

Unveiling Tomorrow's Smart City Model

Top government officials, surveyors and related professionals congregated at The Hong Kong Institute of Surveyors Annual Conference 2016 to exchange insights and best practices on the future of urban planning.

Ross Lai

Photo: HKIS and SCMP



“Our three-pronged objective [in Kowloon East] is to enhance connectivity, improve the environment, and to release the area’s development potential.”

The HKIS once again underscored the importance of “smart city development” to both town planning professionals and the general public by selecting this as the topic for its annual conference for the third consecutive year – with this year’s focus on transforming Kowloon East into Hong Kong’s second Central Business District (CBD2).

The conference, held on 10 September 2016, was attended by some 300 professionals and featured as its Guest of Honour the Secretary for Development of the HKSAR Government Mr Paul MP Chan, GBS, MH, JP.

Kicking off the conference, Mr Chan highlighted that Kowloon East is transforming into a vibrant core business district under the Energising Kowloon East Initiative. “With the announcement in 2015 that Kowloon East will become a pilot area for exploring the development of a smart city, the potential for Kowloon East is boundless,” he said.

He went on to explain how the CBD2 strategy incorporates elements of “connectivity, branding, design and diversity”, with the aim of CBD2 to create a walkable and accessible Kowloon East while branding the area as Hong Kong’s second CBD of regional significance. “We invite the private sector to work with the government in creating a liveable, smart and sustainable district that meets the needs of the community,” he said.

He also noted that the government intends to transform the Kai Tak Development Area into Hong Kong’s hub for heritage, environmental, sports and tourism activities.

This would encompass five distinct themes: sports, people, sustainability, environmental friendliness, and attraction in terms of urban form.

“We are transforming the Kowloon Bay and Kwun Tong areas – Hong Kong’s traditional manufacturing bases – into part and parcel of a model city,” Mr Chan said. “Specifically, this area encompasses multipurpose sports facilities, a cruise terminal, and a metro park. Our three-pronged objective here is to enhance connectivity, improve the environment, and to release the area’s development potential.”

The power of working together

Addressing the audience on collaboration between stakeholders, Ms Bernadette Linn, Director of Lands,

HKSAR Government, gave her perspective on strategies for developing a smart city.

She noted that, in the 2015 Policy Address, the Chief Executive announced that the government would use Kowloon East as a pilot area to explore the feasibility of developing a smart city. “The Lands Department is ready and well prepared to make significant contributions to the ‘3-IN’ areas of a smart city: Infrastructure, Information and Intelligence,” she said.

In terms of “infrastructure”, Ms Linn said, the Lands Department had been contributing to the establishment and maintenance of the territory-wide geodetic network. It was also supporting the Development Bureau in taking forward the Common Spatial Data Infrastructure (CSDI) initiative that facilitates the development of a spatially enabled smart city.

In this endeavour, she said, data centres play a key role. “Hong Kong is a prime location for setting up data centres in Asia-Pacific. Indeed, the Data Centre Risk Index ranked Hong Kong as the safest Asian city for data centres from 2011 to 2013.”

When it comes to “information” – the core element of smart city development – the Lands Department has been consolidating and disseminating its map products and various spatially enabled data for use by the government and community.

“We have launched a new dimension of digital map product, namely 3D spatial data,” Ms Linn said. “This sophisticated 3D data model provides more comprehensive information to describe our city, and renders good support to a series of innovative applications, such as 3D city-walk simulation, virtual reality and augmented reality.”

As for “intelligence”, the Lands Department has developed various smart applications with services and intelligence for different parties.

“The Lands Department has further extended the geospatial information service to the general public by launching the GeoInfo Map, which allows users to search for locations and facilities in Hong Kong and obtain relevant geospatial information contributed by 26 government departments,” Ms Linn said.

“The Lands Department will also help the EKEO [Energising Kowloon East Office] to optimise land

“ 3D spatial data renders good support to a series of innovative applications, such as 3D city-walk simulation, virtual reality and augmented reality. ”

use in transforming Kowloon East into another central business district.”

Planning a future model city

Mr C K Yip, District Planning Office/Kowloon, Planning Department, HKSAR Government, shared with the conference audience his perspective as a town planner.

“Matching Linn’s 3-INs, I have my 3 Cs: creating capacity for growth, creating places, and creating opportunities,” he said.

“In creating growth capacities, we are expecting two new MTR stations to be commissioned – To Kwa Wan and Kai Tak City. The major office cluster planned in the city centre around these two stations alone will create a critical mass for an office node with a total commercial GFA of about 0.9 million square metres.”

Mr Yip then discussed “creating places”. “The planning principle of creating focal points and nodes for different types of activities is also strongly advocated in Kowloon East. For instance, in Kwun Tong, there are large-scale anchors of regional significance.”

