投資基建
Investing in Infrastructure

2,100

21億元
million

於本財政年度，我們的資本投資達21億元。
Our capital investment amounted to HK$ 2,100 million in this financial year.

本署繼續對未來作出規劃，確保為本港人口增長的地區提供適時而有效率的供水服務。與此同時，改善或更換現有水管及濾水設備的計劃繼續如期進行。

The Department is continuing to plan ahead to ensure the timely and efficient delivery of water to areas of population growth in Hong Kong. At the same time, its programme of upgrading or replacing existing water mains and treatment plants continues on schedule.

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牛潭尾濾水廠。
Ngau Tam Mei Water Treatment Work.

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更換及修復水管

本署更換及修復本港約3 000公里水管的十五年工程計劃，於去年繼續推展。該計劃正分階段進行，直至二零一五年竣工。第一階段及第二階段目前仍在進行中，而第三階段已於二零零八年九月展開，覆蓋水管長達800公里，預期於二零一三年完成。該項目第四階段所需的調研及設計工作業已展開，預計將於二零一一年開始施工。

更換及修復水管工程在許多方面均非常重要——不少現有水管已使用超過三十年，只能勉強應付現今的需求。像香港這樣人口稠密的城市，因水管爆裂及供水網絡老化而產生的其他事故，可能會對鄰近地區居民造成不必要的干擾。本署透過推行修復及更換計劃確保供水安全、可靠及有效。

The Department is continuing to plan ahead to ensure the timely and efficient delivery of water to areas of population growth in Hong Kong. At the same time, its programme of upgrading or replacing existing water mains and treatment plants continues on schedule.

Replacing and Rehabilitating Water Mains

Our 15-year programme to replace and rehabilitate some 3 000 km of water mains across Hong Kong has continued over the past 12 months. This programme is being undertaken in stages through to 2015. Stages 1 and 2 are currently underway. The third stage, which began in September 2008, covers 800 km of mains and is scheduled to be completed by 2013. The investigation and design work required for the fourth stage of the project is underway with a view to commencing construction in 2011.

The rehabilitation and replacement work is critical on many fronts – many of the existing mains are more than 30 years old and are struggling to keep up with today's demand. In a crowded city like Hong Kong, water main bursts and other incidents along our aging supply network can cause disruptions to the needless neighbourhoods. By moving ahead with its rehabilitation and replacement programme, the department is ensuring water supplies remain safe, reliable and efficient.

推行工程計劃的過程中，本署力求對市民日常生活的滋擾減到最少，並盡可能利用內喉緊貼法、原位內搪喉管法、水管推頂法、定向鑽挖法等「無開坑」方法。我們正密切留意「無開坑」技術的發展，確保能夠提升本身的技術水平，以減少對公眾造成的滋擾。

新工程項目

去年，我們推行一系列新工程項目，旨在提升住宅及工商業區的食水及鹹水供應。

原地重建沈雲山食水抽水站及附屬水管的工程項目已告展開，此計劃將可提高輸送食水至將軍澳的可靠度。另外，本署亦會興建兩座鹹水配水庫及一座海傍抽水站，以及鋪設新水管，完成後可提升沙田現有的鹹水供應系統。

新界西北方面，本署正沿著青山公路鋪設樂安排至虎地之間的水管，作為落實該區的鹹水供應系統的一部份。這套鹹水供應系統第二階段的詳細設計亦在進行中，當中包括於樂安排興建抽水站、於丹桂村建造鹹水配水庫及鋪設8.4公里鹹水水管，工程將於二零零九年初動工，估計成本為港幣3.47億元。

The aim is to complete the programme with the minimum disruption to daily life. Trenchless methods such as close-fit lining, cured-in-place pipes, pipe-jacking and horizontal directional drilling are used as much as possible. We are maintaining a watch on trenchless technology to ensure that we can advance our own techniques and minimise disruptions to the public.

New Projects

A range of new projects implemented over the past 12 months are designed to improve the supply of fresh and salt water supplies to residential and commercial areas.

