Best Practices Award — Silver Award
最佳管理實踐獎 — 銀獎

Electrical and Mechanical Services Department
機電工程署

GWIN - A Key Contributor to Smart City Management in Hong Kong
政府物聯通 (GWIN)：推動智慧城市卓越管理

Report Summary

Provided by Electrical and Mechanical Services Department, HKSAR Government

Government - Wide IoT Network (GWIN): Driving Smart City Excellence

Transforming Facility Management

Electrical and Mechanical Services Department (EMSD) has developed the Government-Wide Internet of Things Network (GWIN), a territory-wide infrastructure enabling real-time monitoring of electrical and mechanical facilities across more than 8,000 government buildings. Since its launch in 2018, GWIN has shifted operations from manual inspections and complaint-driven responses to proactive, data-driven intelligence. By March 2026, over 500 outdoor gateways and 15,000 sensors had been deployed, achieving 95% outdoor coverage and serving more than 20 departments.

Enhancing Service Quality and Efficiency

GWIN has streamlined maintenance by reducing reliance on labour-intensive routines. Applications such as flood monitoring, smart toilets, smart parking, and renewable energy optimization directly improve public safety, convenience, and sustainability. The system provides continuous visibility into facility performance, laying the foundation for predictive maintenance and energy optimization.

Innovation and Agility

As Hong Kong's first government-owned IoT infrastructure, GWIN offers secure, shared connectivity across departments. Its battery-powered sensors allow rapid deployment in remote or emergency sites. During the COVID-19 pandemic, sensors were installed in hospitals within days to monitor extended wards. Flood sensors now provide 24/7 alerts during typhoons, replacing hazardous manual inspections. Flexible deployment has also supported public event management and emergency fault response.

報告摘要

本報告由香港特別行政區政府機電工程署提供

革新設施管理

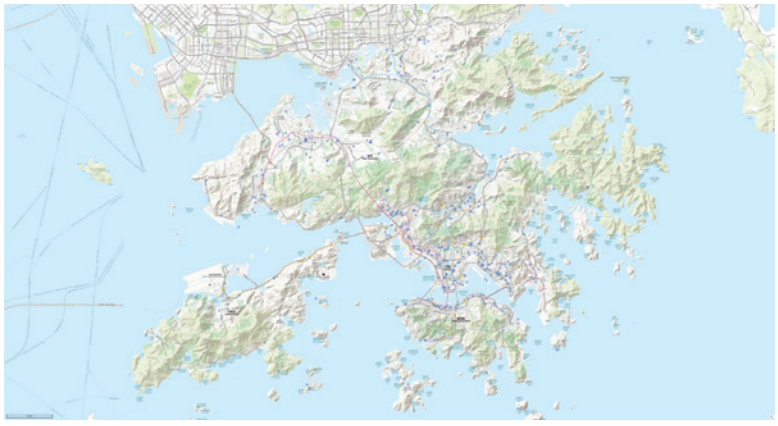
機電工程署自2018年起建立「政府物聯通」(GWIN)的網絡，為全港逾8,000座政府建築提供即時遙距監察。GWIN徹底改變了傳統依靠人手巡查及投訴反應的模式，推動由被動轉向主動、數據驅動的智能管理。截至2026年3月，已安裝超過500個網關及15,000個感應器，覆蓋率達95%，並服務超過20個政府部門。

提升服務質素與效率

透過智能監察取代勞動密集的巡查工作，GWIN顯著提升運作效率及公共服務水平。應用範疇包括防洪監測、智能廁所、智慧泊車及可再生能源效能優化，既保障市民安全，亦提升便利性，並支持香港邁向碳中和目標。系統提供持續的設施表現數據，為未來的預測性維修及能源優化奠定基礎。

創新與靈活性

GWIN是香港首個由政府自建及營運的物聯網基建，提供跨部門共享及安全的連接平台。電池供電感應器可迅速部署於偏遠或緊急場地。疫情期間，感應器在數日內安裝於醫院延伸病房，監測環境狀況；同時，超過200個防洪感應器在颱風期間提供即時水位警報，取代高風險的人手巡查。靈活部署亦支援大型公共活動及緊急事故處理。



Over 500 GWIN gateways are widely distributed across various districts in Hong Kong
超過500個「政府物聯通」網關廣泛分佈於香港各區

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Valuing People and Stakeholders

More than 500 EMSD staff have received IoT training through workshops and a dedicated knowledge centre. Standardized guidelines and flowcharts support adoption across divisions. Externally, GWIN engages over 20 departments, industry partners, and the community. The "Smart@GWIN" IoT Application Challenge has inspired students to co-create smart city solutions, strengthening Hong Kong's future talent pipeline.

