



**TAI PO WATER
TREATMENT WORKS**

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有效供水

Delivering **Water Efficiently**

水乃生命之源。水務署人員致力優化現有基建，並在有需時加以擴展。故此，我們擁有一個滿足市民需求的高效率輸水系統。

Water is the cradle of life. At WSD, we optimise existing infrastructure and extend it where and when necessary. As a result, we have a highly efficient delivery system that meets the demands of our population.

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在香港，所有原水必先在水廠經過一連串嚴謹的濾水過程，然後才經由水管輸送到各用戶。海水則於海傍抽水站先經隔網過濾，再以電解產氯系統加以消毒，才輸送給用戶使用。全港共有超過二百個配水庫，置於供水網絡的中間位置，作用是把食水和鹹水貯存起來，預備供應給各地區使用。我們持續不斷地改善這些儲水設施和供水網絡，確保能為市民提供優質的供水服務。

妥善保養水管網絡

供水網絡的骨幹由全長約8 000公里的水管所構成，大部分管網均鋪設於地底下。水管內部須承受水壓，如管道有裂痕或破損，會引致水管滲漏或爆裂，造成水流失。因此妥善保養供水網絡，對維持穩定的供水服務，至為重要。

In Hong Kong, all raw water passes through a series of rigorous treatment processes at water treatment works before entering fresh water mains for onward distribution to end users whereas all sea water undergoes primary screening and then disinfection by electrochlorination at seafront pumping stations before delivery for consumption. More than 200 service reservoirs are in intermediate positions of the supply and distribution networks providing storage for the fresh water and sea water that are readily available for use. We are constantly working to improve these storage facilities as well as the distribution network for ensuring an efficient delivery of water services.

Keeping Up Supply Network

Water mains, mostly laid underground, form the skeleton of our supply network. This network comprising pipes of about 8 000 kilometres in length is subject to internal water pressure such that in case of defects or damages in the pipe structure, leakage or burst will take place, causing water loss. It is therefore important to keep up the condition of this supply network for its proper functioning.

測漏統計數字(二零一零至一一年度)
Statistics of Leak Detection (2010/11)

食水 Fresh Water

各財政年度所進行的測漏工作
Tests Conducted Per Financial Year

	2006/07	2007/08	2008/09	2009/10	2010/11
最低晚間流量測試次數 No. of Minimum Night Flow Tests	292	291	278	276	241
分段流量測漏次數(包括滲漏測試) No. of Step Tests (or Leakage Tests)	60	57	65	30	27
日間流量測試次數 No. of Day Flow Tests	2 354	2 429	2 793	3 269	3 458
音聽視察次數 No. of Sounding & Visual Inspections	3 238	4 220	4 438	4 914	3 177
測試及視察次數總計 Total No. of Tests & Inspections	5 944	6 997	7 574	8 489	6 903
經發現的滲漏個案數目 No. of Leaks Detected	3 107	2 998	2 598	2 563	1 846
估計每日可節省的水量(立方米/日) Estimated Quantity of Fresh Water Saved (cubic metres/day)	109 817	126 019	127 244	93 731	75 299

海水 Sea Water

各財政年度所進行的測漏工作
Tests Conducted Per Financial Year

	2006/07	2007/08	2008/09	2009/10	2010/11
最低晚間流量測試次數 No. of Minimum Night Flow Tests	0	0	0	0	0
分段流量測漏次數(包括滲漏測試) No. of Step Tests (or Leakage Tests)	3	3	2	2	0
日間流量測試次數 No. of Day Flow Tests	332	336	325	327	348
音聽視察次數 No. of Sounding & Visual Inspections	153	222	207	155	304
測試及視察次數總計 Total No. of Tests & Inspections	488	561	534	484	652
經發現的滲漏個案數目 No. of Leaks Detected	116	161	153	154	124
估計每日可節省的海水量(立方米/日) Estimated Quantity of Sea Water Saved (cubic metres/day)	30 642	45 592	113 201	18 204	29 918

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濾水廠內加建設施，提高生產力。
Additional facilities built in water treatment works to increase the capacity.