Construction work commenced on the in-situ reprovisioning of the Shum Wan Shan fresh water pumping station and its associated mains which will enhance the reliability of water supplies to Tsueng Kwan O. Two salt water service reservoirs and a seafront pumping station, along with new mains, will upgrade Sha Tin's existing salt water supply system.

In the North West New Territories, mains are being installed along Castle Peak Road between Lok On Pai and Fu Tei as part of a salt water supply system for the area. The detailed design is also underway for Stage 2 of this salt water supply system. This stage comprises the construction of a pumping station at Lok On Pai, a service reservoir at Tai Kwai Tsuen and the laying of 8.4 km of salt water mains. Construction will begin in early 2009 at an estimated cost of HK$347 million.

下城門水塘水塔在重建中。
Re-construction of the draw-off tower at Lower Shing Mun Reservoir.

我們將於大埔濾水廠擴建至所需的產量後，便立即展開重建沙田濾水廠的工程。這項安排可使濾水廠提供穩定的供水量，從而有效地提供更可靠的供水服務。為加快沙田濾水廠的原地重建計劃，大埔濾水廠的濾水產量將會由現時的每日25萬立方米提高至每日80萬立方米，估計成本為港幣27億元。預期工程將於二零一零年初開始動工，並於二零一三年底前竣工。

資產管理

於二零零八年一月，我們參加由澳洲水務協會及國際水務協會(IWA)共同籌辦的「二零零八資產管理基準參照計劃」。這項計劃共有超過40家來自美國、加拿大、澳洲、新西蘭、阿曼及阿拉伯聯合酋長國的水務機構踴躍參與。基準參照計劃旨在評估我們在資產管理方面的能力、目前工作模式及效率，同時參考其他水務機構的現況，發掘及採納業界最佳營運模式。

Once the Tai Po Water Treatment Works has been upgraded to an acceptable level, works on the reprovisioning of the Sha Tin Water Treatment Works will begin. This arrangement effectively offers a more reliable water supply with a balanced output from the treatment works. To facilitate the in-situ reprovisioning works at Sha Tin Water Treatment Works, the capacity of the Tai Po Water Treatment Works will be increased from the existing 250 000 cubic metres/day to 800 000 cubic metres/day at an estimated cost of HK$2.7 billion. Construction is expected to begin in early 2010 for completion by the end of 2013.

Asset Management

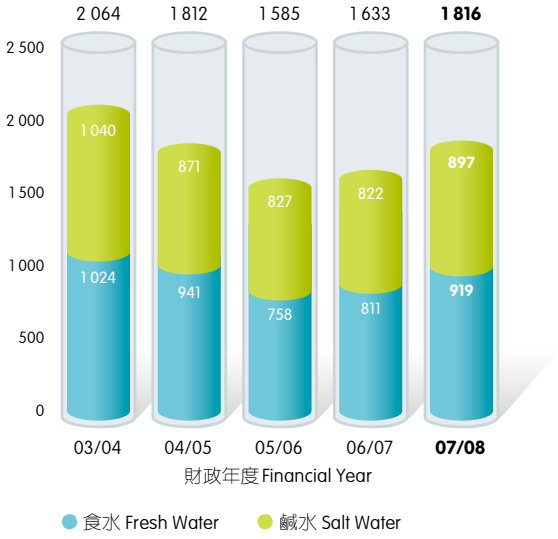
In January 2008, we took part in the 2008 Asset Management Benchmarking Project organized by the Water Services Association of Australia and the International Water Association (IWA). Over 40 water utilities from the United States, Canada, Australia, New Zealand, Oman, and the United Arab Emirates participated. The benchmarking project aims to take stock of our capability, current practices and effectiveness in asset management, benchmarking against other utilities and identifying and adopting the best practices.

大埔濾水廠一角。
A corner of Tai Po Water Treatment Works.

上：工人正進行水閥開關。
Upper: A gang of workers performing valve operation.

下：一艘臨時放置在船灣淡水湖內的躉船正為主壩進行修葺工程。
Lower: A derrick barge stationed in Plover Cove Reservoir temporarily for carrying out remedial work on the main dam.

