, in turn, are clearly informed of any water-related developments in their districts.

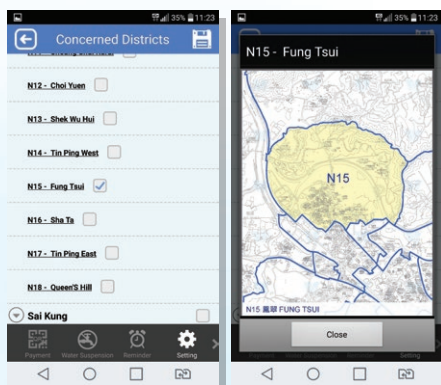
保持溝通

Staying in Touch

智能手機流動應用程式

Mobile App for Smartphones

我們推出的「水務署流動應用程式」服務可供用戶查閱水務署的重要資訊，以及憑二維碼在便利店繳交水費而無需出示水費賬單。應用程式中的關注地區已由18區進一步劃分為431個分區，以協助用戶接收相關分區的停水資訊。用戶也可以透過應用程式獲取喉管及裝置的產品資訊，以及在網上提交用戶轉名的申請（適用於以個人名義申請住宅用水或沖廁用水的用戶）。



After the launch of the “WSD Mobile App” service for users to view important information from WSD, and to make payments at convenience stores by using the QR code provided without the need to present their paper water bills, the concerned districts in the mobile app have been subdivided from 18 districts into 431 subdistricts in order to help users to receive

water suspension notices of the relevant sub-district. Users can also obtain Water Supply Pipes and Fittings Product information and submit online applications for change of consumership (for domestic or flushing supplies in a personal capacity).

電子帳單服務

我們已精簡並提升電子帳單服務，包括在付款到期日前向電子帳單客戶發出提醒，使服務更方便易用。用戶亦可在網上查閱最近兩年的用水量及付款記錄。截至二零一七年三月三十一日，66,400名用戶已選擇以電子方式接收水費帳單，比去年同期增加8,200名或14%。



e-bill Service

Our e-bill service has been streamlined and enhanced to improve user friendliness and convenience, including sending a reminder to e-bill customers before the payment due date and allowing users to view their water consumption and payment records over the last two years online. As of 31st March 2017, 66,400 customers have opted to receive their water bills electronically, representing an increase of 8,200 or 14%, compared with the same period last year.



方便用戶繳費

本署乃提供電子帳單及繳費服務的參與商家之一，該服務於二零一五年九月一日起生效。電子帳單及繳費服務是由香港金融管理局推出的一站式平台，用戶可透過網上銀行戶口接收電子帳單、管理及安排繳付水費。我們亦計劃於二零一七年年中接受以電子支票的方式繳交水費單。

Facilitating Bill Payments

We are one of the participating merchants that provide Electronic Bill Presentment and Payment (EBPP) service effective from 1st September 2015. EBPP is a one-stop platform launched by the Hong Kong Monetary Authority for users to receive, manage and schedule payments for electronic bills through internet banking accounts. We will also accept e-cheques for payment of water bills starting in mid-2017.

水錶及讀數

本署一向積極更換已達指定使用年期的水錶。於二零一六至一七年度，我們分別更換了約207,000個小型和6,500個大型舊水錶。因此，於本財政年度結束時，已超過指定使用年期但仍在運作的小型及大型舊水錶的比例分別只有3.3%和1.9%。基於此，在二零一六至一七年度，正在使用而讀數準確度符合理想水平的水錶比例已由97.0%上升至97.3%。

Meters and Readings

The Department has been actively replacing water meters that have reached their designed service lives. During 2016/17, we replaced about 207,000 small and 6,500 large aged meters respectively. As a result, there will only be 3.3% of small meters and 1.9% of large meters with ages that exceed their designed service lives remaining in operation by the end of the financial year. As a consequence, the percentage of those meters now operating at their desired accuracy has risen to 97.3% from 97.0% for the 2016/17 period.

讓用戶取得最新資訊

客戶聯絡小組

客戶聯絡小組於一九九三年七月成立，並由三十名來自社區各界人士組成。客戶聯絡小組會議每四個月舉行一次。客戶聯絡小組會議每四個月舉行一次。小組成員已就供水服務提出許多具建設性的意見及建議，成為水務署及客戶之間有效的溝通渠道。在過去一年，小組成員曾參觀馬鞍山濾水廠，並聽取了關於「水務署流動應用程式」－新增繳費功能（包括登記電子服務帳戶）、「大廈優質供水認可計劃－食水（2.0版）」、「香港的食水處理」、「向水務監督申請建造、安裝、更改及移動內部供水系統」、「樓宇內天花滲漏的處理」及「強制使用已註冊『用水效益標籤計劃』的指定產品」的講解。

Keeping Customers Informed

The Customer Liaison Group

The Customer Liaison Group (CLG) was formed in July 1993 and comprises 30 members from different sectors of the community. CLG meetings are held once every four months. Many constructive views and suggestions concerning water supply services have been put forward by Group members and this has served as an effective communication channel between the Department and our customers. During the past year, members visited Ma On Shan Water Treatment Works. Presentations were also given to members on “New payment function in WSD Mobile Apps (including registration of Electronic Services Account)”, “Quality Water Supply Scheme for Buildings – Fresh Water (Plus)”, “Water Treatment in HK”, “Seeking permission from the Water Authority for the Construction, Installation, Alteration and Removal of Inside Service”, “Handling of Ceiling Seepage in Buildings” and “Mandatory Use of Designated Products registered under Water Efficiency Labelling Scheme (WELS)”.



家用水質

大廈優質供水認可計劃－食水(2.0版)

計劃自二零零二年推出，鼓勵業主及樓宇管理公司妥善保養其大廈的內部食水水管系統。計劃名稱已改為「大廈優質供水認可計劃－食水(2.0版)」。截至二零一七年三月三十一日，本署就這計劃已向業主及／或樓宇管理公司頒發1,665張金、銀及藍證書，以表揚他們在保養內部食水水管系統所作的努力。

大廈優質供水認可計劃－沖廁水

計劃於二零一三年推出，鼓勵業主及樓宇管理公司妥善保養其大廈的內部沖廁水水管系統。截至二零一七年三月三十一日，本署就這計劃已向業主及／或樓宇管理公司頒發1,290張銀和藍證書，以表揚他們在保養內部沖廁水水管系統所作的努力。

Water Quality in the Home

Quality Water Supply Scheme for Buildings – Fresh Water (Plus)

The scheme has been launched since 2002 to encourage building owners and property management agents to maintain the internal fresh water plumbing systems of their buildings properly. The scheme has been re-named “Quality Water Supply Scheme for Buildings – Fresh Water (Plus)”. As on 31 March 2017, the WSD has awarded 1,665 Gold, Silver and Blue certificates under this scheme to building owners and/or property management agents in recognition of their efforts to maintain the internal fresh water plumbing systems.

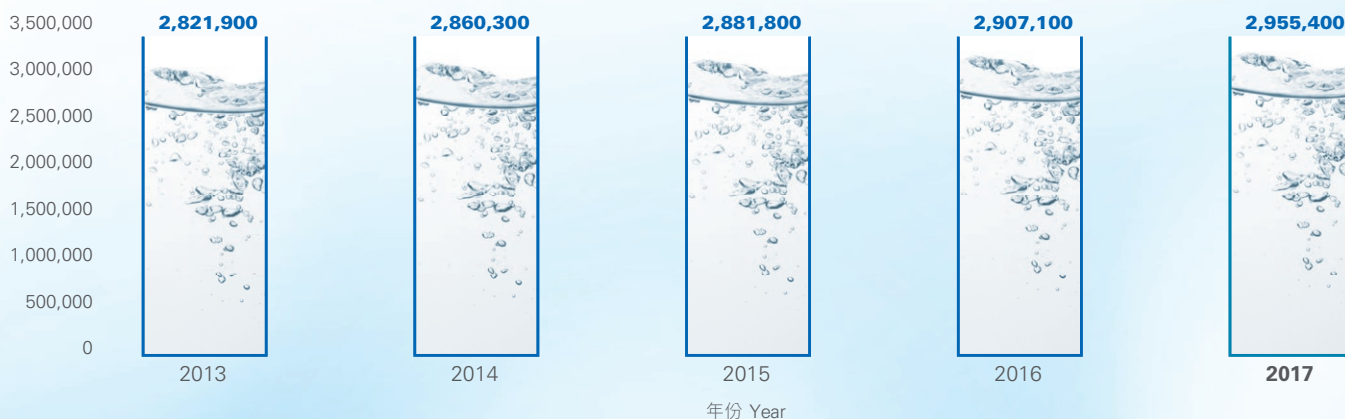
Quality Water Supply Scheme for Buildings – Flushing Water

The scheme has been launched since 2013 to encourage building owners and property management agents to maintain the internal flushing water plumbing systems of their buildings properly. As on 31 March 2017, the WSD has awarded 1,290 Silver and Blue certificates to building owners and/or property management companies in recognition of their efforts to maintain the internal flushing water plumbing systems.



客戶數目 (截至二零一七年三月三十一日)

Number of Accounts (as at 31st March 2017)



精益求精

Enhancing Our Competencies

本署致力培育一支出色的管理團隊，同時推行工作場地計劃，藉以提升在所有供水環節供應優質食水的能力。

The Department is dedicated to the development of a strong managerial leadership team while at the same time initiating workplace programmes to improve competencies that involve all phases of providing high quality water supplies.