Delivering Organizational and Societal Value

GWIN has expanded from pilot projects to citywide coverage, with application profiles growing from 20 to over 500. It has become a cornerstone of EMSD's strategic vision, enhancing service quality, resilience, and sustainability. By enabling smarter facility management and fostering innovation, GWIN demonstrates excellence in Total Quality Management and contributes to Hong Kong's competitiveness as a smart city.



Flood sensors provide real-time water-level alerts during typhoons
防洪感應器在颱風期間提供即時水位警報

重視人才與持份者

GWIN團隊已為超過500名員工提供物聯網培訓，並設立知識共享平台及標準化指引，促進跨部門應用。對外方面，GWIN與20多個政府部門、業界及社區合作，舉辦研討會及比賽。「Smart@GWIN」物聯網應用挑戰賽吸引學生參與，共同設計智慧城市方案，培育未來人才。

組織與社會價值

GWIN由試點逐步擴展至全港覆蓋，應用檔案由20個增至超過500個，成為機電工程署策略願景的重要基石。它不僅提升服務質素與韌性，更推動可持續發展。透過智能化設施管理及創新文化，GWIN展現全面優質管理的卓越成效，並鞏固香港作為智慧城市的競爭力。

Report from the Board of Examiners

The Board of Examiners extends its sincere congratulations to the Electrical and Mechanical Services Department (EMSD) on receiving the Best Practices Award - Silver Award for the Government-Wide Internet of Things Network (GWIN). This honour recognizes the team's visionary commitment to operational excellence and strategic innovation in transforming public facility management.

The Board was particularly impressed by the initiative's tangible delivery of value and results. GWIN has grown from a pilot with 50 gateways to over 900, achieving 95% territorial coverage and connecting more than 15,000 sensors across 20 government departments. This shift from reactive inspections to proactive, data-driven intelligence has enhanced efficiency, evidenced by a 40% reduction in gateway unit cost and a robust data foundation for future AI applications.

Beyond departmental efficiency, GWIN has delivered significant societal value. The project has improved public safety through flood monitoring at 200+ locations and demonstrated agility during the pandemic by deploying environmental sensors in hospitals. The "Smart@GWIN" IoT Application Challenge are also inspiring the next generation and building a talent pipeline for Hong Kong's smart city ecosystem. The Board commends EMSD for this achievement and encourages continued innovation in public service excellence.

評審委員會報告

評審委員會衷心祝賀機電工程署憑藉「政府物聯通」（GWIN）：推動智慧城市卓越管理榮獲最佳管理實踐獎銀獎。此項殊榮肯定了該部門在革新公共設施管理方面，對卓越營運及策略創新的遠見與投入。

評審委員會尤其欣賞該項目在創造價值及成果方面的具體表現。GWIN 已由最初 50 個網關的試驗計劃，擴展至超過 500 個，覆蓋全港 95% 的範圍，並連接 20 個政府部門超過 15,000 個感應器。這種從被動巡查轉變為主動、以數據驅動的智能管理模式，有效提升了效率，網關單位成本降低 40%，並為未來人工智能應用建立了穩固的數據基礎。

除了提升部門效率，GWIN亦帶來了顯著的社會價值。該項目透過在超過 200 個地點進行水浸監測，超過200個防洪感應器在颱風期間提供即時水位警報，提升了公眾安全；並在疫情期間於醫院安裝感應器監測環境狀況，展現了靈活的應變能力。此外，「Smart@GWIN」物聯網應用挑戰賽亦啟發了下一代，為香港智慧城市的發展建立人才庫。評審委員會讚揚機電工程署的卓越成就，並鼓勵其繼續在公共服務方面創新求進。