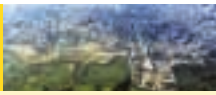
Ready for the Rainy Days

Chapter 2
第二章

未雨綢繆

Ready for the Rainy Days





防洪工作

本港的水浸問題主要集中在新界的北部和西北部一些以前用作養魚和種植禾稻的低窪地方和天然洪氾平原。水浸亦可能在市區部分地方出現，這些地方的雨水排放系統已是數十年前根據舊有的設計標準所建造，由於系統老化和市區不斷擴展，這些雨水排放系統往往已不敷應用。

渠務署自 1989 年成立以來，即為整個香港特區制定一套全面的防洪策略。我們根據這套策略實施了多項大型河道治理工程計劃和詳細的公共排水系統修復和改善計劃。每年我們並會定期進行視察和保養工程，使排水系統的操作狀況保持良好。防洪策略亦包括《土地排水條例》所賦予的法律基礎，以應付私人發展項目所帶來的壓力。這些壓力在過去曾令區域性水浸情況加劇。以上種種措施已令很多以往人所共知易受水浸地區的水浸風險大幅減低。

Flood Prevention

The flooding problem has been mostly concentrated in the Northern and Northwestern NT where low-lying areas and natural flood plains were once used mainly for fish farming and paddy cultivation. Flooding can also occur in some urban areas where the stormwater drainage systems were built decades ago to the old design standards and are becoming inadequate due to aging of the systems and continuous urban expansion.

Since the Department was established in 1989, we have developed a comprehensive flood prevention strategy for the whole of the Hong Kong SAR. Under the strategy, we have implemented many large-scale river training projects and a detailed programme of rehabilitation and upgrading of the public drainage system. Regular inspections and maintenance works are being carried out every year to keep the drainage systems in good working condition. The flood prevention strategy also includes a legal framework empowered by the Land Drainage Ordinance to cope with private development pressures which might have, in the past, aggravated the local flooding conditions. All of these have led to a substantial reduction in the risk of flooding to many previously renowned flood-prone areas.

在2002年，香港天文台所錄得的全年總雨量為2,490毫米，較每年平均雨量2,200毫米稍高。但我們只收到177宗水浸的報告，而過去5年卻每年平均有496宗報告。這是由於去年雨季的雨量分布平均，而過去數年所實施的防洪策略亦漸見成效。

為達致國際水平的防洪標準並支援可持續發展，我們會繼續檢討、保養和改善雨水排放系統。我們亦會貫徹對社會的承擔，繼續竭盡所能減少市民所受到的水浸風險。

防洪工程計劃的推展

政府現正進行一系列的主要雨水排放系統改善工程，以解決水浸問題。其中包括新界北部和西北部造價約29億元，以及西九龍造價約29億元的建造合約正在施工。此外，在新界、西九龍和其他易受水浸地區（例如東九龍、荃灣和港島北部）另有造價63億元的雨水排放系統改善工程計劃正處於策劃和設計階段。這些主要雨水排放系統改善工程計劃載於附錄A，而工程計劃的施工地點則載於附錄B。