供水網絡

於二零零零年開展的水管更換及修復計劃，施工期長達15年，範圍遍及全港3 000公里的水管，預期於二零一五年底完成。截至二零一一年三月底，已完成更換及修復的水管長度為1 535公里（超過計劃總長度的一半）。為減少工程對公眾所造成的不便，計劃採用了最先進的方法和技術去更換及修復水管。在有需要時，我們會使用「非開挖」的施工方法，包括內喉緊貼法、原位內擄喉管法、水管推頂法及定向鑽挖法，以減少路面工程、交通阻塞和對公眾的滋擾。

減少水管滲漏

水管更換及修復計劃對減少主要管道的用水流失非常有效，而應用區域監控和水壓管理技術，更大大加強用水流失的控制。藉著適當的儀器和技術，我們能於滲漏初期找到漏點，以便適時展開補救行動。

Supply Network

Our 15-year phased programme of replacing and rehabilitating 3 000 kilometres of water mains across Hong Kong began in 2000 and is scheduled for completion in end 2015. We have reached the half way point in our water mains replacement and rehabilitation programme with 1 535 kilometres of mains upgraded as at end March 2011. The programme adopts advanced construction methods and technologies to minimise disruption to the public during the course of the upgrading work. Where necessary, we apply trenchless construction methods such as close fit lining of existing mains, cure in-place pipes, pipe jacking and horizontal directional drilling to reduce the amount of above ground construction, traffic disruption and public inconvenience.

Reducing Loss through Leakage

Whilst upgrading existing mains is critical in the reduction of water loss along major water mains, the control of water loss has also been strengthened through the wide application of district monitoring and pressure management technologies. With appropriate tools and expertise, we are able to identify leaks in an early stage so that timely remedial action can be taken.

水壓管理計劃現正於全港指定食水供應區內推行，此計劃目的是要在區內維持足夠及穩定的水壓。在全港17個主要供應區中，12個區的調查研究已經完成，其餘5個亦預期於二零一一年底完成。在七個已完成調查的區內，設置水壓管理系統的工作現正進行。其餘五個水壓管理系統的安裝將於二零一三年中完成。

在選定的水管進行拴鏈在線狀況評估技術的測試計劃已於二零一一年二月完成，該計劃以先進技術，檢測運作中帶壓水管的滲漏情況。有關技術利用閉路電視鏡頭或聲音感應器置入水管內，檢查水管內部狀況及檢測滲漏點，並可配合現有的數據記錄儀和漏水噪聲相關儀一併使用。目前，這些技術的成本較為高昂，但行業內的技術競爭預期會令價格下調。長遠而言，我們計劃在供水網絡的不同水管配置相應的技術，以檢測滲漏，並實施最適切的維修策略。

擴建供水系統

我們開展水務工程擴建現有供水系統，不單為了應付社會新發展而帶來的需求或擴展海水供應系統，更為了強化供水系統的穩定性。

Pressure management schemes target to maintain adequate and stable pressure in designated supply zones. Investigative studies have been completed in 12 of Hong Kong's 17 major supply zones and studies in the remaining 5 zones will commence in late 2011. In 7 of the 12 zones where studies have been completed, works to install pressure management instrumentation and equipment are now under way. Works in the other five zones will commence in mid 2013.

Trials using tethered in-line condition assessment technology in selected water mains were completed in February 2011. This technology, using an acoustic sensor or CCTV camera inserted into in-service water mains can be employed to detect leakage points precisely and provide visual evidence of the internal condition of the water mains. This technology complements existing tools such as noise loggers and leak noise correlators. Although it is currently expensive, we are hopeful that competition in technologies in the same field will drive the prices down. In the long term, we plan to have a suite of technologies to apply to different mains within the supply network. These technologies will be employed to identify leaks as well as enable the optimal repair strategies to be implemented.

Network Expansion

We implement works projects to expand the existing network not only for meeting the demand growth as a result of new developments or extension of the sea water supply system, but also for enhancing the reliability of the supply system.



以「非開挖」方法修補水管。
To rehabilitate the pipeline by using trenchless method.

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新的跨海食水海底水管將於2012年啟用。
The new cross-harbour fresh water submarine pipeline will be commissioned in 2012.