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



* *(1) 2005/06及過往年度的水管爆裂修理個案統計數字僅包括水務署合約承建商修理的爆裂個案*
(2) 2006/07及以後年度的水管爆裂修理個案統計數字包括水務署合約承建商及水務署直屬員工修理的爆裂個案

* *(1) Statistics of main bursts for 2005/06 and before include only those main bursts repaired by WSD Term Contractors*
(2) Statistics of main bursts for 2006/07 onwards include all main bursts repaired both by WSD Term Contractor and WSD direct labour

我們在推行資產管理基準參照計劃時，亦計劃建立一個整體資產管理框架。是項決策將全面涵蓋擬訂政策及目標，以至制定策略的各項議題，並就有關的方法及程序制定大綱。與此同時，針對資產狀況評估及資產管理漏洞評估的準備工作亦正進行得如火如荼。

While conducting the benchmarking project on asset management, we are also planning to construct an overall asset management framework. This holistic approach will cover issues ranging from policy and objective-setting to strategy formulation and the laying out of the methodology and processes involved. Meanwhile, preparatory work for assessments of asset conditions and asset management gaps are under way.

地理資訊技術

根據最新地理資訊技術改良的「數碼繪圖系統」已投入使用，以收集、存儲、結合及處理本署的數碼化供水網絡地域空間數據。這個平台收集的地下資產資訊不斷增加，有助我們有效配置地理資訊應用系統，以管理地下資產，並更換與修復水管。我們正於本署總部及所有分區辦事處推廣是項系統，務求讓分區辦事處員工隨時查閱最新水管記錄圖則。本署亦正在開發以流動電話及互聯網絡支援地理資訊應用系統，藉此為實地工作地點及工地辦公室提供最新的供水網絡數據。

GIS Technology

The enhancement of the Digital Mapping System based on the latest GIS technology to acquire, store, integrate and maintain digitised geospatial data of our water supply network, is in the pipeline. The platform holds an increasing amount of underground asset information and enables us to effectively deploy new GIS applications for the management of underground assets as well as the replacement and rehabilitation of water mains. The system is being extended from Departmental Headquarters to all Regional Offices, striving to give regional staff real-time access to the most updated mains record plans. Mobile and web-enabled GIS applications are being developed to provide updated water supply network data to fieldwork locations and site offices.

安裝在供水系統內的600多台水泵需要定期維修。
Over 600 pumps are installed our water supply system requiring regular maintenance.

斜坡保養

本署配置的「斜坡管理系統」，是一個保存及管理斜坡檢查及工程記錄的綜合資料庫，藉此，部門內外（如與私營機構或其他政府部門在本署的斜坡附近進行工程時）的資訊流通將會更為一致和便捷。

資訊科技

我們繼續推行資訊科技策略計劃。本署已就保養地下基建及地面資產先進且高效能的科技系統投入可觀的資源。長遠而言，此舉既可節省成本，又可提高服務效率。

二零零七年十月，本署完成「維修工程管理系統」的推展，藉此加強我們從開展維修工程至完工的管理效率。該系統使用個人數碼助理（PDA）記錄600名工地員工的實地工作情況。

二零零八年三月，我們的「人力資源管理系統」已經投入服務。

Slope Maintenance

The Slope Management System has been deployed as a comprehensive inventory for keeping and maintaining slope inspection and works records. It enables an efficient and effective flow of information within the department as well as between the department and outside parties such as private bodies and other government departments who plan to carry out engineering works in the vicinity of our slopes.

Information Technology

We continue to advance our strategic plan for information technology. Substantial investment has been made in new and powerful technology systems for the maintenance of both underground infrastructure and our surface assets. This will result in long term cost savings and greater service efficiencies.