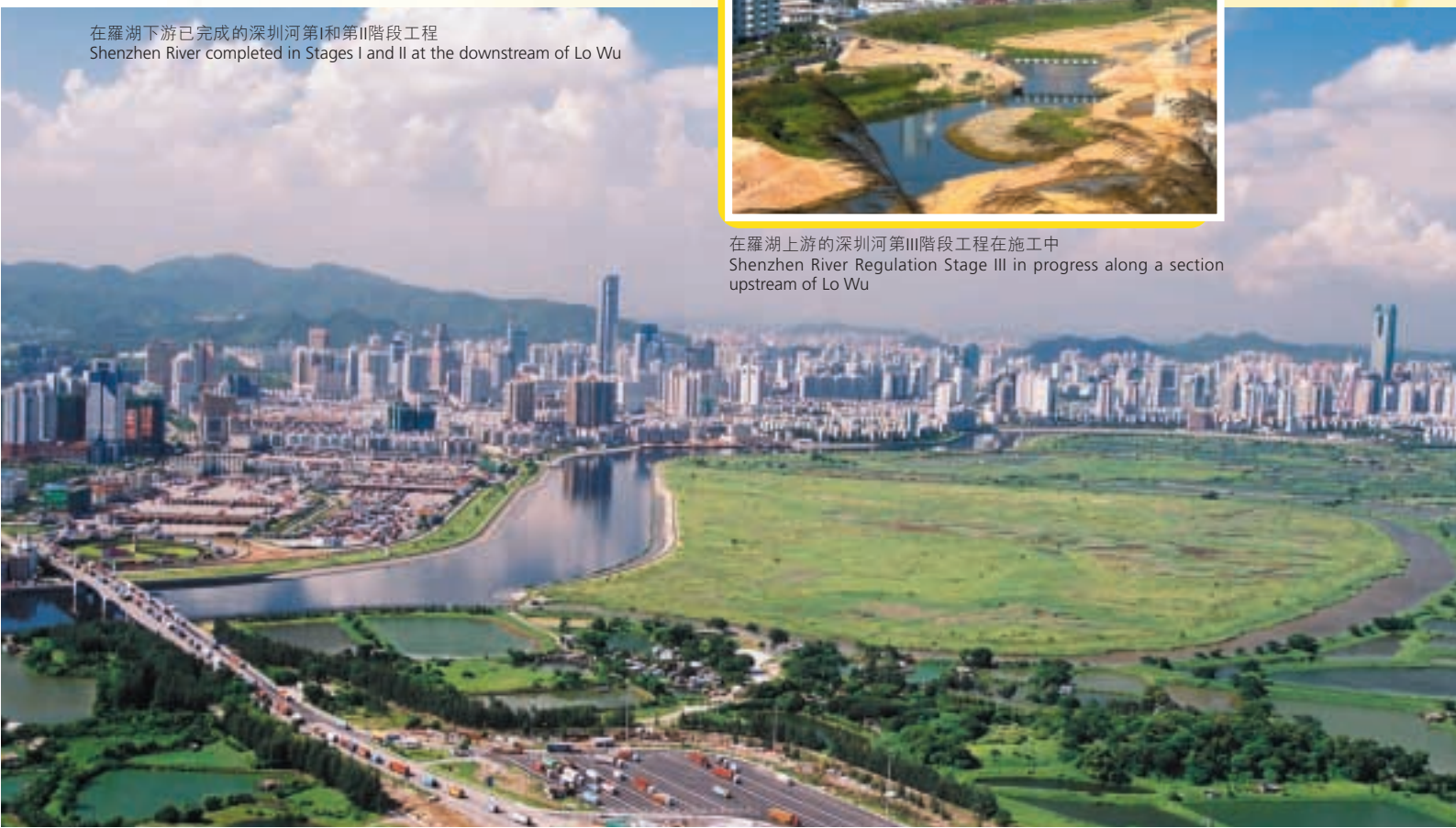
In 2002, a total annual rainfall of 2,490 mm was recorded at the Hong Kong Observatory, which was slightly higher than the average annual rainfall of 2,200 mm. Nevertheless, only 177 flooding complaints were reported, as compared with the annual average of 496 over the past 5 years. This was attributable to the even distribution of rainfall over the rainy season and the remarkable achievement through the implementation of our flood prevention strategy in the past years.

To achieve a world-class flood protection standard and to support sustainable development, we will continue to review, maintain and upgrade our stormwater drainage systems. As an on-going commitment, we will continue making every endeavour to reduce the risk of flooding in the community.

Delivery of our Projects

The Government is now constructing a series of major drainage improvement works to tackle the flooding problem, with active construction contracts costing about $2.9 billion in the Northern and Northwestern NT and about $2.9 billion in West Kowloon. A further $6.3 billion of drainage improvement projects in the NT, West Kowloon and other flood prone areas such as East Kowloon, Tsuen Wan, Northern Hong Kong Island, are under planning or design. These major drainage improvement projects are listed in Appendix A, whereas locations of the projects are shown in Appendix B.

在羅湖上游的深圳河第III階段工程在施工中
Shenzhen River Regulation Stage III in progress along a section upstream of Lo Wu



在羅湖下游已完成的深圳河第I和第II階段工程
Shenzhen River completed in Stages I and II at the downstream of Lo Wu

新建成的梧桐河道經得起2002年8月9日一場大暴雨的考驗，成功保障上水天平山一帶免受水浸之苦
The newly completed river (Indus) channel at Sheung Shui saved the Tin Ping Shan area from flooding during the heavy rainstorm on 9.8.2002