食水

我們正於維多利亞港西面施工鋪設一條直徑1 200毫米、全長2.1公里的跨海港食水海底水管，連接西九龍和西營盤。工程將於二零一二年完成。為減少在施工期間對環境所造成的影響，以及對海上交通的干擾，我們採用了特別的工程技術，以放置在海傍的絞機把連接好的水管從海港的另一端，沿著預先挖掘的深水喉坑，拖移到絞機所在之處。

連接大嶼山與長洲之間的食水海底水管的鋪設工程，現正處於籌劃設計階段。此工程會採用水平定向鑽挖技術，以減少對環境、鄰近古蹟，和海上交通的滋擾。

Fresh Water

A cross-harbour fresh water submarine pipeline, 1 200 millimetres in diameter and 2.1 kilometres in length, is being installed in the western part of Victoria Harbour between West Kowloon and Sai Ying Pun. It is due to be commissioned in 2012. To minimise the impact on the environment and to lessen disruption to marine traffic during construction, a special construction technique involving the pulling of joined pipes from one side of the harbour into a pre-dredged underwater trench by a winch set up at the other side, is used.

Detailed design work on the laying of a new fresh water submarine pipeline from Lantau Island to Cheung Chau is under way. This project will adopt the horizontal directional drilling technology to minimise the impact on the environment, the nearby archeological sites in the area, as well as marine traffic.



施工中的鋼線灣海水抽水站。
The Telegraph Bay Salt Water Pumping Station under construction.

海水

節約用水的其中一個重要策略，是擴建或提升作為沖廁用的海水供應系統。直至目前，薄扶林區仍以淡水作沖廁用途。為此，一個全新的海水供應系統現正在此區興建中。該系統包括於鋼線灣設置海傍海水抽水站，及相連的海水進水涵洞；兩個分別位於華富和薄扶林的海水配水庫；位於華富的海水抽水站，及相連的鹹水管。預計新設施可應付整個薄扶林區 85 000 人口平均每日 15 100 立方米的鹹水需求。

為提升沙田海水供應系統，本署正在該區建造一個新的海傍抽水站、兩個分別位於馬鞍山及多石的新配水庫，以及相連的水管系統。此外，在新界西北區，本署亦正

Sea Water

As part of our initiative to conserve fresh water, we are extending or upgrading the sea water flushing supply system. A sea water flushing scheme is being built for the Pok Fu Lam area which, until now, relies upon fresh water supply for toilet flushing. The new scheme comprises a seafront pumping station at Telegraph Bay, an associated sea water intake culvert, a salt water service reservoir at Wah Fu and another at Pok Fu Lam, a salt water pumping station at Wah Fu and associated sea water mains. The new facilities will meet the daily demand for sea water of 15 100 cubic metres a day, equivalent to the requirements of 85 000 people.

Sha Tin's sea water supply system is being upgraded with the addition of a new seafront pumping station and two service reservoirs at Ma On Shan and To Shek, together with an associated mains system. In the North West New Territories,



在樂安排與元朗及天山圍之間的青山公路沿線鋪設67公里的海水水管、在樂安排建造一個海水抽水站以及在丹桂村興建一個海水配水庫，以滿足該區的需求。

67 kilometres of sea water mains are being laid along Castle Peak Road from Lok On Pai to Yuen Long and Tin Shui Wai. A salt water pumping station at Lok On Pai and a service reservoir at Tan Kwai Tsuen are also being built to meet the area's needs.

在灣仔發展計劃第二期中，灣仔海傍海水抽水站將會重置，並乘時進行產能提升工程，以應付灣仔、中環和半山地區不斷增加的沖廁用水需求。馬己仙峽道的新置配水庫、寶雲徑的附加抽水站和7公里長的新設鹹水管，將支援這項供水計劃。整項工程預計於二零一五年竣工。

To cope with the increased demand for flushing water in Wan Chai, Central and Mid-level areas, the seafront salt water pumping station is being reprovisioned to increase its capacity as part of the Wan Chai Development Phase II. The supply scheme will be supported by a new service reservoir at Magazine Gap Road, an additional pumping station at Bowen Drive and 7 kilometres of new salt water mains. These works will be completed by 2015.

