Water Leakage Detection Survey

漏水探測方法多
正確運用最穩妥

Publisher:

UTILITY TRAINING INSTITUTE
管綫學院

Accreditation organizations:

HKIUS 香港管綫專業學會
Hong Kong Institute of Utility Specialists

HKURC 香港管綫管理研究中心
Hong Kong Utility Research Centre

Funding Organization:

COMMERCE AND ECONOMIC DEVELOPMENT BUREAU THE GOVERNMENT OF HONG KONG SPECIAL ADMINISTRATIVE REGION

Supporting organization:

CCPDC社建
Community & Construction Professionals' Development Centre
社區、建造及工程專業發展中心

Why detect leakage of water mains?

Water, especially fresh water, is an invaluable resource. However, due to aging and lack of maintenance of water pipes, vast amount of water leaks from the deteriorated pipes. This wastes our resource and also leads to potential incidents. Pipe burst is often news headlines and it may cause traffic congestion and inconvenience to the public. Finding out the leak positions of the pipes reduces the waste of resources effectively.

為甚麼要為水管測漏?

水， 尤其食水， 乃珍貴的社會資源。 但由於香港的水管開始老化且日久失修， 大量食水經由損壞的水管滲漏， 既浪費資源亦容易導致意外。 爆水管或導致道路損毀及引起大眾不便。 若能及時找出漏水的位置， 可有效地減少水資源的流失。

What is water leakage detection?

When water distribution system is operated under pressure, any leak in the system generates a distinctive acoustic signal. The sound wave can be detected by various methods. The leak point is usually where the sound wave peaks. Detection machines are widely adapted nowadays while the traditional method of manual listening is still employed.

甚麼是漏水探測?

若加壓的配水管有滲漏之處， 該處會發出獨特的音頻。 這些音頻能以不同的方法探測。 而發出最高頻率之處便通常是漏水的位置。 現今的漏水探測多以機器輔助， 但人手聽漏仍廣受採用。

LNC survey

Leak Noise Correlation Survey (LNC)
The operator employs a leak noise correlator to pinpoint leak location. This method is more scientific as it relies on electronic detection instead of manual listening.
Steps and points to note:

1. Alignment of the pipes shall be traced by utility survey/ utility mapping.
2. The two sensors shall be attached on the contact points of either sides of the pipe.
3. Graph generated by the correlator shall be interpreted carefully, though usually the location with the peak frequency is the suspected leak point.

漏水噪聲相關儀

漏水噪聲相關儀能自動找出水管漏水的位置。相關儀利用電子探測代替人手聽漏，較科學化。
步驟及注意事項：

1. 探測水管的位置及路由。
2. 測漏儀的感應器應接駁水管兩邊的水掣／水龍。
3. 雖然峰值的位置多為嫌疑漏水位置，但同時亦必須考慮其他因素，小心分析顯示圖。

Mechanic Leak Detectors (MLD)

MLD amplifies the leak sounds so that the operator can hear them and find out the leak point. As manual listening and decision-making are keys to the accuracy of survey, accredited and experienced personnel shall be employed. Besides, MLD can be employed to confirm the result of LNC.

Steps and points to note:

1. Alignment of the pipes shall be traced by utility survey/utility mapping.
2. Listen to the valves/ ground along the alignment of the pipe at certain interval to locate the leak point.
3. Repeated listening shall be performed if the exact leak point is unsure.

機械聽漏儀

機械聽漏儀將漏水聲放大，檢測人員可循聲尋找漏水點。此方法全賴人手聽漏，檢測人員的判斷乃準確程度的關鍵，故檢測人員必須為合資格士及具豐富相關經驗。另外，此方法亦可為漏水噪聲相關儀的檢測結果作進一步確認。

步驟及注意事項：

1. 探測水管的位置及路由。
2. 沿著水管的路由，每隔一段距離，將聽漏儀緊貼水制／地面細聽，直止找到漏水點。
3. 若不確定漏水的準確位置，應反覆細聽，以提高準確度。

Noise logging

There are two types of noise logging, one is temporary and the other is permanent. Temporary noise logging is usually set at night for at least 2 hours to avoid the users' consumption so that a more accurate result can be obtained. Permanent noise logging is used to monitor the system. Loggers shall be deployed throughout the distribution system in each Waste Detection Area (WDA) or District Metered Area (DMA). They shall be able to provide continuous monitoring of leakage and give immediate response when required.