由於牛潭尾排水道已部分完成，大大減輕了2002年8月9日一場大暴雨中該地區的水浸情況
The partially completed Ngau Tam Mei drainage channel substantially reduced the extent of flooding in the area during the heavy rainstorm on 9.8.2002

新界的防洪成績

為減輕新界的水浸問題，我們不斷實施大型雨水排放系統改善工程，包括河道治理和鄉村防洪抽水計劃。在2002至03年度，我們完成了造價約10億元的雨水排放系統改善工程，並批出了總額達8億元建造合約。

在新界北部，最為關鍵的河道治理工程計劃就是分3個階段進行的深圳河治理工程計劃。這項工程計劃由深圳市政府和香港特區政府合資進行。由后海灣至羅湖的第I和第II階段工程已分別於1997年和2000年完成，令深圳河下游部分的防洪水平得以提升至現代的標準。羅湖上游的第III階段工程現正在施工階段，預計可於2006年年初完成。新界北部其他重大的河道治理工程計劃還包括梧桐河、雙魚河和平原河的治理和復修工程。雙魚河的工程已於2002年完成，梧桐河的工程亦於2003年年初完成。平原河的工程在2003年年中展開，以便配合深圳河治理工程計劃第III階段在2006年年初的完工，以紓緩打鼓嶺的水浸問題。

Flood Prevention Achievements in the NT

To alleviate the flooding problem in the NT, we have been constructing major drainage improvement works including river training and village flood pumping schemes. In 2002/03, about $1 billion of drainage improvement works were completed and new construction contracts amounting to a total sum of $800 million were awarded.

In the Northern NT, the most critical river training project is the 3-stage Shenzhen River Regulation Project, which is a joint venture project between the Shenzhen Municipal Government and the HKSAR Government. The Stages I and II works between Deep Bay and Lo Wu were completed in 1997 and 2000 respectively, bringing the flood protection level to current standards in the lower sections of the river. The Stage III works upstream of Lo Wu are now under construction for completion in early 2006. Other critical river training projects in the Northern NT include the training and rehabilitation of River Indus, River Beas and River Ganges. The works at River Beas were completed in 2002 and River Indus in early 2003. The works at River Ganges also started in mid 2003 to tie in with the completion of the Shenzhen River Regulation Project Stage III in early 2006 to alleviate the flooding problem in Ta Kwu Ling.

在新界西北部，已竣工的新排水道包括元朗主要排水道、錦田主要排水道的中下游和牛潭尾主要排水道的上游。牛潭尾主要排水道下游和元朗及錦田一些主要排水道上游的建造工程已進展至工程後期，預計可分別於2004年和2005年完工。新田東主要排水道和元朗排水繞道的工程亦分別於2002年尾及2003年初展開。這條元朗排水繞道屬非常關鍵性，因為我們可透過排水繞道把雨水引離原有排水道，避免令元朗市現有的排水網絡負荷過重。工程完成後，約有86,000人可免受水浸威脅。

In the Northwestern NT, new drainage channels already completed include the Yuen Long Main Drainage Channel, the lower and middle reaches of Kam Tin Main Drainage Channel, and the upper reach of the Ngau Tam Mei Main Drainage Channel. Construction works for the lower reach of Ngau Tam Mei Main Drainage Channel and some upstream main drainage channels in Yuen Long and Kam Tin are also at an advanced stage and will be completed in 2004 and 2005. Construction works for the San Tin Eastern Main Drainage Channel and Yuen Long Bypass Floodway have also commenced in late 2002 and early 2003 respectively. The Yuen Long Bypass Floodway is very critical, by which stormwater will be diverted to avoid overloading the existing drainage network in the Yuen Long Town. Upon completion, it will protect a population of about 86,000 people from flooding.

雙魚河排水道在2001年建成
Beas River Drainage Channel completed in 2001

2002年8月9日，渠務署從馬田壆正泛濫的排水道中清理垃圾。這處的水浸情況要在元朗排水繞道完工後才獲得徹底改善。
Debris was being removed from the overflowing drainage channel in Ma Tin Pok on 9.8.2002. The flooding situation will be alleviated after completion of the Yuen Long Bypass Floodway.