充份使用水資源

我們不斷尋求方法，在現有的資源和集水區收集更多原水。

Maximising Water Resources

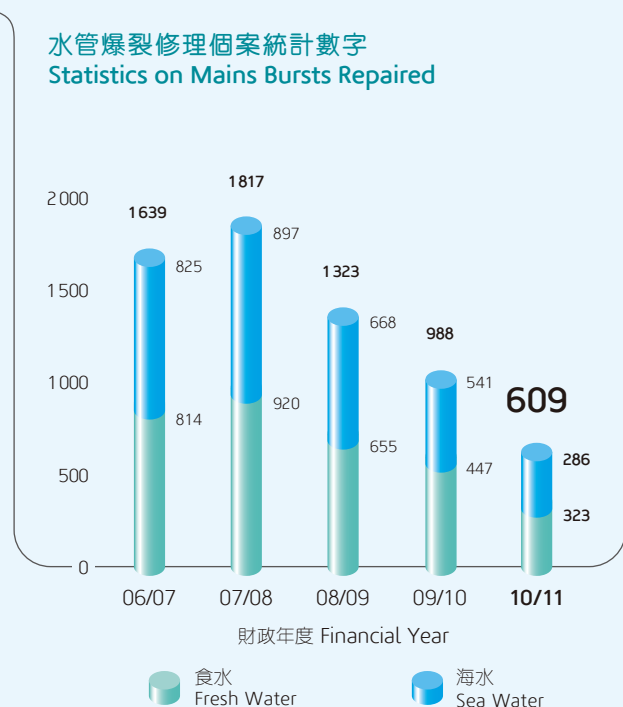
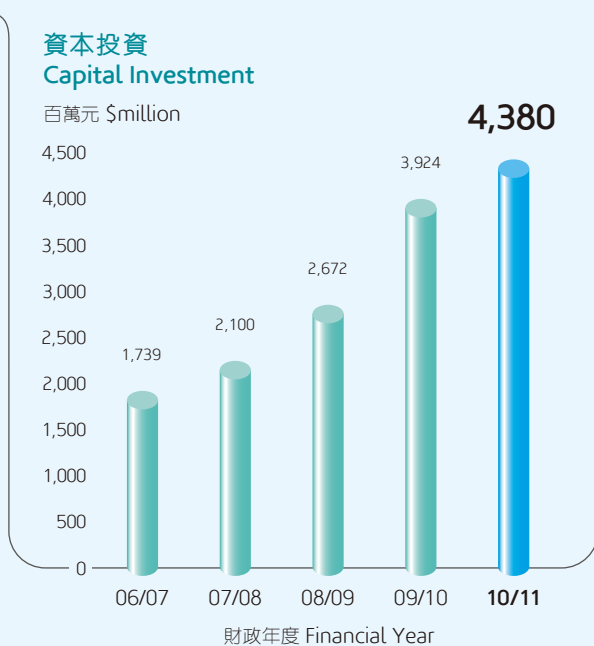
We are constantly looking at ways to gather more water from our existing resources and catchments.

水塘間轉運計劃

在渠務署制訂西九龍防洪策略時，我們已探討在防洪工程下兼收節約水資源之效的可行性。我們因此而制訂了水塘間轉運計劃，利用排洪隧道把九龍副水塘與下城門

Inter-reservoirs Transfer Scheme

In conjunction with the Drainage Services Department's flood control strategy for West Kowloon, we explored the feasibility of achieving water conservation as part of the flood control measures that are in place in some areas of Hong Kong. The result is a



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擴建大埔濾水廠以滿足未來的食水需求。

An extension programme in Tai Po Water Treatment Works commenced for meeting the increasing demand of drinking water.

水塘連接起來，並把九龍副水塘的溢流經下城門水塘和現有輸送系統輸送到沙田濾水廠處理，而非直接排放到維多利亞港。工程計劃完成後，每年平均會增加收集約250萬立方米的原水。

改善引水道系統

此外，為安全和有效地收集地表水，我們現正計劃改善引水道的工程。首個項目涉及改善城門、筆架山、金山和大欖涌現有共長約26公里的引水道系統。

確保食水處理能力

沙田濾水廠和大埔濾水廠是本署兩個主要處理原水的設施。前者已開始進入原地重置階段，而後者的擴建工程正進行中，以確保我們可以維持把原水處理達至符合特定水質標準的能力，並能應付將來需要改善的情況。兩個工程的進展規劃確保了在任何工程進行階段，兩間廠的處理能力皆能互為補足，相輔相成，應付日趨增加的需求。

proposal for the Inter-reservoirs Transfer Scheme which will connect the Kowloon group of reservoirs with Lower Shing Mun Reservoir using a raw water transfer tunnel. Flood water, instead of being discharged into Victoria Harbour, will be carried through a tunnel and along an existing transfer system to the Sha Tin Water Treatment Works where it will be treated to become fresh water. The project is expected to gather an additional 2.5 million cubic metres of raw water annually.