培訓

水務署已培育一支富有才幹和竭誠服務的工作隊伍，並安排他們在本署各級部門任職。我們為4,446名員工安排深入培訓計劃，確保我們能持續滿足用戶的需要和超越他們的期望。本年度，我們繼續參與名為「工程師講座」的跨部門知識分享會聯合計劃。我們每星期向各部門（即土木工程拓展署、路政署、渠務署、運輸署及水務署）的工程組員工提供講座。講者包括具備專業知識、經驗或在特定或專業領域受過特別培訓的專業人員、退休公務員或專家。這項統一計劃能促進知識分享、建立知識社群及激發員工的興趣。

Training

WSD has nurtured a talented and highly dedicated workforce that extends across the entire range of the Department's operations. We scheduled in-depth training schemes for our (4,446) staff members to make sure that we continue to meet and exceed the needs and expectations of our customers. This year, we continue to participate in a jointly instituted programme of inter-departmental knowledge-sharing sessions entitled – "ENGINEER Talks". These meetings were delivered to staff members from: Works Group of departments viz. Civil Engineering and Development Department (CEDD), Highways Department, Drainage Services Department, Transport Department and WSD on a weekly basis. The speakers included professionals, retired officers or experts with valuable knowledge, experience or special training in their particular or specialised areas. This centralised programme facilitates knowledge sharing, while building up a knowledge community and arousing staff members' active interests.

我們會繼續提供培訓，以加強或提升員工的技術知識和管理能力，尤其是與濾水、水安全及資訊科技相關的知識和技能。

於二零一六／一七年度，我們已提供共8,356個培訓日，成本達230萬港元。在減低工作地點意外方面，統計數字顯示，水務工程合約意外率一直處於較低水平。事實上，我們的意外率遠低於政府就工務工程合約所定的安全上限。

We continue to provide training programmes to enhance or upgrade the technical knowledge and managerial skills of our staff members, particularly in the area of water treatment, safety and information technology.

In 2016/17, we conducted a total of 8,356 training days at a cost of HK\$2.3 million. With respect to reducing workplace accidents, statistics show that we are maintaining a consistently low rate of cases on waterworks contracts. In fact, we are well below the safety limits designated by the Government for public works contracts.



培育一支盡心盡力的工作隊伍

我們亦已在本署各級管理層與員工之間建立強而有效的溝通渠道。為此，部門協商委員會及轄下小組委員會提供多個有效平台，供全體員工就共同關切的事項交換意見。除定期會議外，本署亦就員工關切的事項安排與工會舉行臨時會議及協商簡報會，而高級管理人員亦定期到訪各辦事處及工作場地，向員工通報部門重要事項及解答員工關切的主要問題，提升士氣。本署期望所有主管人員在履行職責時以提高生產力及改善服務作為第一要務。為此，本署已推出多項激勵計劃，鼓勵員工出謀獻策，務求改善服務及提升工作效率。提出的創新建議經試行、試驗及實施後，明顯提升了我們的服務質素和運作效率。

Fostering a Committed Workforce

We have also established strong and effective communications channels between managers and staff within the Department. In this regard, the Departmental Consultative Committee and its sub committees have provided useful forums to create an open exchange of ideas on issues of common concern for all staff members. Apart from regular meetings, the Department also holds ad-hoc meetings and consultative briefings with staff unions on issues of concern to staff members. Senior management personnel also make regular visits to individual offices and work sites to help boost staff morale while updating staff on key departmental issues and addressing major staff concerns. As part of their duties, all supervisors are expected to make productivity enhancements and service delivery improvements a top priority. To this end, the Department has introduced a number of motivation schemes to encourage

staff to contribute their ideas and opinions on how to improve service delivery and foster greater operating efficiency. The result is that new innovative ideas are being tried, tested and implemented, significantly helping us achieve impressive service and operational improvements.



向合作伙伴學習

我們與多間頂尖學術機構一同研究及發展多個項目，從而加強了雙方在技術發展和新技術應用方面的合作。本署積極及致力在整個部門內培養創新文化。年度內，員工為協助全面提升本署運作達致卓越表現而提出許多意見和建議，本署亦已仔細考慮有關建議，並在可行情況下付諸實行。

濾水廠技術轉移工作坊和培訓小組

於二零一零年，本署設立技術轉移工作坊及培訓小組，以提高員工對水處理最新發展的認識。我們舉辦研討會及技術考察，涉及設計、合約管理、濾水工藝和濾水廠的運作。年度內，200名員工參加了三場培訓小組知識分享會，分別是大埔濾水廠擴展工程一二號水道的水處理工藝設計和建造、將軍澳海水淡化廠一項目推行、水處理工藝及能源效益，以及海水化淡技術轉移工作坊。本署的工程顧問及承建商會繼續與員工分享先進的技術知識。

為主要濾水廠前線員工安排實地培訓

由於濾水廠運作本質上屬於非常專業的範疇，而且各濾水廠的濾水工藝及設備各有不同，因此本署在濾水廠為前線員工安排特別的實地培訓，以傳授各濾水廠設備的運作經驗及技術。

Learning from Partnerships

We have formed a great many partnerships with academic institutions on research and development projects. This has led to strengthened collaborative relationships on technological developments and newly developed applications. The Department actively cultivates and work hard to achieve a culture of innovation throughout the organisation. The large number of ideas and suggestions submitted by staff during the year that will help raise the overall excellence of our operations have been carefully considered and, where feasible, these ideas will be implemented.

Update on the Technology Transfer Workshop and Training Group on Water Treatment Works

In 2010, the Department formed a technology transfer workshop and training group to help increase knowledge about the latest developments in water treatment. We held seminars and technical visits on design, contract management, treatment processes and treatment plant operations. During the year, 200 staff participated in knowledge-sharing at three seminars of the training group, namely Expansion of Tai Po Water Treatment Works – Treatment Process Design and Construction of Stream II, Tseung Kwan O Desalination Plant – Project Implementation, Treatment Processes and Energy Efficiency, and Desalination Technology Transfer Workshop. Our engineering consultants and contractors will continue to share their advanced technical knowledge with staff.

On-site Training for Frontline Operators at Major Water Treatment Works

Since the operation of water treatment works is by nature very specialised, and the treatment process and the plants of each water treatment works are different, we arrange special on-site training for frontline staff at our water treatment works in order to facilitate the transfer of experience and technical know-how on how each facility operates.

部門職位互調計劃

自二零零九年起，水務署參與「自願性職位互調計劃」，將本署的工程師調派至土木工程拓展署等工程部門，以擴闊他們的視野和工作經驗。「自願性職位互調計劃」成效顯著，現已踏入第八年，成功互調41對工程師。本署所有部門的工程師都可申請職位互調，一般為期兩年。基於「自願性職位互調計劃」的經驗所得，水務署及土木工程拓展署亦自二零一四年十一月起，向二零零八年起獲聘任的工程師實施部門指令職位互調，一般為期三年。本署深信職位互調經驗有利於員工的事業發展，並為他們提供一個全新的環境，讓他們展現主動性和個人才能。

建立團隊精神

為令員工維持工作與生活的平衡，並且讓本署員工與發展局及各部門的同事建立友誼、培養團結精神，水務署過去一年舉行了各式各樣的體育活動，吸引超過380名員工參與其中。本署亦鼓勵員工參與各種外間的體育活動，例如由建築業議會舉辦的「建造業2017開心長跑暨嘉年華」和「2016建造業運動會暨慈善同樂日」、「香港街馬@九龍2017」、跨部門高爾夫球友誼杯、「樂施毅行者2016」及其他各種活動。以上各項活動均有助員工建立更堅實的團隊精神之餘，亦有助加強政府部門之間的聯繫，以及促進員工培養健康的生活習慣。



本署員工參與各種外間的體育活動。
Staff members of WSD participate in different kinds of external sports events.

Departmental Cross Postings

Since 2009 under the Voluntary Cross Posting Scheme (VCPS), engineers from our Department are seconded to CEDD's group of departments in order to expand their overall exposure and broaden their work experience. This successful scheme, now in its eighth year, has teamed up 41 pairs of engineers. Engineers from all sections of our Department can apply for cross-posting for a term which normally spans two years. Based on the experience gained from VCPS, WSD and CEDD have since November 2014 implemented a Management Initiated Cross Posting (MICP) for engineers appointed since 2008. To date, postings for nine pairs of engineers have been realised under the MICP. The duration of each MICP is normally three years. The Department believes strongly that this cross-posting experience helps staff members with their career development and offers a fresh new environment for colleagues to display their personal initiative and individual capabilities.

Team Building

To foster a better work-life balance and promote friendship and solidarity among staff members and colleagues of the Development Bureau and various departments, the Department held a series of diversified sports events with over 380 participants over the past year. The Department also encouraged staff members to participate in different kinds of external sports events, such as the "Construction Industry 2017 Happy Run cum Carnival" and "Construction Industry Sports Day cum Charity Fun Day 2016" organised by the Construction Industry Council, Hong Kong Streetathon@Kowloon 2017, the Inter-departmental Golf Friendship Cup, Oxfam Trailwalker 2016 and many others. These events have greatly contributed to building a stronger *esprit de corps* among staff members and strengthening the bonds between government counterparts and the Department as well as fostering healthier life styles for everyone.



義務工作

本署人員一如既往積極參與義務工作，履行對社會的承諾及展現對社會的關懷。於年度內，我們的義工參加了超過70項慈善活動，當中包括籌款活動、探訪老人院及協助殘疾人士。員工的社區服務時數合計達4,930小時。有23名員工獲得個人金、銀、銅嘉許狀，其服務社區的貢獻獲得嘉許。

Voluntary Work

Staff volunteers showed their on-going commitment and concern for the community by taking part in more than 70 charity events during the year. These included fund raising efforts, visiting the homes of the elderly and assisting the disabled. A total of 4,930 community service hours were spent and 23 staff received individual Gold, Silver and Bronze awards in recognition of their dedication to voluntary work for the community.



本署員工熱心參與義務工作。
Staff volunteers of WSD are enthusiastic in voluntary work.