錦田排水道下游在1999年建成
Downstream reach of Kam Tin Drainage Channel completed in 1999

自 1997 年以來，我們已在新界區完成造價共 40 多億的主要河道治理和防洪工程。因此水浸情況，特別是新界北部的羅湖、河上鄉和燕崗和新界西北部的元朗和錦田的水浸情況已有顯著改善。以往狹窄多彎的天然水道假若出現泛濫，新界的洪氾平原便經常出現水深 1 至 1.5 米的水浸。現在，在這些易受水浸地區成千上萬的居民已得以免受到水浸的威脅。深圳河治理工程計劃第 III 階段以及打鼓嶺、元朗和新田其他新的排水道工程於 2006 年年初完工後，新界北部和西北部的水浸情況將會進一步獲得改善。

Since 1997, over $4 billion value of major river-training works and flood-control projects have been completed in the NT. As a result, the flooding situation has been significantly improved, particularly in Lo Wu, Ho Sheung Heung and Yin Kong in the Northern NT and Yuen Long and Kam Tin in the Northwestern NT. In the past, floodplains in the NT were often flooded to a depth of 1 to 1.5 m as overflow took place alongside the natural watercourses which were narrow and sinuous. Nowadays, tens of thousands of people in these flood prone areas have been relieved of flooding risks. The flooding situation in the Northern and Northwestern NT will be further improved upon the completion of the Shenzhen River Regulation Project Stage III as well as the other new drainage channels in Ta Kwu Ling, Yuen Long and San Tin by early 2006.

上水村鄉村防洪抽水計劃
Sheung Shui Tsuen Village Flood Pumping Scheme

堡圍鄉村防洪抽水計劃
Pok Wai Village Flood Pumping Scheme

為減輕低窪地區鄉村的水浸情況，政府已為28條鄉村建成21個鄉村防洪抽水計劃，以提供防洪保護。這些鄉村由於地勢太低，即使進行河道治理工程亦無法改善當地的排水情況。現時超過165公頃地方的27,000居民因而免受水浸的威脅。除了最近在竹園村和下新圍完成的鄉村防洪抽水計劃外，我們在2005年年底前會完成另外六項新的鄉村防洪抽水計劃，使另外10條低窪地區鄉村的4,500名村民亦可免受水浸威脅。

To alleviate flooding in the low-lying villages, the Government have already completed 21 village flood pumping schemes to protect 28 villages where the ground topography of the village is so low that river training work cannot improve the drainage condition. Over 165 hectares of areas accommodating a population of 27,000 people are now being protected. Apart from the village flood pumping scheme recently completed at Chuk Yuen Tsuen and Ha San Wai, we will complete six more new village flood pumping schemes before end 2005 to extend the protection to another 10 low-lying villages with a population of 4,500 people.

洲頭村鄉村防洪抽水計劃
Chau Tau Tseun Village Flood Pumping Scheme

橋頭圍鄉村防洪抽水計劃
Kiu Tau Wai Village Flood Pumping Scheme

1997年6月4日旺角的水浸情況
Flooding in Mong Kok on 4.6.1997

施工中的大坑東蓄洪池
Construction of Tai Hang Tung Flood Storage Tank in progress

擬建的雨水排放隧道
Proposed stormwater transfer tunnels

市區的防洪成績

為解決市區的水浸問題，本署除了使用敷設地下排水管的傳統方法外，亦引入新的雨水排放系統改善方法，即蓄洪和雨水轉運兩個方法。這些方法可減少因進行坑道挖掘工程而對公眾造成的滋擾。

啟德雨水轉運計劃鑽挖機的鑽頭
Drilling head of boring machine for Kai Tak Transfer Tunnel

西九龍造價約28億元的排水系統改善工程，進展順利。這些工程包括長44公里的雨水渠、位於大坑東的100,000立方米蓄洪池，以及把雨水從九龍塘，輸送至啟德明渠長1.5公里的雨水排放隧道。這些工程預定於2004年至07年逐步完成，以期為西九龍230,000人提高防洪水平。此外，當局正進行造價約10億元的雨水排放系統改善工程的策劃工作，為九龍塘長1公里的雨水渠敷設工程，以及荔枝角長4.2公里的雨水排放隧道建造工程，作好準備。

當局已計劃為港島北部、荃灣、葵涌和東九龍易受水浸地區，進行造價約35億元的雨水排放系統改善工程計劃。為了減少在港島北部和荃灣進行挖掘工程對當地居民和道路交通所造成的滋擾，我們會採用雨水排放隧道，把雨水引到其他地方，使現時排水能力已不足的雨水排放系統，得以減輕負荷。

Flood Prevention Achievements in Urban Areas

To tackle the flooding problem in urban areas, apart from the traditional method of laying underground drainpipes, the Department has also introduced new drainage improvement approaches, namely stormwater storage and flow transfer. These approaches can minimise the disruption to the public due to trench excavation works.