Catchwater Improvements

We are also planning improvements to catchwaters that will provide for the safe and efficient collection of surface water. The first project to take this forward will involve improvements to 26 kilometres of catchwaters in the Shing Mun, Beacon Hill, Golden Hill and Tai Lam Chung catchwater systems.

Securing Treatment Capacities

The Sha Tin Water Treatment Works and the Tai Po Water Treatment Works are two major facilities for treating raw water. The former is currently beginning a major reprovisioning phase while the latter is undergoing an extension programme to ensure that we will continue to have adequate capacity to treat raw water to the prescribed drinking water standards, with a provision for further improvement in the future. The phasing of the works will ensure that at all stages of construction, the treatment capacities of the two facilities will complement each other to produce an overall output that meets the increasing demand.

大埔濾水廠的擴建工程分兩期進行，日產量將由現時的25萬立方米增至80萬立方米，估計總成本為港幣51億元。第一期工程計劃於二零一一年竣工，該廠房的日產量屆時將提升至40萬立方米。沙田濾水廠（南廠）的重置工程於大埔濾水廠第一期工程投產後可隨即展開，沙田濾水廠（北廠）則會繼續運作。大埔濾水廠第二期工程計劃於二零一二年動工，並於二零一六年完成。至於沙田濾水廠（南廠）的重置工程則預計於二零一七年逐步落成。

資產管理

供水服務有賴有形資產。我們制定了全盤的資產管理架構，以期在可接受的風險框架內，善用資產，令運作效能達至合理水平。

The capacity of the Tai Po Water Treatment Works will be increased from 250 000 cubic metres per day to 800 000 cubic metres per day in two phases at a cost of HK\$5.1 billion. Phase 1, taking the treatment capacity up to 400 000 cubic metres per day, will be completed in 2011. Once this phase is finished, reprovisioning work at the south works of the Sha Tin Water Treatment Works can commence while the north works will remain in operation. Phase 2 of the Tai Po Water Treatment Works expansion will increase the capacity of the works to 800 000 cubic metres per day and is scheduled to begin in 2012 for commissioning in 2016. The south works at the Sha Tin Water Treatment Works is scheduled for phased commissioning from 2017.

Managing Assets

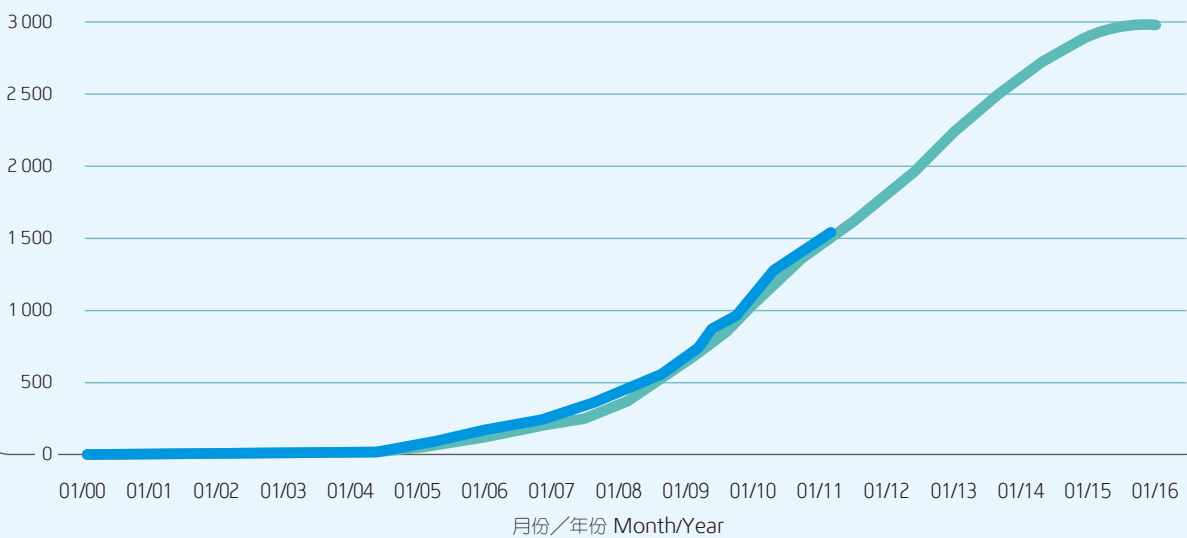
We rely heavily on our physical assets to deliver water to the community. Our goal is to manage the life cycle of these assets to achieve a desired level of service cost-effectively and within an acceptable risk framework.