Awards and Recognition

本署在本港及國際均獲得多項殊榮。我們在服務、創新及人力發展方面的工作皆獲得肯定。

Awards and Recognition

The Department has received a number of awards, both locally and globally, that recognise our work in the areas of service, innovation and manpower development.

本署於二零一六／一七年度獲得的獎項包括：

The awards received by the Department in 2016/17 include:

1. 二零一六年度申訴專員嘉許獎公職人員獎

1. The Ombudsman's Awards 2016 for Officers of Public Organisations



2. 綠建環評新建建築(1.2版)暫定金級—上水維修廠

2. BEAM Plus Scheme (Provisional Gold rating) – Sheung Shui maintenance depot

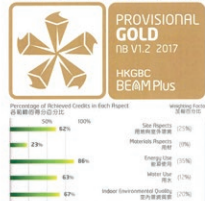


hereby certifies that 特此證明

Sheung Shui Maintenance Depot 上水維修廠

30 Fu Tai Ru Road, Sheung Shui, New Territories
上水虎地崗道30號

has achieved Provisional Gold rating under BEAM Plus V1.2
獲得綠建環評新建建築(1.2版)暫定金級



4 Credits
4 分

Sr Wong Kai
Chairman
Hong Kong Green Building Council Limited
香港綠色建築議會有限公司主席
黃志強

6 February 2017



3. AEC Excellence Awards 2016 – 最佳小型項目獎 3. AEC Excellence Awards 2016 – Small Project Winner



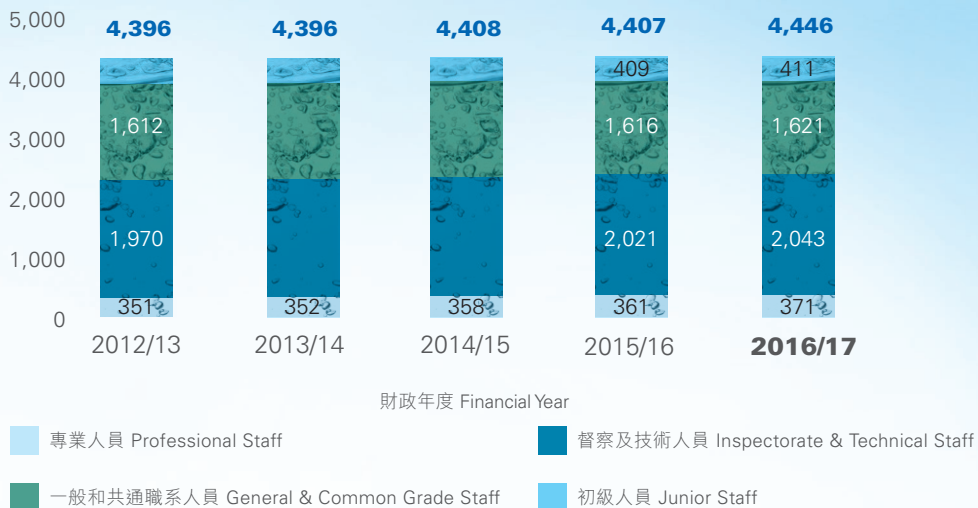
4. Autodesk香港建築信息模擬設計大獎 2016 – 榮譽嘉許 4. Autodesk Hong Kong BIM Awards 2016 – Honorable Mentions



5. 二零一六至一七年度香港公益金「僱員募捐計劃」：
— 政府部門最高籌款獎第三名 5. The Community Chest's Employee Contribution Programme 2016/17:
— CARE Scheme (Civil Service Category) – 3rd Highest Donation

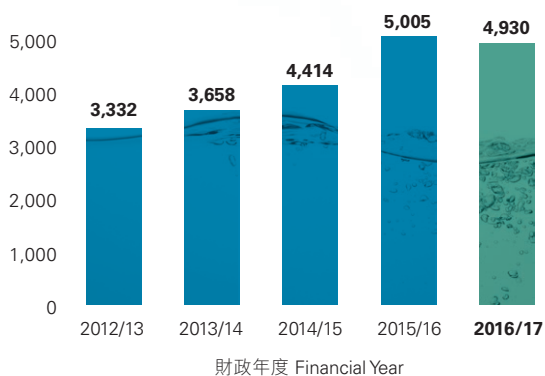
員工編制

Staff Establishment



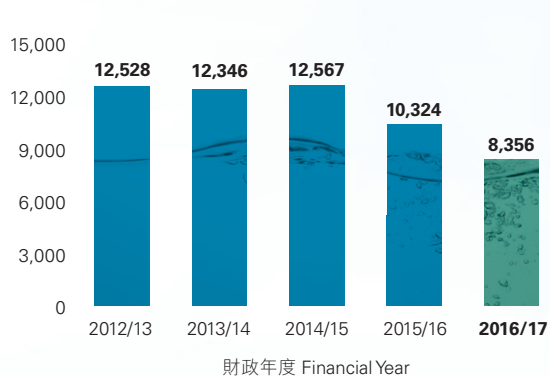
水務署義工工時數目

No. of Man-hours for WSD Volunteers



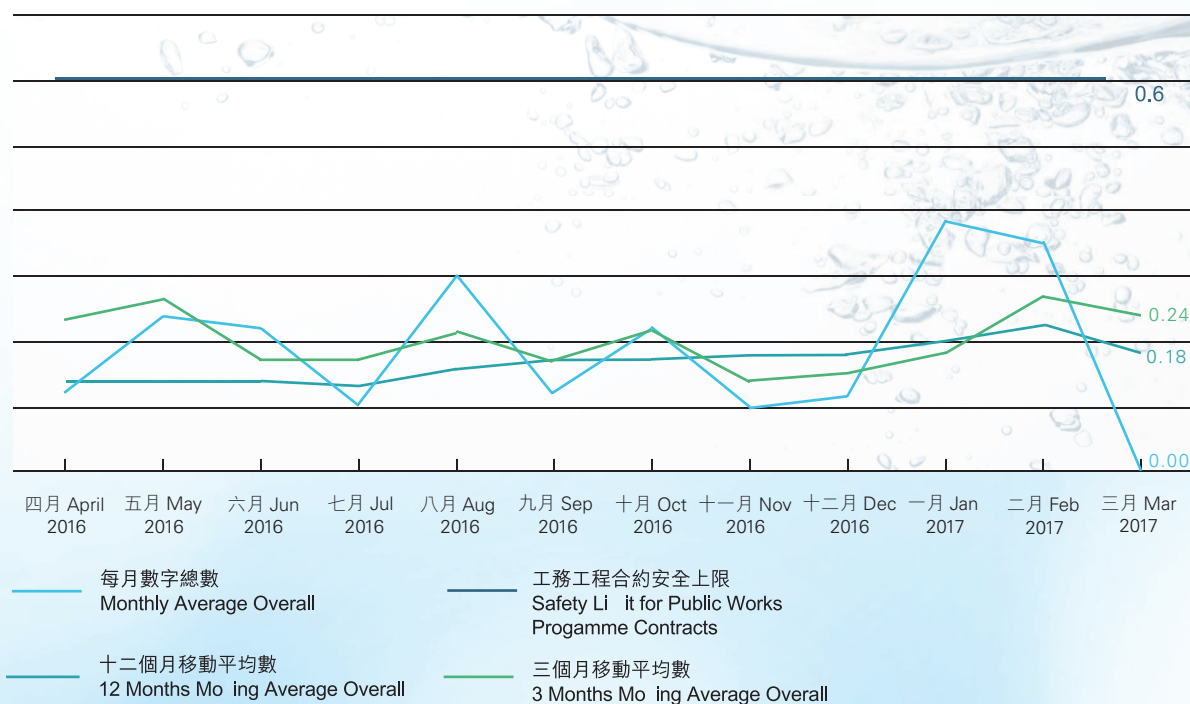
培訓工日

Training Man-days



二零一六／一七年度水務工程合約意外率

Accident Rate for Waterworks Contracts 2016/17



附錄 Appendices

附錄一 Appendix I

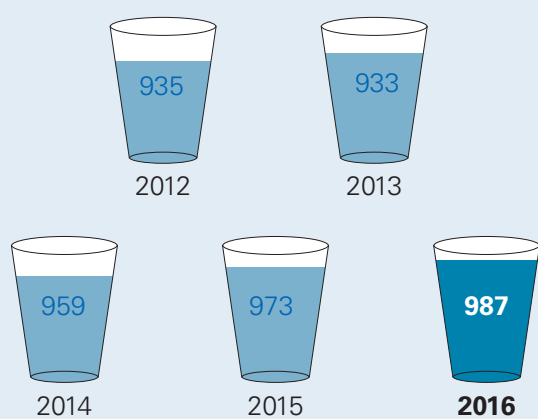
全年食水耗用量及人均用水量*

Annual Fresh Water Consumption and Per Capita Consumption*

全年食水用水量

Annual Fresh Water Consumption

(百萬立方米 million cubic metres)

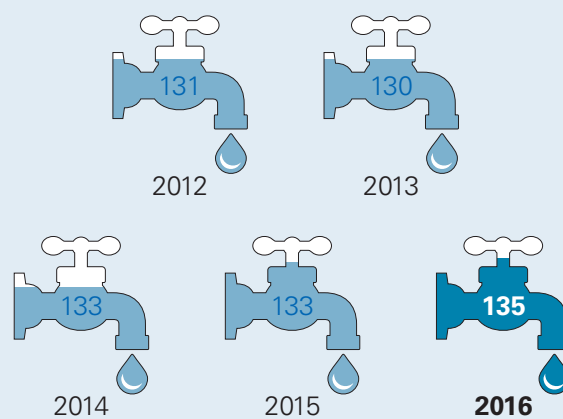


年份 Year

人均用水量

Per Capita Consumption

(立方米／每年 cubic metres per year)