In West Kowloon the construction of about $2.8 billion of drainage improvement works is in good progress. These include 44 km of stormwater drains, a 100,000 m^3 flood storage tank in Tai Hang Tung and a 1.5 km-long drainage tunnel for transferring stormwater from Kowloon Tong to the Kai Tak Nullah. All these works are scheduled to be completed progressively from 2004 to 2007 to raise the flood protection standard for a total population of 230,000 people in West Kowloon. In addition, the planning of about $1 billion of drainage improvement works is underway to provide 1 km of stormwater drains in Kowloon Tong and a 4.2 km-long drainage tunnel in Lai Chi Kok.

For the flood prone areas in the Northern Hong Kong Island, Tsuen Wan, Kwai Chung and East Kowloon, drainage improvement projects costing about $3.5 billion have been planned. In order to minimize the disturbance to the local residents and road traffic due to trench excavation in the Northern Hong Kong Island and Tsuen Wan, we are planning to construct stormwater drainage tunnels in order that stormwater would be diverted away to relieve the loading to the existing drainage systems that have insufficient capacity.

排水系統的操作和保養

本署負責為共長 2,429 公里的人工河道、雨水渠和暗渠，以及 21 項鄉村防洪抽水計劃，進行保養。為確保排水系統正常操作，我們會進行預防性保養計劃，定期檢查、清理和維修排水系統，尤其着重屬於水浸黑點的地區。

在 2002 至 03 年度，我們曾檢查過的排水渠、人工河道、暗渠和水道，共長 1,613 公里，並在其中 440 公里進行清理，所清除的淤泥共 56,513 立方米，需費約 1 億 3 千多萬元。附錄 C 載有過去數年所進行的操作和保養工程。

我們在去年成功消除了 4 個水浸黑點。這是由於有關的雨水排放系統改善工程已陸續完成。至於餘下的 62 個水浸黑點，我們會密切監察其水浸情況，並及時實施臨時措施，以確保在長期措施完工前而存在的水浸風險得以減輕。我們會與食物環境衛生署和路政署保持密切聯繫，以確保路旁的集水溝和排水井經常有人清理，並能妥善運作。

Operations and Maintenance of the Drainage System

A total of 2,429 km of engineered channels, stormwater drains and culverts and 21 village flood pumping schemes are maintained by the Department. To ensure the proper operation and functioning of the drainage system, there is a preventive maintenance programme which includes regular inspection, desilting and repair of the drainage system, particularly at locations categorized as flooding blackspots.

地區性改善工程—河岸穩固工程（左圖）和清理淤泥工程（右圖）
Local improvement works - bank stabilization (left) and desilting (right)

In 2002/03, 1,613 km of drains, engineered channels, culverts and watercourses were inspected and 440 km of them were cleansed with 56,513 m^3 silt removed at a cost of about $135 million. The operations and maintenance works carried out in the past years are shown in Appendix C.

Last year, we have successfully removed 4 flooding black spots. This is attributable to the progressive completion of relevant drainage improvement works. For the remaining 62 flooding blackspots, we will closely monitor the flooding situation and ensure interim measures are timely implemented to mitigate the flood risk that may persist until the long-term measures are completed. We will maintain a close connection with the Food and Environmental Hygiene Department and Highways Department to ensure that the roadside gullies and drainage catchpits are well attended to and in good working condition.

定期檢查排水渠
Regular inspection of drain

緊急清理淤塞的排水渠
Emergency clearance of blocked drain

我們亦致力應付在大雨和天氣惡劣時的緊急情況。這些工作包括監察所有主要防洪設施和地區性防洪警報系統的運作、就水浸投訴即時展開調查和採取緊急搶修行動等。我們亦有安排經常視察所有水浸黑點，以確保淤塞或損壞的排水渠及雨水渠入口可及時得以糾正。

At times of heavy rainfall and severe weather conditions, the Department is also committed to dealing with emergency situations. These include monitoring the operation of all major flood control facilities and local flood warning systems, conducting immediate investigation on flooding complaints and carrying out urgent remedial actions. Arrangements have also been made to frequently inspect all flooding blackspots to ensure that any blockages or damage to drains and stormwater inlets are rectified in a timely manner.