噪聲紀錄儀

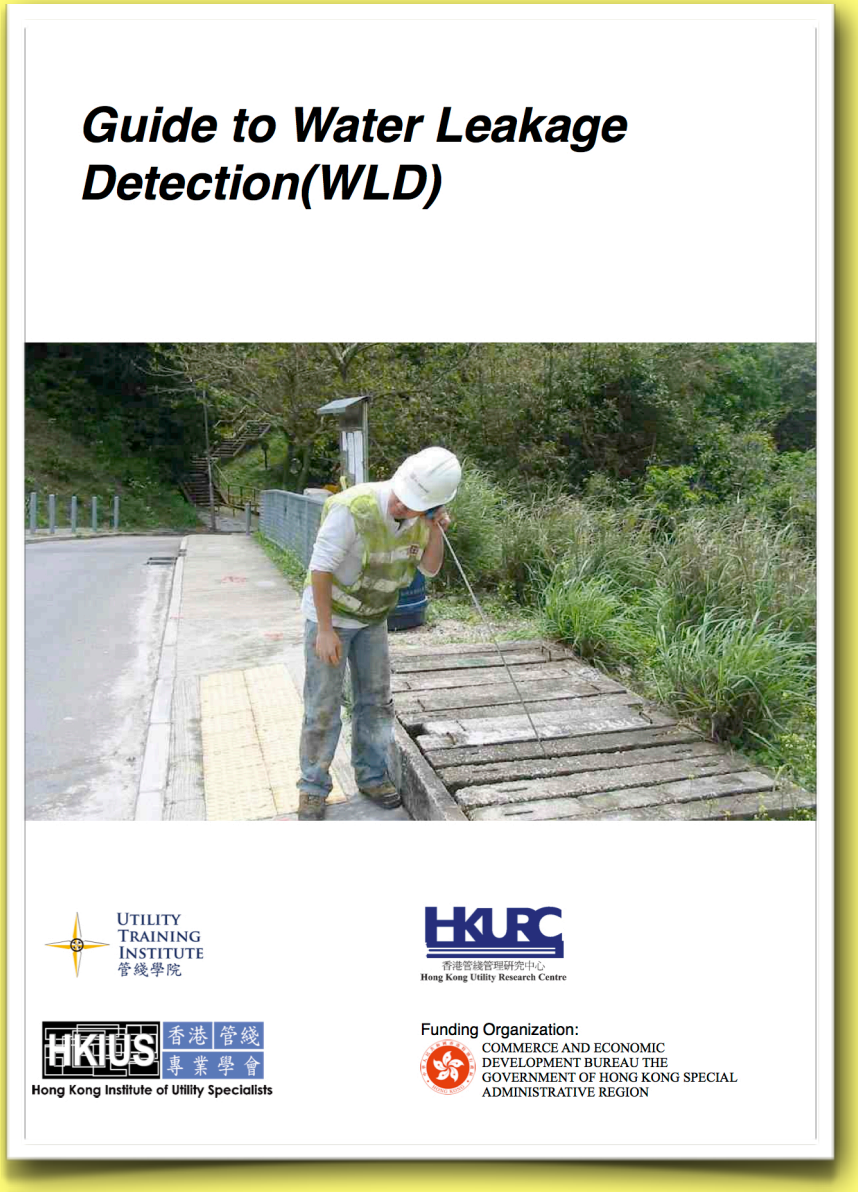
噪聲紀錄儀用途有二: 短暫探測和長期監測。 短暫探測多於夜間進行， 以減低用水造成的影響， 探測最少為期兩小時。 長期監測用於監察漏水情況。 將紀錄儀安裝於測漏區或計量區， 長期監察有否漏水的情況， 若有發現疑似漏水的位置， 便會即時作出通知。

Further Information

Documents are available for further details of the survey. The Hong Kong Institute of Utility Specialists (HKIUS) has prepared Guide to Water Leakage Detection Survey. This document provides more detailed information on the process and standards for Water Leakage Detection. Another document 'Specification for Water Leakage Detection Survey (WLD)' has been proposed by the Hong Kong Institute of Utility Specialists (HKIUS) and gives the requirements for survey work. Both the guide and specification can be accessed via http://hkius.org.hk.

更多資訊

由香港管綫專業學會編製出版的《漏水探測指南》為檢測的步驟和標準提供詳盡資料。另外，同樣由香港管綫專業學會編製的＜漏水探測規格＞，則詳述了檢測的各個部分的要求。該指南及規格均可透過香港管綫專業學會網頁http://hkius.org.hk查閱。



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