年份 Year

附錄二 Appendix II

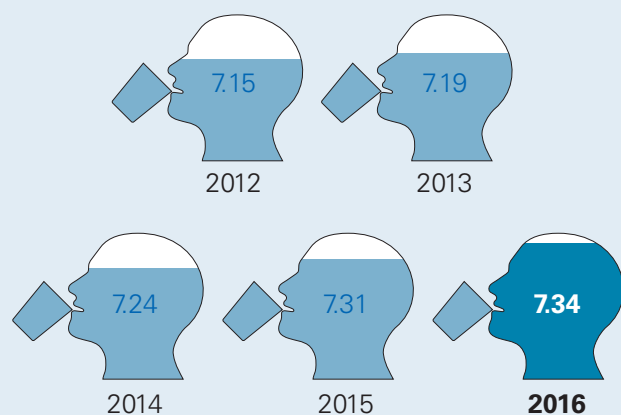
全港人口及獲食水供應人口

Population in Hong Kong and Population Served with Fresh Water

全港人口*

Population in Hong Kong*

(百萬 million)

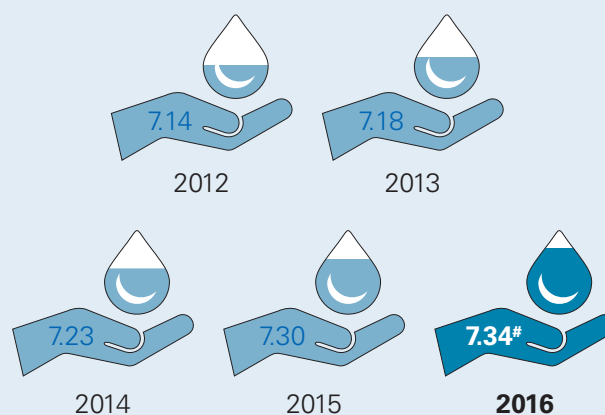


年份 Year

獲食水供應人口

Population Served with Fresh Water

(百萬 million)



年份 Year

* 根據政府統計處公布的年中人口數字計算而得。

* 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.

附錄三 Appendix III

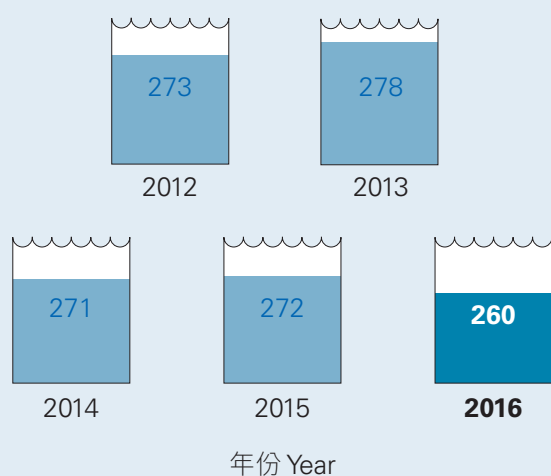
全年海水耗用量及獲海水供應人口

Annual Sea Water Consumption and Population Served with Sea Water

全年海水用水量

Annual Sea Water Consumption

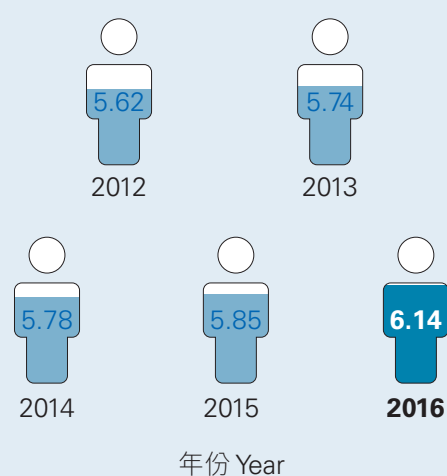
(百萬立方米 million cubic metres)



獲海水供應人口

Population Served with Sea Water

(百萬 million)



附錄四 Appendix IV

客戶查詢及申請服務的統計數字

Statistics on Customer Enquiries and Requests for Services

個案數目 Number of Requests	年份 Year				
	2012	2013	2014	2015	2016
書面查詢／申請 Letter	295,016	212,566	205,630	215,428	225,097
電話查詢／申請 Telephone	896,956	897,424	850,050	833,284	842,414
親身查詢／申請 Counter	395,238	329,767	317,851	253,698	290,368
總數 Total	1,587,210	1,439,757	1,373,531	1,302,410	1,357,879

附錄五 Appendix V

客戶投訴的統計數字

Statistics on Customer Complaints

投訴數目 Number of Complaints	年份 Year				
	2012	2013	2014	2015	2016
與帳戶有關的投訴# Account-Related#	135	136	149	140	142
與帳戶無關的投訴 Non-Account-Related	6,546	6,537	7,390	7,787	7,767
總數 Total	6,681	6,673	7,539	7,927	7,909

由區議會、立法會及申訴專員轉介的與帳戶有關的投訴。

Account-related complaints from District Councils, LegCo and Ombudsman.

附錄六 Appendix VI

二零一六／一七年度繳費方式的統計數字

Statistics on Mode of Payment 2016/17

繳費方式 Mode of Payment	交易數目 No. of Cases	百分比 Percentage (%)
親身繳費 In person	3,845,500	50.3
郵寄 By post	84,200	1.1
自動轉帳 Autopay	882,800	11.6
繳費靈 Payment by Phone Service (PPS)	769,000	10.1
自動櫃員機 ATM	379,700	5.0
網上繳費 Internet	1,677,700	21.9
總數 Total	7,638,900	100

附件

Annexes

附件 — Annex I

水務署向公眾提供的刊物目錄

除另有註明外，所有刊物均可在水務署網頁瀏覽，並備有中英文本。

刊物

可在網上政府書店購買的刊物

- 《香港水務》
- 《香港水務設施條例》及《水務設施規例》

小冊子及單張

在各客戶諮詢中心免費派發的小冊子或單張

- 服務承諾
- 水務簡訊
- 用戶指南
- 食水系統維修指引
- 大潭水務文物徑
- 清洗食水水箱指引
- 耗水量偏高用戶須知
- 緊記僱用持牌水喉匠
- 水的真相
- 香港水塘釣魚樂
- 如何申請供水
- 安裝家庭用貯水式電熱水器須知
- 私人屋邨／樓宇的供水問題及內部供水系統的維修保養
- 水管裝置識得揀 銅喉焊接合規格 食水安全簡單易辦
- 水錶測試實驗室
- 正確使用大廈消防喉轆
- 大廈優質供水認可計劃－食水(2.0版)
- 大廈優質供水認可計劃－沖廁水
- 根據香港法例第102章水務設施規例第30條規定的水錶測試
- 使用固定熱水罈須知
- 電子帳單登記易 綠色生活好EASY
- 濾水器的使用*
- 供水故障投訴
- 香港的食水處理及水質控制

List Of WSD Publications Available To The Public

All publications are available on the WSD homepage and in both English and Chinese except where indicated.

Publications

Available at the online Government Bookstore

- Hong Kong's Water
- Waterworks Ordinance and Regulations

Pamphlets/Leaflets/Booklets

Available for free at all customer enquiry centres

- Performance Pledge
- Waterlink Newsletter
- Consumer Guide Book
- Fresh Water Plumbing Maintenance Guide
- Tai Tam Waterworks Heritage Trail
- A Guide to Cleansing of Fresh Water Storage Tanks
- Advice for Consumers on High Consumption
- Employment of Licensed Plumbers
- Facts About Water
- Fun of Fishing in Hong Kong Reservoirs
- How to Apply for Water Supply
- Installation of Electric Thermal Storage Type Water Heater for Domestic Purpose
- Maintenance of Water Supply Systems in Private Housing Estates/Buildings
- Make smart choices of pipes and fittings Connect copper pipes with compliant solder Enjoy safe drinking water with ease
- Meter Testing Laboratory
- Proper Use of Fire Fighting Hose Reels in Buildings
- Quality Water Supply Scheme for Buildings – Fresh Water (Plus)
- Quality Water Supply Scheme for Buildings – Flushing Water
- Testing of Meters under Waterworks Regulation 30, Chapter 102
- Tips for Using Wall-mounted Dispensers
- Register e-Bill for EASY Green Life
- The Use of Water Purifiers/Filters by Consumers*
- Water Supply Technical Fault Complaints
- Water Treatment and Quality Control in Hong Kong

- 飲食業(食肆)廚房申請供水指引*
- 電子服務*
- 水務署部門單張*

* 未有在水務署網頁提供。

可要求索取或在水務署總部提供的小冊子或單張

- 香港的全面水資源管理
- 紅潮對沖廁海水水質的影響
- 小水點的奇妙旅程
- 馬鞍山濾水廠
- 牛潭尾濾水廠
- 北港濾水廠
- 沙田濾水廠
- 小蠔灣濾水廠
- 大埔濾水廠
- 大潭篤原水抽水站
- 東江水供港50周年巡迴展覽
- 切勿非法取水
- 「WSD Mobile App」智能電話應用程式*
- 飲食業用水效益最佳實務指引
- 酒店業用水效益最佳實務指引
- 水資源教育中心
- 「珍惜水源 切勿污染」海報及單張
- 「『齊來慳水十公升』運動」海報及單張
- 「切勿安裝違規淡水冷卻塔」海報及單張*
- 「用水小貼士－如何降低攝入鉛的風險」海報及單張
- 「節約用水 整合式教育計劃」海報及單張
- 「節約用水 從家開始」海報及單張(以中文、英文、印尼文、菲律賓文和泰文五種語言印製)
- 用戶責任
- 「沖廁用水嚴禁作其他用途」警告字樣標貼紙
- 「消防用水嚴禁作其他用途」警告字樣標貼紙

- Guidelines on Water Supply Application for Food Business (Restaurant/Kitchen)*
- Electronic Services*
- Departmental Leaflet*