關於地區性防洪警報系統，我們在2002至03年度增設了6套。現時全港共有13套地區性防洪警報系統在運作中。在水位到達預定警戒線時，系統便會以響號或自動接駁至村代表的電話傳送水浸警報，向這些易受水浸的鄉村發出預警。防洪警報系統只是一項臨時措施，用以在長期改善工程完成前，盡量減少水浸帶來的損失。

As regards the local flood warning systems, we have installed six new systems in 2002/03. A total of 13 local flood warning systems are now in operation to alert flood prone villages when the floodwater reaches a predetermined level. The warnings are disseminated through flood sirens or through automatic telephone calls to the village representatives. The flood warning systems are interim measures with which flood losses could be minimized before the long-term improvement works are completed.

使用響號發出水浸警報
Sirens for disseminating flood warning

水位探測器
Water depth sensor

竹園村／下新圍鄉村防洪抽水計劃

竹園村及下新圍是新界西北地區兩條位處低窪地方的鄉村。歷史上，竹園村／下新圍是人所共知的水浸黑點，在颱風吹襲和暴雨期間容易發生水浸。在過去，洪水超過1米深的水浸事件經常發生。在1998年，設於下新圍開明學校的立法會選舉投票站更由於水浸而需臨時關閉。

為解決水浸問題，政府在竹園村／下新圍實施鄉村防洪抽水計劃。計劃的主要原則是要建造外圍防洪堤，並在堤壩範圍內的鄉村設置雨水渠系統，以便收集和輸送雨水至蓄洪池。當蓄洪池的水量到達預定的水位時，便會被抽往鄰近的牛潭尾排水道。

鄉村防洪抽水計劃的建造工程在2000年11月開始施工，需時約兩年半完成，並已在2003年3月投入運作。該計劃完工後，竹園村及下新圍的水浸問題已消除，政府解決新界水浸問題的計劃因而又跨進了一步。

Chuk Yuen Tsuen / Ha San Wai Village Flood Pumping Scheme

Chuk Yuen Tsuen and Ha San Wai are two low-lying villages in the Northwestern NT. Historically, Chuk Yuen Tsuen and Ha San Wai were well-known flooding black spots and the villages were prone to flooding during typhoons and heavy rainstorms. There were many flooding incidents in the past with flood depth exceeding 1 m. Amongst these incidents was the temporary closedown of the polling station at Hoi Ming School in Ha San Wai for the Legislative Council election in 1998 due to flooding.

In order to tackle the flooding problem, Government has implemented a village flood pumping scheme at Chuk Yuen Tsuen / Ha San Wai. The main principle of the scheme is the formation of an external flood protection embankment. Internal stormwater drainage system is provided inside the villages within the embankment to collect the rainwater and convey it to a floodwater storage pond. When the water level in the storage pond reaches a pre-determined level, water inside the storage pond will be pumped out to the adjacent Ngau Tam Mei drainage channel.

實施鄉村防洪抽水計劃前開明學校和下新圍的水浸情況
Flooding at Hoi Ming School and in Ha San Wai before implementation of the village flood pumping scheme

Construction works of the village flood pumping scheme commenced in November 2000. It took about 2.5 years to complete and the scheme was put into operation in March 2003. With the completion of the scheme, the flooding problem in Chuk Yuen Tsuen and Ha San Wai has been removed and the scheme has brought about a step forward in the Government's plan to solve the flooding problems in the NT.

竹園村／下新圍防洪抽水站及蓄洪池
Chuk Yuen Tsuen / Han San Wai flood pumping station and floodwater storage pond

在市區進行的建造工程

我們的工程不時需要在交通極為繁忙的街道及人口稠密的市區進行。在這些工程的施工期間，不免會引起市民大眾的關注，例如對商戶生意造成干擾，對行人帶來不便，對交通及環境造成影響等。

在繁忙的市區進行工程的例子包括西九龍雨水排放系統改善工程和中西區及灣仔西部污水收集系統工程。為減少對鄰近店舖的干擾，我們會盡量提供行人過路穿過施工地盤範圍以進出店舖。此外，為方便店舖的日常運作，如裝卸貨物的需要，我們在施工期間實施了特別的臨時交通安排，及在行人路預留足夠闊度以方便行人經過。同時，地盤亦設有一條24小時的投訴熱線，張貼在工地顯眼處的布告板上，以便投訴可獲即時處理。