Lastly, he discussed “creating opportunities”. A good example is the creation of the Kai Tak River, he said. Formerly known as Kai Tak Nullah, it is the main drainage channel for the collection of storm water in Kowloon East, measuring 2.4 km.

The government, Mr Yip explained, will turn the nullah into an attractive green river corridor, along with leisure and public activities serving the community while enhancing the flood relief capacity of Kowloon East.

Smart and green development

To illustrate many of the principles and objectives outlined by the previous speakers, Ir Wong Wai-man, Project Manager (New Territories East) of the Civil Engineering and Development Department, HKSAR Government, presented an example of smart and green initiatives at the conference.

The Anderson Road Quarry, Wong explained, had, until recently, been contributing to Hong Kong’s construction industry by supplying aggregate, asphalt, stone and concrete. Having accomplished its mission, this 40-hectare site would now take up

a new mission – to supply land for residential and commercial development.

“Three main categories of smart and green initiatives will be implemented, namely, smart water management, smart energy, and smart mobility,” Ir Wong said.

The Drainage Services Department, Ir Wong explained, has a three-pronged approach to flood control: interception at upper catchment, storage at middle catchment, and upgrading of storm water drainage network at lower catchment. As for smart energy, solar panels would be installed on the cover of the site’s public transport terminus and the roof of the ventilation room for the underground storm water storage tanks.

As for smart mobility, there would be a well-planned pedestrian and cycling network to reduce reliance on vehicular transport. Meanwhile, interactive urban mobility will be promoted by bringing together all travel modes and transport-related services to form a comprehensive system supported by integrated travel information.

3D mapping in Singapore

The conference also featured an industry heavyweight from Singapore: Dr Victor Khoo, Deputy Director of the Land Survey Division, Regulatory Cluster, with the Singapore Land Authority.

Dr Khoo outlined Singapore’s whole-of-government initiative to create and maintain a high-resolution nationwide 3D map to support the increasing needs in government agencies for up-to-date 3D data.

“Our 3D mapping project involves airborne and ground-based data acquisition and data modelling. Currently we have completed the airborne data acquisition, and moving forward, the ground-based 3D data such as roads, bridges, tunnels and street furniture will complete the entire 3D digital built environment and form a seamless 3D virtual experience of Singapore.”

This, Khoo said, would provide endless possible applications such as city planning, asset inventory management, tree management, autonomous vehicles, heritage preservation, wind simulation, and development planning.

The article is published courtesy of Classified Post.

「我們 [在九龍東] 的三項目標是加強整合、改善環境、釋放當區發展潛力。」

洞悉未來 智慧城市模式

多位政府高官、測量師、相關專業人士齊集香港測量師學會年度研討會 2016，就未來城市規劃交流灼見，分享有效實踐經驗。

Ross Lai

香港測量師學會連續三屆年度研討會以「智慧城市發展」為主題，向城市規劃專業人員及普羅大眾一再強調發展智慧城市的重要意義。今年的焦點是將九龍東轉型為香港第二個商業中心區 (CBD2)。

研討會於二零一六年九月十日舉行，約有 300 名專業人士與會，並邀請香港特別行政區政府發展局局長陳茂波先生，GBS, MH, JP 擔任主禮嘉賓。

會議伊始，陳局長強調在起動九龍東計劃下，九龍東正轉型為一個繁榮興旺的核心商業區。「二零一五年，政府宣佈以九龍東為智慧城市發展試點，令該區蘊藏無限潛力。」

陳局長繼而解釋，政府的 CBD2 發展策略包含了「連繫、品牌、設計、多元化」元素，務求營造方便行人的環境、建立四通八達的交通網絡，令九龍東成為香港的第二個地區級商業樞紐。「我們邀請私人發展商與政府合作，創造一個舒適宜人、符合可持續發展原則、迎合市民所需的智能環境。」

陳局長亦提及，政府擬將啟德發展區改造為彙集歷史文化、環保、體育兼旅遊特色的新焦點，集運動、人文、可持續發展、環保、旅遊於一身，塑造五合一的都市形式。

「九龍灣和觀塘乃是香港傳統製造業的基地。我們正著力改造這兩區，令它們成為都會典範的一部分。具體來說，九龍灣和觀塘有多用途體育館、郵輪碼頭，亦有都會公園。我們的三項目標是加強整合、改善環境、釋放當區發展潛力。」

共同合作的力量

會上，香港特別行政區政府地政總署署長甯漢豪女士談及持份者之間的合作，闡述了她對發展智慧城市策略的見解。

她提及，在二零一五年《施政報告》中，行政長官公佈政府會以九龍東為試點，探討發展智慧城市的可行性。「地政總署已準備好全力協助發展智慧城市的三大範疇 (3-Ins)：基建 (Infrastructure)、資訊 (Information) 及智能 (Intelligence)。」