* Not available on WSD homepage

Available Upon Request Or Available At WSD Headquarters

- Total Water Management in Hong Kong
- Effect of Red Tides on Seawater for Toilet Flushing
- Little Drop's Marvellous Journey
- Ma On Shan Water Treatment Works
- Ngau Tam Mei Water Treatment Works
- Pak Kong Water Treatment Works
- Sha Tin Water Treatment Works
- Siu Ho Wan Water Treatment Works
- Tai Po Water Treatment Works
- Tai Tam Tuk Raw Water Pumping Station
- Roving exhibition for 50th Anniversary of Dongjiang water supply to Hong Kong
- Unlawful Taking of Water is Prohibited
- WSD Mobile App*
- Best Practice Guidelines for Water Usage in Catering Industry
- Best Practice Guidelines for Water Usage in Hotel Industry
- Water Resources Education Centre
- Poster and Leaflet on "Treasure our water Do not contaminate"
- Poster and Leaflet on "Let's Save 10L Water" Campaign
- Poster and Leaflet on "Do not Install Unauthorized Fresh Water Cooling Tower"*
- Poster and Leaflet on "Water Use Tips - how to reduce the risk of lead intake"
- Poster and Leaflet on "Integrated Education Programme on Water Conservation (IEP)"
- Poster and Leaflet on "Water Conservation Starts from Home" in 5 Languages (Chinese/English/Indonesian/Tagalog/Thai)
- Consumer's Responsibility
- Warning Sticker – Misuse of Flushing Water
- Warning Sticker – Misuse of Fire Services Water

- 「珍惜每點滴」標貼
- 「節約用水小貼士」標貼
- 「定期檢查維修 慎防食水滲漏」海報
- 「珍惜點滴 積聚未來」海報
- 「參與節約用水 一齊縮短沐浴時間」海報
- 「電子帳單登記易 綠色生活好EASY」海報
- 「水管裝置識得揀 銅喉焊接合規格 食水安全簡單易辦」海報
- 「沖廁用海水 環保慳食水」單張
- 「強制使用已註冊用水效益標籤計劃的節水裝置」單張*
- 發給業界的「用水效益標籤計劃－沐浴花灑」單張*
- 發給公眾的「用水效益標籤計劃－沐浴花灑」單張
- 發給業界的「用水效益標籤計劃－水龍頭」單張*
- 發給公眾的「用水效益標籤計劃－水龍頭」單張
- 發給業界的「用水效益標籤計劃－洗衣機」單張*
- 發給公眾的「用水效益標籤計劃－洗衣機」單張
- 發給業界的「用水效益標籤計劃－小便器用具」單張*
- 發給公眾的「用水效益標籤計劃－節流器」單張
- 發給公眾的「選購貼有用水效益標籤的節流器」單張
- 發給業界的「用水效益標籤計劃－節流器」單張*
- Sticker – “Treasure every drop”
- Sticker – “Water Saving Tips”
- Poster on “Inspect and maintain plumbing regularly to prevent water leaks”
- Poster on “Save Water for the Future Every Drop Counts”
- Poster on “Save Water Take Shorter Showers”
- Poster on “Register e-Bill for EASY Green Life”
- Poster on “Make smart choices of pipes and fittings Connect copper pipes with compliant solder Enjoy safe drinking water with ease”
- Leaflet on “Save Fresh Water Save the Environment Use Salt Water for Flushing”
- Leaflet on “Mandatory Use of Water Efficiency Labelling Scheme (WELS)”*
- Leaflet to Trade on “Water Efficiency Labelling Scheme – Showers for Bathing”*
- Leaflet to Public on “Water Efficiency Labelling Scheme – Showers for Bathing”
- Leaflet to Trade on “Water Efficiency Labelling Scheme – Water Taps”*
- Leaflet to Public on “Water Efficiency Labelling Scheme – Water Taps”
- Leaflet to Trade on “Water Efficiency Labelling Scheme – Washing Machines”*
- Leaflet to Public on “Water Efficiency Labelling Scheme – Washing Machines”
- Leaflet to Trade on “Water Efficiency Labelling Scheme – Urinal Equipment”*
- Leaflet to Public on “Water Efficiency Labelling Scheme on Flow Controllers”
- Leaflet to Public on “Choose Flow Controllers with WELS labels”
- Leaflet to Trade on “Water Efficiency Labelling Scheme on Flow Controllers”*

* 未有在水務署網頁提供。

* Not available on WSD homepage

只在水務署網頁提供的刊物

- 《樓宇內部供水設備防銹蝕喉管物料－一般資料》
- 《樓宇內部供水設備防銹蝕喉管物料－安裝須知》
- 《香港水務標準規格－樓宇內水管裝置》
- 各水務署通函
- 《樓宇水管裝置手冊》
- 水務便覽
- 《水務署年報》

Available On WSD Homepage Only

- General Information on the Use of Different Types of (Corrosion Resistant Pipe) Materials as Inside Service in Buildings
- Installation Notes of Different Types of Corrosion Resistant Pipe Materials as Inside Service in Buildings
- Hong Kong Waterworks Standard Requirements for Plumbing Installation in Buildings
- WSD Circular Letters
- Handbook on Plumbing Installation for Buildings
- Key Facts
- Annual Report – Water Supplies Department

附件二 Annex II

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

- 旺角客戶諮詢中心*
旺角洗衣街128號地下

新界區

- 大埔客戶諮詢中心
大埔汀角路1號大埔政府合署4樓
- 沙田客戶諮詢中心
沙田上禾輦路1號沙田政府合署3樓
- 屯門客戶諮詢中心
屯門屯喜路1號屯門政府合署7樓

註：

- * 旺角客戶諮詢中心將於二零一八年四月三日(星期二)搬遷至大角咀鐵樹街41號地下。

Customer Enquiry Centres

Hong Kong

- **Wan Chai Customer Enquiry Centre**
1/F, Immigration Tower, 7 Gloucester Road, Wan Chai

Kowloon

- **Mong Kok Customer Enquiry Centre***
G/F, 128 Sai Yee Street, Mong Kok

New Territories

- **Tai Po Customer Enquiry Centre**
4/F, Tai Po Government Offices, 1 Ting Kok Road, Tai Po
- **Sha Tin Customer Enquiry Centre**
3/F, Sha Tin Government Offices, 1 Sheung Wo Che Road, Sha Tin
- **Tuen Mun Customer Enquiry Centre**
7/F, Tuen Mun Government Offices, 1 Tuen Hi Road, Tuen Mun

Note:

- * The Mong Kok Customer Enquiry Centre will be relocated to G/F, No. 41 Tit Shu Street, Tai Kok Tsui with effect from 3rd April 2018 (Tuesday).

二零一六年四月至二零一七年三月的食水水質

Drinking Water Quality for the Period April 2016 – March 2017

甲部. 微生物含量

Part A. Microbiological quality

一般事項

General Points

- 自二零一二年八月起，水務署便按照世界衛生組織在二零一一年制定的《飲用水水質準則》(世衛2011)，監測香港的食水水質。
- 我們在濾水廠、配水庫、供水接駁點和公眾可達的用戶水龍頭抽取食水樣本。
- 在這段期間抽取的食水樣本測試結果顯示，這段期間內的食水水質符合世衛在二零一一年制定的《飲用水水質準則》。
- Since August 2012, we have been monitoring the quality of our drinking water supply according to the World Health Organization's (WHO) Guidelines for Drinking-water Quality (2011).
- Samples were taken at water treatment works, service reservoirs, connection points and publicly accessible consumer taps.
- Based on water samples taken during this period, the testing results revealed that the drinking water quality for this period complied with the World Health Organization's Guidelines for Drinking-water Quality (2011).

參數 Parameter	單位 Unit	監測數據 Monitoring Data (04/2016 – 03/2017)			世衛2011 準則值 WHO 2011 Guideline Value	達標 Compliance
		最低值 Minimum	最高值 Maximum	平均值 Average		
埃希氏大腸桿菌 E. coli	菌落數* /100毫升 cfu* per 100 mL	0	0	0	0	√
總大腸桿菌群# Total Coliforms#	菌落數* /100毫升 cfu* per 100 mL	0	0	0	–	–
隱孢子蟲® Cryptosporidium®	卵囊數量/公升 no. of oocyst per L	0.00	0.00	0.00	–	–
賈第蟲® Giardia®	孢囊數量/公升 no. of cyst per L	0.00	0.00	0.00	–	–

註釋：

(1) 以上是有關食水水質的摘要報告。

(2) 各數值是根據水務署水質科學部現行品質保證指引所訂的要求而編製。

* 菌落數

世衛2011並沒有為總大腸桿菌群制訂與健康有關的準則值。

® 雖然世衛沒有就食水所含的隱孢子蟲或賈第蟲制訂與健康有關的準則值，但水務署亦有監測隱孢子蟲及賈第蟲於食水中的含量。每公升0.00的監測數據代表在不少於100公升經處理的食水樣本中，檢測不到卵囊或孢囊。

Note:

(1) This is a summary report on drinking water quality.

(2) All values are compiled in accordance with requirements stipulated by the current quality assurance protocol of the Water Science Division of WSD.

* Colony forming unit (cfu)

WHO 2011 has not established health-related GV for Total Coliforms.

® Although the WHO has not established any health-related GV for Cryptosporidium or Giardia in drinking water, we also monitor Cryptosporidium and Giardia in our drinking water. The monitoring data of 0.00 per litre represents no oocyst or cyst detected in a volume of not less than 100 litres of treated water sample.