有關渠務工程期間的氣味問題，我們已加強紓緩措施，包括以密封的分流管把上游水流截往下游。如發現有地下水浸入，我們亦會即時安排泵走，以保持工地乾爽和杜絕蚊患。另外，我們會定期清理現有溝渠，及在壕坑噴灑除臭劑。在挖掘工程時，我們會在工地鄰近的店舖前築起帆布幕以阻隔氣味，並會在每天工作完畢後把壕坑用帆布覆蓋，防止氣味傳出。

Construction Works in Urban Areas

There are occasions when our projects necessitate works in heavily trafficked streets and densely populated urban areas. During the implementation of these projects, there were a lot of concerns raised by the public, e.g. disruption to business, inconvenience to pedestrians, traffic impacts, environmental impacts, etc.

在西貢街店舖旁拉起帆布，阻隔氣味
Canvas sheets were erected along shops at Saigon Street to shield against odour

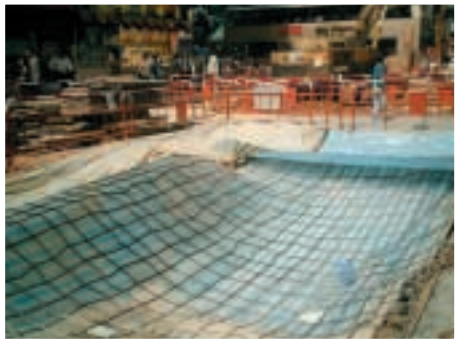
在登打士街店舖旁拉起帆布，阻隔氣味
Canvas sheets erected along shops at Dundas Street to shield against odour

The West Kowloon Drainage Improvement and Central Western and Wan Chai West Sewerage are typical examples of works in congested urban areas. To minimize the potential disruption to the business of the shops nearby, pedestrian crossings work fronts were provided allowing proper access to the shops. In particular, in order to facilitate daily operations of the shops, such as loading requirements, temporary traffic arrangements were also implemented so that construction works could be carried out without seriously affecting normal business of the shops. We have maintained adequate width of footpath to minimize the nuisance caused to the road users during the construction stage. In order to respond to and to deal with any complaints in a timely manner, we have set up a 24-hour complaint hotline with the number displayed in prominent positions on site.

With a view to minimizing the potential odour nuisance to the nearby residents and shops, various mitigation measures were implemented, which included intercepting the flow at an upstream location and diverting the flow downstream in a concealed pipe. Ground water, if any, would be pumped downstream so as to enhance the site hygiene and avoid breeding of mosquito. Regular cleansing of the existing drains and spraying of deodourising powders to the excavated trench were carried out throughout the construction period. Further, we had installed vertical canvas sheets in front of the shops adjoining the work site while the excavation trench would be properly covered after work each day to shied against the odour.

由於工程在繁忙的市區進行，我們盡可能採用無坑挖掘法，來敷設橫跨繁忙路口的污水渠。為減輕對市民造成滋擾及對交通的影響，我們在道路上分段進行工程。我們每日均會把挖掘料及碎屑蓋好或運走，以確保工地的衛生。

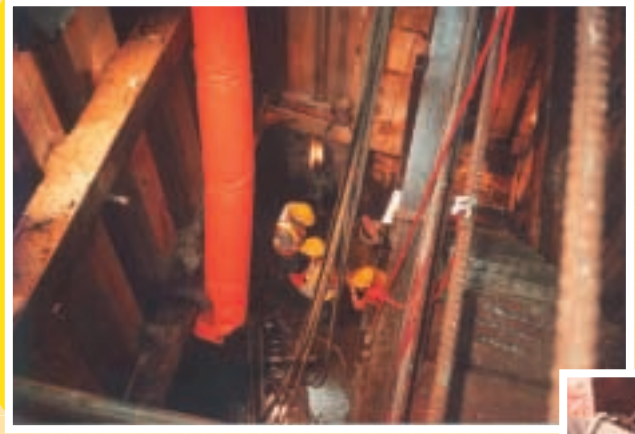
As the works were carried out in the busy urban areas, trenchless method for laying sewers crossing the busy road junction were adopted whenever feasible. To minimize the nuisance to the public and reduce the traffic impact, works are being carried out section by section along the road. Excavated materials and debris were covered up and transported off site daily to ensure the hygienic condition of the works site.