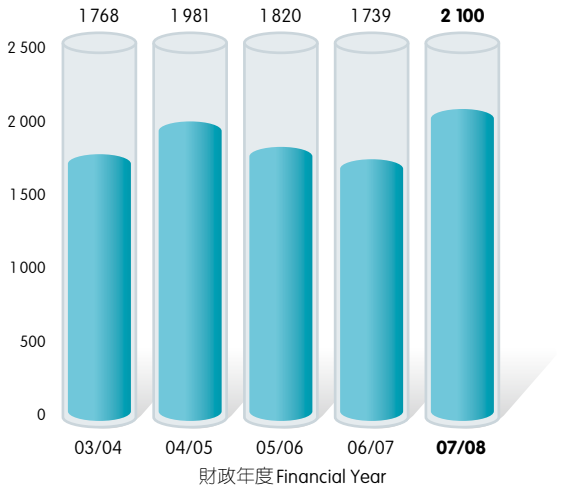
In October 2007, the Department completed the roll out of the Maintenance Works Management System to strengthen the management of our maintenance works from initiation to completion. The system involves the use of personal digital assistants (PDA) in recording field works by 600 site staff.

In March 2008, we completed the launch of the Human Resources Management System.

在電機工場使用的電感發熱器。
An induction heater used in the Electrical Workshop.

資本投資
Capital Investment

百萬元 $ million



奧運會應變計劃

本署於二零零七年底順利完成危機管理計劃的演習，測試該項計劃在處理緊急情況的成效。我們亦為二零零八年奧運會及殘疾人馬術比賽擬定了一套應變計劃，並參加一系列政府多機構級別的演習，測試我們的整體應變能力。此外，本署亦已測試和操練在緊急情況下的應變及處理能力。

Olympic Contingencies

The Department successfully completed a drill on its crisis management plan in late 2007 to test the effectiveness of the plan in handling emergencies. We have also prepared a contingency plan for the 2008 Olympics and Paralympics Equestrian Events and participated in a series of Government multi-agency level exercises organised by the Security Bureau to test our overall preparedness. Emergency response and handling capacities were tested and practised.

研究和發展

研究和發展工作對發展我們的基建至關重要。去年，我們繼續進行不同類型的研發項目，包括研究彈性座封閘閥在鹹水供應系統中的表現。該項研究表明質量優秀的彈性座封閘閥表現良好。我們將展開多項研究，包括應用超音波處理技術控制海藻。我們亦已完成現有濾水廠設備監控系統現代化的探討，並推行改善上述系統的五年計劃。

Research and Development

Research and development plays an important role in the development of our infrastructure. In the past year, we continued different types of research and development projects including a study of the performance of resilient-seated gate valves in our salt water supply systems. The study revealed that good quality resilient-seated gate valves performed well. We will commence various studies including one on the application of sonication technology for algal control. We have also completed a study on the modernisation of the distribution control system at existing water treatment works. A 5-year programme for upgrading the systems has been implemented.

在粉嶺火車站附近，使用聚乙烯喉管進行大型水管的修復工程。
Rehabilitation of large water main with PE pipe near Fanling Railway Station.

上：員工正檢查喉管。
Upper: Staff inspecting the water mains

下：在龍翔道機電工場內員工為水泵的電動機進行維修。
Lower: Staff carrying out maintenance work on electric pump motor at Lung Cheung Road Mechanical and Electrical Workshop.

於去年年報所討論的在非住宅樓宇廣泛應用水冷式空調系統的試驗計劃已取得成果。機電工程署計劃於二零零八年中將試驗計劃擴展成一個常規計劃。

A pilot scheme on the wider use of water-cooled air conditioning in non-domestic developments, discussed in last year's Annual Report, was successful. The Electrical and Mechanical Services Department plans to extend the pilot scheme to a standard scheme in mid 2008.

更換水錶

水務設施條例規定，水錶的偏差程度不可超出±3%，而這亦是本署向客戶承諾的整體水錶準確程度表現目標。我們正在實行一項計劃，更換超過120萬個直徑15毫米而又使用超過12年的水錶，該計劃將於二零一一年初完成。

Replacement of Water Meters

The Waterworks Regulations stipulate inaccuracy of water meters should not exceed ±3%. This is also the performance target on the overall meter accuracy pledged by the Department to customers. We are implementing a programme to replace, by early 2011, over 1.2 million 15 mm diameter water meters of age older than 12 years.