乙部. 世界衛生組織在二零一一年制定的《飲用水水質準則》中所列對健康有影響的化學物質 Part B. Chemicals of health significance as described by The World Health Organization's Guidelines for Drinking-water Quality 2011

一般事項

General Points

- 自二零一二年八月起，水務署已按照世界衛生組織在二零一一年制定的《飲用水水質準則》(世衛2011)來監測香港的食水水質。
- 世衛建議將部分的準則值定為暫定準則值(請參閱附註三)。
- 我們在濾水廠、配水庫、供水接駁位置和公眾可達的用戶水龍頭抽取食水樣本。
- 在這段期間抽取的食水樣本測試結果顯示，這段期間內的食水水質符合世衛在二零一一年制定的《飲用水水質準則》。
- Since August 2012, we have been monitoring the quality of our drinking water supply according to the World Health Organization's (WHO) Guidelines for Drinking-water Quality (2011).
- Some GVs are recommended by WHO as provisional GVs. (See Note 3)
- Samples were taken at water treatment works, service reservoirs, connection points and publicly accessible consumer taps.
- Based on water samples taken during this period, the testing results revealed that the drinking water quality for this period complied with the World Health Organization's Guidelines for Drinking-water Quality (2011).

參數 Parameter	單位 Unit	監測數據 Monitoring Data (04/2016 - 03/2017)			世衛2011 準則值 WHO 2011 Guideline Value	達標 Compliance
		最低值 Minimum	最高值 Maximum	平均值 Average		
丙烯酰胺 Acrylamide	微克／公升 µg/L	< 0.4	< 0.4	< 0.4	0.5	√
草不綠 Alachlor	微克／公升 µg/L	< 5.0	< 5.0	< 5.0	20	√
涕滅威 Aldicarb	微克／公升 µg/L	< 2.5	< 2.5	< 2.5	10	√
艾氏劑和異艾氏劑 Aldrin and 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 (A,T)	√
莠去津和其氯均三嗪 代謝物 Atrazine and its chloro- s-triazine metabolites	微克／公升 µg/L	< 25	< 25	< 25	100	√
鋇 Barium	毫克／公升 mg/L	0.003	0.018	0.013	0.7	√
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	< 0.0020	< 0.0020	< 0.0020	0.7	√
硼 Boron	毫克／公升 mg/L	< 0.02	0.04	0.02	2.4	√
溴酸鹽 Bromate	微克／公升 µg/L	< 2.5	< 2.5	< 2.5	10 (A,T)	√

參數 Parameter	單位 Unit	監測數據 Monitoring Data (04/2016 03/2017)			世衛2011 準則值 WHO 2011 Guideline Value	達標 Compliance
		最低值 Minimum	最高值 Maximum	平均值 Average		
一溴二氯甲烷 Bromodichloromethane	微克／公升 µg/L	< 15	17	< 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	√
夫喃丹 Carbofuran	微克／公升 µg/L	< 1.2	< 1.2	< 1.2	7	√
四氯化碳 Carbon tetrachloride	微克／公升 µg/L	< 0.50	< 0.50	< 0.50	4	√
氯酸鹽 Chlorate	微克／公升 µg/L	< 175	< 175	< 175	700 (D)	√
氯丹 Chlordane	微克／公升 µg/L	< 0.050	< 0.050	< 0.050	0.2	√
氯 Chlorine	毫克／公升 mg/L	< 0.1	1.4	0.7	5 (C)	√
亞氯酸鹽 Chlorite	微克／公升 µg/L	< 50	< 50	< 50	700 (D)	√
氯仿 Chloroform	微克／公升 µg/L	< 50	< 50	< 50	300	√
綠麥隆 Chlorotoluron	微克／公升 µg/L	< 7.5	< 7.5	< 7.5	30	√
毒死蜱 Chlorpyrifos	微克／公升 µg/L	< 7.5	< 7.5	< 7.5	30	√
鉻 Chromium	毫克／公升 mg/L	< 0.001	< 0.001	< 0.001	0.05 (P)	√

參數 Parameter	單位 Unit	監測數據 Monitoring Data (04/2016 03/2017)			世衛2011 準則值 WHO 2011 Guideline Value	達標 Compliance
		最低值 Minimum	最高值 Maximum	平均值 Average		
銅 Copper	毫克／公升 mg/L	< 0.003	0.039	< 0.003	2	√
青乙酰肼 Cyanazine	微克／公升 µg/L	< 0.15	< 0.15	< 0.15	0.6	√
2,4-滴(或2,4-二氯苯氧 乙酸) 2,4-D (or 2,4-dichlorophenoxyacetic acid)	微克／公升 µg/L	< 7.5	< 7.5	< 7.5	30	√
2,4-滴丁酸(或4-(2,4-二 氯苯氧基)丁酸) 2,4-DB (or 4-(2,4-dichlorophenoxy) butyric acid)	微克／公升 µg/L	< 22	< 22	< 22	90	√
滴滴涕和代謝物 DDT and metabolites	微克／公升 µg/L	< 0.50	< 0.50	< 0.50	1	√
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	< 25	< 25	< 25	70	√
二溴氯甲烷 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	< 0.10	< 0.10	< 0.10	0.4 (P)	√
二氯乙酸鹽 Dichloroacetate	微克／公升 µg/L	< 12	14	< 12	50 (D)	√

參數 Parameter	單位 Unit	監測數據 Monitoring Data (04/2016 03/2017)			世衛2011 準則值 WHO 2011 Guideline Value	達標 Compliance
		最低值 Minimum	最高值 Maximum	平均值 Average		
二氯乙腈 Dichloroacetonitrile	微克／公升 µg/L	< 5.0	< 5.0	< 5.0	20 (P)	√
1,2-二氯苯 1,2-Dichlorobenzene	微克／公升 µg/L	< 250	< 250	< 250	1000 (C)	√
1,4-二氯苯 1,4-Dichlorobenzene	微克／公升 µg/L	< 75	< 75	< 75	300 (C)	√
1,2-二氯乙烷 1,2-Dichloroethane	微克／公升 µg/L	< 7.5	< 7.5	< 7.5	30	√
1,2-二氯乙烯 1,2-Dichloroethene	微克／公升 µg/L	< 12	< 12	< 12	50	√
二氯甲烷 Dichloromethane	微克／公升 µg/L	< 5.0	< 5.0	< 5.0	20	√
1,2-二氯丙烷 1,2-Dichloropropane	微克／公升 µg/L	< 5.0	< 5.0	< 5.0	40 (P)	√
1,3-二氯丙烯 1,3-Dichloropropene	微克／公升 µg/L	< 5.0	< 5.0	< 5.0	20	√
滴丙酸(或2,4-滴丙酸) Dichlorprop (or 2,4-DP)	微克／公升 µg/L	< 25	< 25	< 25	100	√
樂果 Dimethoate	微克／公升 µg/L	< 1.5	< 1.5	< 1.5	6	√
1,4-二噁烷 1,4-Dioxane	微克／公升 µg/L	< 12.5	< 12.5	< 12.5	50	√
乙二胺四乙酸 Edetic acid (EDTA)	微克／公升 µg/L	< 50	< 50	< 50	600	√
異狄氏劑 Endrin	微克／公升 µg/L	< 0.15	< 0.15	< 0.15	0.6	√

參數 Parameter	單位 Unit	監測數據 Monitoring Data (04/2016 03/2017)			世衛2011 準則值 WHO 2011 Guideline Value	達標 Compliance
		最低值 Minimum	最高值 Maximum	平均值 Average		
表氯醇 Epichlorohydrin	微克／公升 µg/L	< 0.4	< 0.4	< 0.4	0.4 (P)	√
乙苯 Ethylbenzene	微克／公升 µg/L	< 75	< 75	< 75	300 (C)	√
2,4,5-涕丙酸 Fenoprop (or 2,4,5-TP)	微克／公升 µg/L	< 2.2	< 2.2	< 2.2	9	√
氟化物 Fluoride	毫克／公升 mg/L	0.20	0.65	0.48	1.5	√
六氯丁二烯 Hexachlorobutadiene	微克／公升 µg/L	< 0.15	< 0.15	< 0.15	0.6	√
經基化莠去津 Hydroxyatrazine	微克／公升 µg/L	< 50	< 50	< 50	200	√
異丙隆 Isoproturon	微克／公升 µg/L	< 2.2	< 2.2	< 2.2	9	√
鉛 Lead	毫克／公升 mg/L	< 0.001	0.001	< 0.001	0.01 (A,T)	√
林丹 Lindane	微克／公升 µg/L	< 0.50	< 0.50	< 0.50	2	√
2-甲基-4-氯苯氧基乙酸 MCPA (or 4-(2-methyl-4-chlorophenoxy) acetic acid)	微克／公升 µg/L	< 2.0	< 2.0	< 2.0	2	√
2-甲基-4-氯丙酸 Mecoprop (or MCPP)	微克／公升 µg/L	< 2.5	< 2.5	< 2.5	10	√
汞 Mercury	毫克／公升 mg/L	< 0.00005	< 0.00005	< 0.00005	0.006	√

參數 Parameter	單位 Unit	監測數據 Monitoring Data (04/2016 03/2017)			世衛2011 準則值 WHO 2011 Guideline Value	達標 Compliance
		最低值 Minimum	最高值 Maximum	平均值 Average		
甲氧滴滴涕 Methoxychlor	微克／公升 µg/L	< 5.0	< 5.0	< 5.0	20	√
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（總） Microcystin-LR (total)	微克／公升 µg/L	< 0.5	< 0.5	< 0.5	1 (P)	√
禾草特 Molinate	微克／公升 µg/L	< 1.5	< 1.5	< 1.5	6	√
一氯胺 Monochloramine	毫克／公升 mg/L	< 1.0	< 1.0	< 1.0	3	√
一氯醋酸鹽 Monochloroacetate	微克／公升 µg/L	< 10	< 10	< 10	20	√
鎳 Nickel	毫克／公升 mg/L	< 0.001	0.016	0.006	0.07	√
硝酸鹽（以NO ₃ 計） Nitrate (as NO ₃)	毫克／公升 mg/L	< 2.5	12	4.0	50	√
次氨基三乙酸 Nitrilotriacetic acid	微克／公升 µg/L	< 50	< 50	< 50	200	√
亞硝酸鹽（以NO ₂ 計） Nitrite (as NO ₂)	毫克／公升 mg/L	< 0.004	0.011	< 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	√
二甲戊樂靈 Pendimethalin	微克／公升 µg/L	< 5.0	< 5.0	< 5.0	20	√
五氯酚 Pentachlorophenol	微克／公升 µg/L	< 2.2	< 2.2	< 2.2	9 (P)	√