以帆布覆蓋登打士街的渠坑
Covering up trench with canvas sheets at Dundas Street

在登打士街灑水，防止塵土飛揚
Spraying of water to prevent dust at Dundas Street

於施工期間，擴闊一段西貢街的行人路
Temporary widening of footpath in Saigon Street



在皇后大道西的頂管豎井
Jacking pit at Queen's Road West

在皇后大道西進行的頂管方法敷設管道工程
Pipejacking works inside sleeve pipe at Queen's Road West

改善啟德明渠內的旱季污水渠—工程前（左圖）及工程後（右圖）
Improving Dry Weather Flow Channel inside Kai Tak Nullah - before (left) and after (right)

東九龍啟德明渠、佐敦谷明渠和翠屏明渠的美化及環境改善工程

多年以來，我們曾接獲市民對啟德明渠、佐敦谷明渠和翠屏明渠的景觀及環境不少投訴。黃大仙和觀塘區議會以及部分立法會議員也曾多次要求本署美化這些明渠。

我們發現啟德明渠的環境問題是由旱季污水渠內的污水引起。由於在可見的將來，有關的污染問題仍無法解決，把旱季污水渠改建為密封的管道是較為有效解決問題的方法。我們遂邀請了區議會議員一起視察啟德明渠，並把這個想法告訴他們。結果獲他們積極的回應，有關建議便付諸實行。整項改建工程於 2003 年 4 月完成，需費約 330 萬元。

與此同時，我們向區議員建議把沿啟德明渠旁邊呆板的舊石牆改建為花槽護欄。花槽護欄連同其中栽種的灌木可有效遮擋行人的視線，使他們看不到明渠。整項工程已完成，需費約 140 萬元。

Aesthetic & Environmental Improvements of the Kai Tak, Jordan Valley and Tsui Ping Nullahs in East Kowloon

Over the years, we have received many complaints from the public against the poor aesthetic and environmental problems in the Kai Tak, Jordan Valley and Tsui Ping Nullahs. The Wong Tai Sin and Kwun Tong District Councils (DCs), and some Legislative Council members had repeatedly asked the Department to deck the nullahs.

In the Kai Tak Nullah, we found the environmental problem arose from the polluted water flowing within the open dry weather flow channel. As the water pollution problem could not be resolved in the foreseeable future, it would be more effective to convert the open dry weather flow channel into a closed conduit. We invited DC members to visit the Kai Tak Nullah with us and introduced this idea to them. They responded positively to our idea and the proposal was put into action. We completed the conversion works in April 2003 at a cost of about $3.3 million.

At the same time, we proposed to the DC members to replace the old and dull granite parapet wall along the Kai Tak Nullah with planter parapet. The planter parapet together with the shrubs will effectively shield the nullah from the view of the pedestrians. We completed the works at a cost of about $1.4 million.

啟德明渠（彩虹道一段）—改善工程前（左圖）及改善工程後（右圖）
Kai Tak Nullah (Choi Hung Road Section) - before (left) and after (right) improvement works

啟德明渠（東江路一段）改善工程前（左圖）及改善工程後（右圖）
Kai Tak Nullah (Tung Kwong Road Section) - before (left) and after (right) improvement works

我們在佐敦谷明渠及翠屏明渠同時應用類似的概念。在翠屏明渠我們設置美化市容地帶而非花槽護欄，而在佐敦谷明渠的三合土斜坡，則以噴式植被技術鋪上植物。為緩和明渠底沉澱物發出的氣味，我們已設置 300 毫米高的堤堰，蓄儲渠水，使部分乾旱的渠底不致露出。

在進行上述工程後，這些明渠的景觀已有所改善，環境問題也有效得以紓緩。

We applied similar concept to the Jordan Valley and Tsui Ping Nullahs at the same time. In Tsui Ping Nullah, we provided amenity strip instead of planter parapets. In Jordan Valley Nullah, we provided vegetation to the concrete slopes above the nullah wall by the Hydromulching technique. To abate the odour generated from sediments deposited on the nullah floor, we provided 300 mm high weirs to retain water to cover up the otherwise partially dry nullah floor.

With the implementation of these works, the aesthetic quality of the nullahs had improved and their environmental problems had been effectively mitigated.

翠屏明渠—改善工程前（右圖）及改善工程後（左圖）
Tsui Ping Nullah - before (right) and after (left) improvement works

佐敦谷明渠—改善工程前（右圖）及改善工程後（左圖）
Jordan Valley Nullah - before (right) and after (left) improvement works