更換及修復水管計劃下的工程進度

Progress of works under Replacement and Rehabilitation Project

已更換及修復的水管總長度（公里）

Cummulative length of water mains replaced or rehabilitated (km)



實際完成總長度
Cummulative Length Completed (Actual)

預計完成總長度
Cummulative Length Completed (Target)

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重要框架

我們參照國際的最佳方法，制訂總資產管理計劃和風險管理框架，管理資產效能，並探索持續改善的方案。

改善工作分階段進行，當中包括驗證、分析、評估及處理有可能影響運作和供水服務的風險驗證試驗計劃。另外，一個可行性研究亦已展開，目的是探索現有和將來的資訊科技系統如何更有效融入或聯繫到資產管理系統之內，以輔助資產管理方面的決策。

供水系統和設施的維修策略

此外，一系列關於以可靠性為中心的維修方式來管理機電裝置資產的研究經已完成。在未來數年，我們計劃把此維修方式應用在主要的濾水廠和抽水站上，並依據風險評估和持續的監控去制訂一套系統化和完善的維修策略。

Critical Frameworks

We have in place a Master Asset Management Framework as well as a Risk Management Framework which have been developed based on international best practices for managing the life cycle of our assets. We have also identified a number of initiatives for continuous improvement.

These initiatives are being implemented in stages and include a pilot project to establish a risk register to identify, analyse, evaluate and treat certain operational risks that can affect business and service delivery. A feasibility study is also under way to identify the functional requirements for an asset management information system which will cover existing and future information technology and the required interfaces needed to help the decision making process when applied to asset management.

Maintenance Strategy for Plant and Equipment

We have completed a series of Reliability-centred Maintenance (RCM) studies for mechanical and electrical assets and plan to apply RCM to key water treatment works and pumping stations over the coming years to develop a systematic and comprehensive model of maintenance strategies based on risk assessment and continuous condition monitoring.



員工定時巡察濾水廠內各項設施。
Routine check of facilities in water treatment works.



制訂系統化和完善的維修策略，以加強供水穩定性。

Systematic and comprehensive maintenance strategies to be developed for enhancing the reliability of water supply.

斜坡安全

我們正加強斜坡管理系統，以配合由土木工程拓展署發展的斜坡數據和格式。預期系統於二零一二年完成後，將有助識別需要強化安全措施的斜坡，也令收集及發放斜坡資訊更有效率。

善用資訊科技

本署全面應用的維修工程管理系統，協助監察和管理供水網絡的所有維修工程。更新的系統進一步加強了資產監控的水平，同時促進了與維修承辦商的溝通。

屯門、馬鞍山、荃灣、北港和上水濾水廠的監控系統正進行設備提升工程。新系統把各濾水設施的重要運作參數收集，再利用內聯網傳輸給員工。油柑頭濾水廠的監控系統提升工程將於二零一二年展開。

Slope Safety

We are also enhancing our Slope Maintenance System to align it with the slope data and format developed by the Civil Engineering and Development Department. Once completed in 2012, the enhanced system will help us identify slopes that require enhanced safety measures. The programme will also help us collect and disseminate slope information in a more effective manner.

Leverage on IT Systems

The Maintenance Works Management System, now fully adopted by the Department, enables us to monitor and control all the maintenance works across the supply networks. We have upgraded the system to strengthen our ability to monitor the conditions of our assets and to enhance our communications with maintenance contractors.