參數 Parameter	單位 Unit	監測數據 Monitoring Data (04/2016 03/2017)			世衛2011 準則值 WHO 2011 Guideline Value	達標 Compliance
		最低值 Minimum	最高值 Maximum	平均值 Average		
硒 Selenium	毫克／公升 mg/L	< 0.003	< 0.003	< 0.003	0.04 (P)	√
西瑪三嗪 Simazine	微克／公升 µg/L	< 0.50	< 0.50	< 0.50	2	√
二氯異氰尿酸鈉 (以氰尿酸計) Sodium dichloroisocyanurate (as cyanuric acid)	毫克／公升 mg/L	< 10	< 10	< 10	40	√
苯乙烯 Styrene	微克／公升 µg/L	< 5.0	< 5.0	< 5.0	20 (C)	√
2,4,5-涕(或2,4,5-三氯苯氧 乙酸) 2,4,5-T (or 2,4,5-trichlorophenoxy acetic acid)	微克／公升 µg/L	< 2.2	< 2.2	< 2.2	9	√
特丁律 Terbutylazine	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 (C)	√
三氯乙酸鹽 Trichloroacetate	微克／公升 µg/L	< 25	< 25	< 25	200	√
三氯乙烯 Trichloroethene	微克／公升 µg/L	< 18	< 18	< 18	20 (P)	√
2,4,6-三氯酚 2,4,6-Trichlorophenol	微克／公升 µg/L	< 50	< 50	< 50	200 (C)	√

參數 Parameter	單位 Unit	監測數據 Monitoring Data (04/2016 03/2017)			世衛2011 準則值 WHO 2011 Guideline Value	達標 Compliance
		最低值 Minimum	最高值 Maximum	平均值 Average		
氟樂靈 Trifluralin	微克／公升 µg/L	< 5.0	< 5.0	< 5.0	20	√
鈾 Uranium	毫克／公升 mg/L	< 0.0002	0.0005	< 0.0002	0.03 (P)	√
氯乙烯 Vinyl chloride	微克／公升 µg/L	< 0.2	< 0.2	< 0.2	0.3	√
二甲苯 Xylenes	微克／公升 µg/L	< 125	< 125	< 125	500 (C)	√

註釋：

(1) 以上是有關食水水質的摘要報告。

(2) 各數值是根據水務署水質科學部現行品質保證指引所訂的要求而編製。

(3) 根據世衛2011：

P = 暫定準則值，因為健康數據資料存在不確定性。

T = 暫定準則值，因為計算所得準則值低於實際處理方法或水源保護等所能達到的水平。

A = 暫定準則值，因為計算所得準則值低於所能達到的定量水平。

D = 暫定準則值，因為消毒程序可能引致超過準則值。

C = 當該物質濃度等於或低於健康基礎準則值時，可能導致水的外觀、味道或氣味改變，引起用戶投訴。

Note:

(1) This is a summary report on drinking water quality.

(2) All values are compiled in accordance with requirements stipulated by the current quality assurance protocol of the Water Science Division of WSD.

(3) According to WHO 2011:

P = provisional guideline value because of uncertainties in the health database.

T = provisional guideline value as calculated guideline value is below the level that can be achieved through practical treatment methods, source protection, etc.

A = provisional guideline value as calculated guideline value is below the achievable quantification level.

D = provisional guideline value as disinfection may result in the guideline value being exceeded.

C = concentrations of the substance at or below the health-based guideline value may affect the appearance, taste or odour of the water, leading to consumer complaints.

丙部. 輻射水平 Part C Radiological quality

一般事項 General Points

- 自二零一二年八月起，水務署已按照世界衛生組織在二零一一年制定的《飲用水水質準則》(世衛2011)來監測香港的食水水質。
- 按照世衛建議，食水中的總 α 及總 β 活度的輻射篩查水平分別為每公升0.5貝可和每公升1.0貝可，當食水的放射性活度低於篩查水平，便不需要對個別放射性核素進行調查或詳細分析。
- 我們在濾水廠、分配網絡和公眾可達的用戶水龍頭抽取食水樣本。
- 根據在這段期間抽取的食水樣本，食水的輻射水平遠低於世衛2011建議總 α 及總 β 活度的篩查水平，而且可安全飲用。
- Since August 2012, we have been monitoring the quality of our drinking water supply according to the World Health Organization's (WHO) Guidelines for Drinking-water Quality (2011).
- According to the recommendation of the WHO, the screening levels for radiation in drinking water are 0.5 Bq/L for gross alpha activity and 1.0 Bq/L for gross beta activity respectively, below which no further investigation or detailed analysis for specific radionuclides is required.
- Samples were taken at water treatment works, connection points and publicly accessible consumer taps.
- Based on water samples taken during this period, the radioactivity level of drinking water was well below the screening levels for gross alpha and gross beta activities recommended by the WHO 2011 and was safe for consumption.

參數 Parameter	單位 Unit	監測數據 Monitoring Data (04/2016 - 03/2017)			世衛2011 篩查水平 WHO 2011 Screening Level	低於篩查 水平 Below Screening Level
		最低值 Minimum	最高值 Maximum	平均值 Average		
總 α 活度 Gross alpha activity	貝可／公升 Bq/L	< 0.1	< 0.1	< 0.1	0.5	√
總 β 活度 Gross beta activity	貝可／公升 Bq/L	< 0.2	< 0.2	< 0.2	1.0	√

註釋：

- 以上是有關食水水質的摘要報告。
- 各數值是根據水務署水質科學部現行品質保證指引所訂的要求而編製。
- 總 α 及總 β 活度的報告值分別設定為相應世衛篩查水平的20%。

Note:

- This is a summary report on drinking water quality.
- All values are compiled in accordance with requirements stipulated by the current quality assurance protocol of the Water Science Division of WSD.
- Reporting values for gross alpha and gross beta activities are set at 20% of their respective WHO screening levels.

丁部. 其他參數
Part D. Other parameters

參數 Parameter	單位 Unit	監測數據 Monitoring Data (04/2016 03/2017)		
		最低值 Minimum	最高值 Maximum	平均值 Average
酸鹼值(水溫25°C時) pH at 25°C	pH	6.8	9.2	8.5
色度 Colour	黑曾色度單位 Hazen unit	< 3	< 3	< 3
混濁度 Turbidity	NTU	< 0.1	3.0	0.3
導電率(水溫25°C時) Conductivity at 25°C	μS/cm	17	211	114
溫度 Temperature	°C	13.0	33.4	24.1
總鹼度(以CaCO ₃ 計) Total alkalinity (as CaCO ₃)	毫克/公升 mg/L	7	83	21
總硬度(以CaCO ₃ 計) Total hardness (as CaCO ₃)	毫克/公升 mg/L	<5	56	30
鈣 Calcium	毫克/公升 mg/L	0.8	17	10
鎂 Magnesium	毫克/公升 mg/L	0.37	2.2	1.3
氯化物 Chloride	毫克/公升 mg/L	< 5	17	8
硫酸鹽 Sulphate	毫克/公升 mg/L	4	20	11
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
鐵 Iron	毫克/公升 mg/L	< 0.01	0.05	< 0.01

參數 Parameter	單位 Unit	監測數據 Monitoring Data (04/2016 – 03/2017)		
		最低值 Minimum	最高值 Maximum	平均值 Average
鋁 Aluminium	毫克/公升 mg/L	< 0.01	0.09	0.02
二氧化矽(以SiO ₂ 計) Silica (as SiO ₂)	毫克/公升 mg/L	2.2	16	10
錳 Manganese	毫克/公升 mg/L	< 0.01	0.05	< 0.01

註釋：

(1) 以上是有關食水水質的摘要報告。

(2) 各數值是根據水務署水質科學部現行的品質保證指引所訂的要求而編製。

Note:

(1) This is a summary report on drinking water quality.

(2) All values are compiled in accordance with requirements stipulated by the current quality assurance protocol of the Water Science Division of WSD.

附件四 Annex IV

水務 — 經營帳目

Waterworks – Operating Accounts

二零一六／一七年度回顧 Review of the Year 2016-17

截至二零一七年三月三十一日止的財政年度 For the year ended 31 March 2017

工作方面	Activities
按照水錶記錄的淡水耗水量上升0.2%至6.6億立方米	Metered fresh water consumption increased by 0.2% to 660 million cubic metres
財務表現	Financial Performance
收入上升3.2%	Revenue increased by 3.2%
開支上升5.1%	Expenditure increased by 5.1%
稅後虧損由二零一五／一六年度的11.386億元增至二零一六／一七年度的13.573億元	Deficit after taxation increased from \$1,138.6 million in 2015-16 to \$1,357.3 million in 2016-17
按固定資產平均淨值計算的回報率由二零一五／一六年度的-2.0%降至二零一六／一七年度的-2.3%	Return on Average Net Fixed Assets declined from -2.0% in 2015-16 to -2.3% in 2016-17

經營帳目 Operating Account

截至二零一七年三月三十一日止的財政年度 For the year ended 31 March 2017

			2017 (百萬元) \$M	2016 (百萬元) \$M
		註 Note		
收入	Revenue	2	8,706.4	8,434.5
開支	Expenditure	3	10,063.7	9,573.1
稅前虧損	Deficit before taxation		(1,357.3)	(1,138.6)
稅項	Taxation	1(e), 1(f), 4	—	—
稅後虧損	Deficit after taxation	1(j)	(1,357.3)	(1,138.6)
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 Financial Performance Measures

截至二零一七年三月三十一日止的財政年度 For the year ended 31 March 2017

			2017	2016
			(百萬元) \$M	(百萬元) \$M
		註 Note		
固定資產平均淨值	Average net fixed assets (ANFA)	1(i), 5	59,694.5	56,959.2
實際回報額	Actual return		(1,357.3)	(1,138.6)
目標回報額	Target return		2,029.6	1,936.6
按固定資產平均淨值計算的 實際回報率	Actual return as % of ANFA	1(h)	(2.3%)	(2.0%)
按固定資產平均淨值計算的 目標回報率	Target return as % of ANFA		3.4%	3.4%
附註為這帳目的一部分。The annexed notes form part of these accounts.				