甯女士說，在基建方面，地政總署一直負責建立並管理全港大地測量網絡，亦協助發展局推出「空間數據共享平台」，推動香港落實運用空間數據，邁向智慧城市。

她說，數據中心是這項工作的關鍵。「香港是設立亞太區數據中心的首選之地。事實上，在二零一一年至二零一三年間的數據中心風險指數排名榜上，香港獲評為亞洲區內設立數據中心最安全的地方。」

「資訊」是發展智慧城市的核心元素。地政總署一直負責整理及發佈各種地圖產品及空間數據，供政府及公眾使用。

甯女士說：「我們為數碼地圖產品加入了新元素：三維空間數據。這套精密的三維數據模型能提供更全面的資料以描繪本港面貌，有效支援一系列創新的應用系統，譬如三維模擬城市街景、虛擬現實、擴增實境等。」

至於「智能」方面，地政總署已開發多款智能程式，為各界提供服務及資訊。

甯女士說：「地政總署推出了『地理資訊地圖』，為普羅大眾提供更全面的地理空間資訊服務。用戶可搜尋香港多處地點及設施，瀏覽二十六個政府部門所提供的相關地理空間資訊。」

「地政總署亦將協助起動九龍東辦事處，將九龍東轉型為另一個商業樞紐，善用土地。」

規劃未來都市典範

香港特別行政區政府規劃署九龍規劃專員葉子季先生從城市規劃角度出發，向與會聽眾分享他的觀點。

「甯女士提出了 3-Ins，我亦有我的 3Cs：創造增長空間 (creating capacity for growth)、創造地標 (creating places)、創造機遇 (creating opportunities)。」

「在創造增長空間方面，我們預計港鐵將增建土瓜灣站及啟德站。這兩個地鐵站周圍的市中心將會落成一大群寫字樓。單是這些寫字樓，就佔據了這個總商業面積達 90 萬平方米的辦公室樞紐不少空間。」

葉先生繼而談到「創造地標」。「我們極力提倡在九龍東興建不同類型活動的地標和樞紐，以此作為規劃原則。以觀塘區為例，該區就有不少大型區域樞紐。」

最後，葉先生討論到「創造機遇」一環。他說，啟德河工程就是好例子。啟德河前身是啟德明渠，是九龍東的主要排洪渠道，長 2.4 公里。

葉先生解釋，政府會將啟德明渠改造成一條景觀宜人的綠化河道走廊，提供休憩和公共活動，並提升九龍東的排洪設施能力。

智能與綠化發展

香港特別行政區政府土木工程拓展署新界東拓展處處長黃偉文工程師，在會上舉出一項智能與綠化措施的例子，以闡述前幾位發言嘉賓所提到的原則和目標。

黃處長解釋，安達臣道石礦場一直為本港建造業提供砂石、瀝青、石料和混凝土。這片佔地 40 公頃的礦場已完成歷史任務，今後會承擔起新的使命，提供住宅及商業發展用地。

「政府將會落實三大類智能與綠化措施，分別是智能水資源管理、智能能源、智能交通。」

黃處長解釋，渠務署有一套三管齊下的防洪措施：上游攔截，中游儲水，並改善下游雨水排放系統。在智能能源方面，署方將會把太陽能電池板安裝於該片用地內的公共交通總站的上蓋，以及用於儲存雨水的地底儲水箱的通風空間上。

在智能交通方面，政府將會精心規劃一套行人路及單車徑網絡，令市民減少依賴車輛出入。同時，政府會結合各項交通工具和相關服務，整合交通資訊，運用這些資訊成立一套完善系統，推廣互動式的都會交通概念。

新加坡的三維地圖

會有來自新加坡的業內專家：新加坡土地管理局土地勘测處處長 Victor Khoo 博士。

Victor Khoo 博士簡介了新加坡政府採用的「整體式」做法，旨在製作及維護一套高像素的三維全國地圖，為政府部門提供與時並進的三維數據，迎合各部門對這些數據日益殷切的需求。

「在繪製三維地圖的過程中，我們需要收集空中和地面的數據，運用數據建立模型。目前，我們已完成收集空中數據，接下來會收集道路、橋樑、隧道、公共設施等地面三維數據，完成整個三維數碼環境，以三維虛擬形式完善呈現新加坡的面貌。」

Victor Khoo 博士指，這套地圖的用途無可限量，可運用於城市規劃、資產庫存管理、樹木管理、無人駕駛汽車、文物保育、風模擬、發展規劃等等。

本文由《Classified Post》撰文。

「三維空間數據能夠有效支援一系列創新的應用系統，譬如三維模擬城市街景、虛擬現實、擴增實境等。」