Control systems are being upgraded at five water treatment works — Tuen Mun, Ma On Shan, Tsuen Wan, Pak Kong and Sheung Shui. Essential operational data are uploaded and transmitted from each facility to intranet users. The control systems for the Yau Kom Tau Water Treatment Works will be upgraded by 2012.

有效供水 Delivering Water Efficiently



員工透過監控系統監察濾水廠運作。
Staff monitoring operations of water treatment works through the control systems.

資訊科技繼續加強了我們的工作效率。數碼繪圖系統的應用在地區運作上亦不斷擴大，數據容量和功能也在不斷提升。越來越多前線員工使用安裝了閥門隔離電腦程式的手提電腦，這個程式更可匯入員工使用的個人數碼助理(PDA)，令員工能更快速地當場進行對緊急情況的評估。

去年，我們成功地把專門為水管更換及修復計劃設計的數碼繪圖系統，落實到工地辦事處，供員工使用。新鋪設的水管記錄可於工地辦事處即時更新，並傳送到中央數碼繪圖系統。這些更新資料加強了記錄的完整性，並帶來更有效及更準確的供水網絡資訊。

全程監控水質

確保公眾對食水水質的信心，是我們在供水任務上的重要一環。香港的食水經嚴格處理，符合國際飲用水水質指引。然而，為確保客戶從住宅、辦公室，以及其他工作和消閒場所得享優質自來水，樓宇業主

New technologies continue to contribute to the efficiency and effectiveness of our work across the spectrum of operations. Digital Mapping System applications are being extended to provide more information and new functions and an increasing number of front line staff are using electronic notebooks installed with Valve Isolation Computer Programme (VICP) applications to facilitate front line operations. A mobile version of the VICP is being deployed on the PDAs of operational staff to facilitate more rapid on-the-spot emergency assessments.

Last year's launch of a Digital Mapping Sub-system, specifically devised for the water mains replacement and rehabilitation project, has proven to be a success. Staff working at site offices can now update and submit the as-built water mains records through this system to the central Digital Mapping System, increasing the efficiency of updating mains records and reducing errors during transcription. The accuracy of our mains records is now greatly enhanced.

Maintaining Quality from Source to Tap

Public confidence in the quality of drinking water is critical to our success in supplying water. The quality of Hong Kong's treated

亦須妥善管理和維修其內部供水系統，保持系統完整、有效和清潔。

大廈優質食水認可計劃

我們推行的大廈優質食水認可計劃涉及 1 055 000 個住戶。去年頒發金證書、銀證書和藍證書的總數達 3 270 張。

過去一年，本署聯同房屋署繼續推行樓宇孖水缸供水系統。此設計令大廈在例行清洗其中一個水缸時，另一個水缸仍能維持供水。十五幢公共房屋裝設了孖水缸供水系統，三十多幢公私營樓宇也正採用了類似的設計。

優質系統

我們採納的綜合品質管理系統，覆蓋供水服務從原水收集、食水處理及向客戶配水整個流程。管理系統包括監控和維修集水區、機電裝置和供水網絡、確保食水符合標準的水質監控系統，並能處理客戶投訴。我們連續兩年獲得 ISO 9001:2008 認證。



為市民提供臨時供水的水缸。
Water tank for providing temporary water supply to the public.



宣傳大廈優質食水認可計劃。
Promotion of Quality Water Recognition Scheme for Buildings.

fresh water complies with the international guidelines under which it is produced. However, ensuring that water of the same quality emerges from the taps of homes, offices and other places of work or recreation is the responsibility of others as well. Building owners need to manage the operation of plumbing systems and maintain their well-being in terms of integrity, functionality and cleanliness.

Quality Water Recognition Scheme for Buildings

Our Quality Water Recognition Scheme for Buildings now covers 1 055 000 domestic households with a total of 3 270 gold, silver and blue certificates issued last year in recognition.

During the year, we also worked closely with the Housing Authority on the introduction of a twin-tank water supply system for buildings. Such design ensures that when one tank is being cleaned, the other will continue to maintain water supply to the building. Twin tanks were installed in 15 new public housing blocks and similar provisions are being adopted in the design of more than 30 blocks in both the public and private sectors.