財務狀況表 Statement of Financial Position

二零一七年三月三十一日結算 As at 31 March 2017

			2017	2016
			(百萬元) \$M	(百萬元) \$M
		註 Note		
可動用淨資產	Net assets employed			
固定資產	Fixed assets	1(b), 1(c), 5	60,912.1	58,476.9
流動資產	Current assets	1(d), 6	2,719.2	2,633.9
流動負債	Current liabilities	7	(2,536.5)	(2,449.1)
流動資產淨值	Net current assets		182.7	184.8
			61,094.8	58,661.7
財政來源	Financed by			
公共資本帳目	Public capital account	1(j), 8	61,094.8	58,661.7
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積折舊列出。

(c) 折舊

(i) 折舊是根據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%
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%
Motor vehicles	10%-20%

(ii) No depreciation is provided on assets under construction.

(d) 現有存貨

現有存貨是以加權平均法，按成本值計值。

(e) 稅項

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。

(f) 遞延稅項

遞延稅項指就資產及負債帳面值與計算應課稅溢利所用相應稅基間之所有重大暫時差額而作出的適當確認。遞延稅項資產則於應課稅溢利有可能抵銷可扣稅暫時差額時予以確認。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。

(g) 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。

(h) 按固定資產平均淨值計算的實際回報率

按稅後溢利或虧損與固定資產平均淨值的比率計算。

(i) 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積折舊在期初及期末兩項數值的簡單平均數。

(j) 虧損

由於水務監督沒有獨立的法定身份，其財政資源或虧損均視為政府一般收入的一部分。而有關虧損亦會於這項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 it is material.

(e) Taxation

Notional profits tax is 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 has been made in the accounts as the utility has no taxable surplus for the year.

(f) Deferred Tax

Deferred tax is recognised, where appropriate, for all material temporary differences between the tax bases of assets and liabilities and their carrying amounts in the accounts. Deferred tax assets are recognised to the extent that it is probable that taxable surplus will be available against which the temporary differences can be utilised. No provision for deferred tax in respect of all material temporary differences has been made in the accounts as the utility has no taxable surplus against which the temporary differences can be utilised.

(g) 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.

(h) Actual Return on ANFA

This is calculated as a percentage of surplus/deficit after taxation to average net fixed assets (ANFA).

(i) 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.

(j) 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

		2017	2016
		(百萬元) \$M	(百萬元) \$M
收費供水	Chargeable supplies	2,674.9	2,654.9
差餉補貼	Contribution from rates	3,187.1	3,409.5
政府對寬免計劃的津貼	Contribution from Government on concessions	1,576.1	1,164.9
政府為用戶提供免費用水的津貼	Contribution from Government on free allowance to consumers	1,067.4	1,009.2
政府樓宇用水	Supplies to Government establishments	156.4	158.9
收費、牌照及可收回支出的工程	Fees, licences and reimbursable works	37.1	32.1
存款利息	Interest from deposits	7.4	5.0
		8,706.4	8,434.5

政府對寬免計劃的津貼是為彌補於該年度因實行差餉寬免措施而引致的差額。

The contribution from Government on concessions is to cover the shortfall in contribution from rates resulting from the concession of rates granted during the years.

政府為用戶提供免費用水津貼的計算方法，是把二零一五／一六年度及二零一六／一七年度分別為11.5元和12.0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2.9元和3.0元)，乘以按照水錶記錄淡水耗用量內的免費用水津貼用量。

The calculation of contribution from Government on free allowance to consumers is based on the fresh water net unit production cost of \$11.5 and \$12.0 for the year 2015-16 and 2016-17 respectively, which has included a target return on ANFA of \$2.9 and \$3.0 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

		2017	2016
		(百萬元) \$M	(百萬元) \$M
員工開支	Staff costs	1,729.6	1,659.2
運作及行政開支	Operating and administration expenses	1,948.7	1,918.7
購買東江水的成本	Purchase cost of Dongjiang water	4,569.7	4,296.1
折舊	Depreciation	1,815.7	1,699.1
		10,063.7	9,573.1

4. 稅項

4. Taxation

		2017	2016
		(百萬元) \$M	(百萬元) \$M
名義利得稅	Notional profits tax charge for the year	0.0	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	34,557.5	31,931.5
由折舊免稅額所產生的 重大暫時差異	Material temporary difference arising from depreciation allowances	(22,626.7)	(21,305.8)

5. 固定資產

5. Fixed Assets

		樓宇、 過濾器、 喉管等 Buildings, Filters, Mains, etc.	機器及設備 Plant and Machinery	電腦硬件、 軟件及系統 Computer Hardware, Software & System	海水沖廁 設施 Salt Water Flushing	船灣淡水湖 Plover Cove	萬宜水庫 High Island	水錶 Meters	車輛 Motor Vehicles	建造中的 資產 Assets Under Construction	總額 Total
		(百萬元) \$M	(百萬元) \$M	(百萬元) \$M	(百萬元) \$M	(百萬元) \$M	(百萬元) \$M	(百萬元) \$M	(百萬元) \$M	(百萬元) \$M	(百萬元) \$M
成本	Cost										
二零一六年四月一日	At 1 April 2016	55,894.4	368.6	378.5	11,766.6	702.0	1,661.2	509.1	84.6	8,791.6	80,156.6
添置	Additions	-	5.4	10.0	-	-	-	57.0	15.2	4,224.5	4,312.1
轉發	Transfers	3,296.1	2.4	8.3	750.5	-	-	-	-	(4,057.3)	-
處置/註銷	Disposals/Write off	(102.6)	(4.4)	(0.0)	(34.9)	-	-	(21.3)	(5.9)	(29.7)	(198.8)
二零一七年三月三十一日	At 31 March 2017	59,087.9	372.0	396.8	12,482.2	702.0	1,661.2	544.8	93.9	8,929.1	84,269.9
累積折舊	Accumulated Depreciation										
二零一六年四月一日	At 1 April 2016	15,083.3	215.3	311.3	4,229.4	439.3	1,129.7	221.6	49.8	-	21,679.7
該年折舊	Charge for the year	1,191.5	34.2	13.3	486.6	9.3	29.3	43.1	8.4	-	1,815.7
處置/註銷後轉回	Written back on Disposals/Write off	(72.4)	(3.6)	(0.0)	(34.7)	-	-	(21.3)	(5.6)	-	(137.6)
二零一七年三月三十一日	At 31 March 2017	16,202.4	245.9	324.6	4,681.3	448.6	1,159.0	243.4	52.6	-	23,357.8
帳面淨值	Net Book Value										
二零一七年三月三十一日	At 31 March 2017	42,885.5	126.1	72.2	7,800.9	253.4	502.2	301.4	41.3	8,929.1	60,912.1
二零一六年三月三十一日	At 31 March 2016	40,811.1	153.3	67.2	7,537.2	262.7	531.5	287.5	34.8	8,791.6	58,476.9

帳目不包括搬遷鑽石山食水及海水配水庫往岩洞的可行性研究及勘查研究、設計工作和建造工程所涉及的資本開支。

The capital expenditure relating to the feasibility study and investigation, design and construction for the relocation of Diamond Hill Fresh Water and Salt Water Service Reservoirs into caverns has been excluded.

6. 流動資產

6. Current Assets

		2017	2016
		(百萬元) \$M	(百萬元) \$M
現有存貨	Stocks in Hand	104.2	104.9
應收帳項	Debtors	486.8	521.3
與庫務署的往來帳	Current Account with Treasury	2,128.2	2,007.7
		2,719.2	2,633.9

7. 流動負債

7. Current Liabilities

		2017	2016
		(百萬元) \$M	(百萬元) \$M
用戶和承建商的按金	Consumers' and contractors' deposits	2,089.6	2,030.0
應付帳項	Creditors	446.9	419.1
		2,536.5	2,449.1

8. 公共資本帳目

8. Public Capital Account

公共資本帳目指政府在這項公用事業的投資。

The Public Capital Account represents Government's investment in this utility.

		2017	2016
		(百萬元) \$M	(百萬元) \$M
四月一日結餘	Balance as at 1 April	58,661.7	55,620.8
本年度的虧損	Deficit for the year	(1,357.3)	(1,138.6)
政府的額外現金投資	Additional cash investment by the Government	3,790.4	4,179.5
三月三十一日結餘	Balance as at 31 March	61,094.8	58,661.7

9. 承擔

9. Commitments

於二零一七年三月三十一日及二零一六年三月三十一日，未於經營帳目作出撥備的未償還承擔如下：

Outstanding commitments as at 31 March 2017 and 31 March 2016 not provided for in the operating accounts were as follows:

		2017	2016
		(百萬元) \$M	(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	10,839.8	12,201.5
(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	—	—
		10,839.8	12,201.5

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

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港元兌1美元為固定匯率。

Financial Year: April 1 to March 31

Year (Calendar Year): January 1 to December 31

Exchange Rates

When dollars are quoted in this report, they are, unless otherwise stated, in Hong Kong dollars. Since October 17, 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.