Quality Systems

An integrated quality management system (IQMS) is being adopted along the length of our supply line, from raw water collection to treatment and distribution. This encompasses the monitoring, control and maintenance of catchment, mechanical and electrical plant and supply network, monitoring and control regime to ensure conformance of drinking water to recognized standards, and handling of customer complaints. The system has been awarded ISO (International Organisation for Standardisation) 9001:2008 annually for the last two years.

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員工努力不懈，確保供水運作暢順。
Staff in an effort to ensure the smooth operations of water supply.

研究和發展

過去兩年，我們加大了研究和發展的力度，與多家私營機構和學術組織合作，探求新技術，來有效減少水流失和保養供水系統。

善用設施

我們委聘英國艾克斯特大學水系統中心，發展先進的「基因計算」科技，以優化本署供水系統的抽水運作效能。大學的研究人員，在我們的專業工程隊伍支援下，正研發計算方式和軟件，完成後的軟件將供本署運作使用。

我們又繼續研究以先進技術檢測運作中帶壓水管滲漏的情況，預計於二零一一年底得出成果。

Research and Development

Over the past two years we have stepped up research and development work and partnered with a number of private sector companies and academic institutions to look for new technologies that help minimise water loss and maintain water supply systems efficiently.

Optimising Facilities

To develop an advanced genetic algorithm based technology which will optimise the pumping energy across our water supply system, we engaged the Centre for Water Systems of the University of Exeter, UK. The university's researchers, supported by our team of professionals, are developing the methodology and software which, once completed, will be transferred to us for operational use.

We have also continued our research into technology that can detect leakage in in-service pressurised water mains and are awaiting results which should be available later in 2011.

水錶更換計劃

截至二零一一年三月底，我們成功地更換了120萬個使用超過12年、直徑15毫米的水錶。是項工作於二零零六年展開，旨在提升水錶的準確度。根據水務設施條例的規定，水錶的不準確度須在正負百分之三以內方可作為記錄準確。

危機管理

本署恆常地辨識和管理整個供水系統的潛在風險。危機處理及在不尋常事故出現時，要維持無間斷供水的能力乃持續的挑戰。我們擬備了危機管理方案和多個應變計劃，使我們在危機發生時能夠快速調配資源和協調相應緊急行動。

二零一一年一月，我們進行模擬廣東核電站事故場外應急的內部演習。演習所得的結果，成功地證明了我們的危機管理方案能有效處理此類緊急事故。

二零一一年三月，日本福島發生核事故，我們隨即全面檢視和驗證輻射測試運作。我們又增強準備，盤點所需的保護裝備和監察器材，並加強供水和輸水系統的輻射監測。結果，我們在極短時間內緩和市民對供水安全的疑慮。



我們在日本核事故發生後積極加強輻射監測，成功緩和市民疑慮。

Our active radiological monitoring after the nuclear incident in Japan allayed public concern about the safety of water supplies.

Water Meter Replacement Programme

By the end of March 2011, we have successfully replaced over 1.2 million 15-millimetre-diameter water meters older than 12 years. This work is part of a programme launched in 2006 to enhance the accuracy of water meter readings. Under the Waterworks Regulations, a meter shall be deemed to register correctly if its inaccuracy does not exceed +/- 3%.

Crisis Management

We constantly identify and manage risks across the entire supply systems. Crisis management and the ability to maintain an uninterrupted water supply, should any extraordinary event occur, remain an ongoing challenge. A crisis management plan and various contingency plans are in place to maintain a state of preparedness for rapid mobilisation of resources and co-ordination of emergency actions to be undertaken in the case of emergencies or crises.

In January 2011, we carried out an internal drill which involved dealing with a hypothetical off-site incident at the Guangdong Nuclear Power Station. This drill successfully tested the effectiveness of our crisis management plan in handling an emergency of this nature.

Our radiation testing operations have been fully reviewed and tested following the Fukushima nuclear incident in Japan in March 2011. We also entered a state of preparedness by completing stock-taking of necessary protection gear and monitoring equipment. The radiological monitoring of raw and treated water in the supply and distribution systems was escalated and, as a result, we were quickly able to allay public concerns over the safety of water supplies.

