

11月 2016  
NOV 6

# 智慧城市 SMART

@ KOWLOON EAST  
九龍東

# CITY

PEOPLE

ENVIRONMENT

MOBILITY

DATA

發展九龍東為智慧城市區-可行性研究第一階段公眾參與  
DEVELOPING KOWLOON EAST INTO A SMART CITY DISTRICT - FEASIBILITY STUDY **STAGE 1** PUBLIC ENGAGEMENT





啟德發展區  
Kai Tak Development (KTD)

九龍灣商貿區  
Kowloon Bay Business Area (KBBA)

觀塘商貿區  
Kwun Tong Business Area (KTBA)

九龍灣行動區  
Kowloon Bay Action Area (KBAA)

觀塘行動區  
Kwun Tong Action Area (KTAA)

研究範圍  
Study Area

北  
NORTH

0 200m 400m 600m 800m





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06

未來路向  
Way Forward

02

甚麼是智慧城市？  
What is Smart City?

# SMART CITY

05

概念驗證  
Proof of Concept  
(PoC) Trials

03

九龍東智慧城市發展  
Smart City  
Development in  
Kowloon East

04

願景及框架  
Vision and  
Framework

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# 01 引言 INTRODUCTION

政府於二零一五年的施政報告提出以九龍東為試點，研究發展智慧城市的可行性。因此展開「發展九龍東為智慧城市區－可行性研究」(本研究)，從發展策略、挑戰、限制和機遇方面探討其可行性。

於本研究中，我們將會為九龍東制訂智慧城市框架和倡議書，以及建議智慧城市措施和其推行策略。透過公眾參與，我們致力推廣智慧城市發展的效益和提高大眾意識，把九龍東發展為一個智慧、可持續及宜居住的社區。

In the 2015 Policy Address, the Government announced that Kowloon East (KE) would be used as a pilot area to explore the feasibility of developing a Smart City. The “Developing Kowloon East into a Smart City District – Feasibility Study” (this Study) was thus commenced to investigate the feasibility in terms of its strategies, challenges, constraints and opportunities.

In this Study, we will formulate a smart city framework and an advocacy statement for KE, as well as propose smart city initiatives and their implementation strategy. Through the public engagement, we strive to promote the benefits of smart city development and raise awareness in the community for developing KE into a smart, sustainable and liveable community.

智慧 市  
SMART

KOWLOON EAST  
九龍東



## 公眾參與 PUBLIC ENGAGEMENT

公眾參與活動分為兩階段。透過此為期兩個月的第一階段公眾參與，我們將會收集公眾就建議框架和倡議書，以及概念驗證和規劃未來智慧城市方案的意見。所收集的意見對制訂本研究的建議十分重要。

The Public Engagement (PE) exercise will be conducted in two stages. In this two-month Stage 1 PE, we will collect public views on the proposed framework and advocacy statement, as well as solicit ideas for Proof of Concept (PoC) trials and the planning of future smart city proposals. The collected views will be important for developing recommendations under this Study.

檢討現有/已計劃的智慧城市措施  
Review of Current/Planned  
Smart City Initiatives

建議框架及倡議書  
Proposed Framework and  
Advocacy Statement

2016

二零一六年二月  
February 2016

我們在此  
WE ARE  
HERE

推行策略

Implementation Strategy

概念驗證

Proof of Concept Trials

制訂方案

Formulation of Proposals

2017

二零一六年十一月  
November 2016

第一階段 STAGE 1  
公眾參與  
Public Engagement

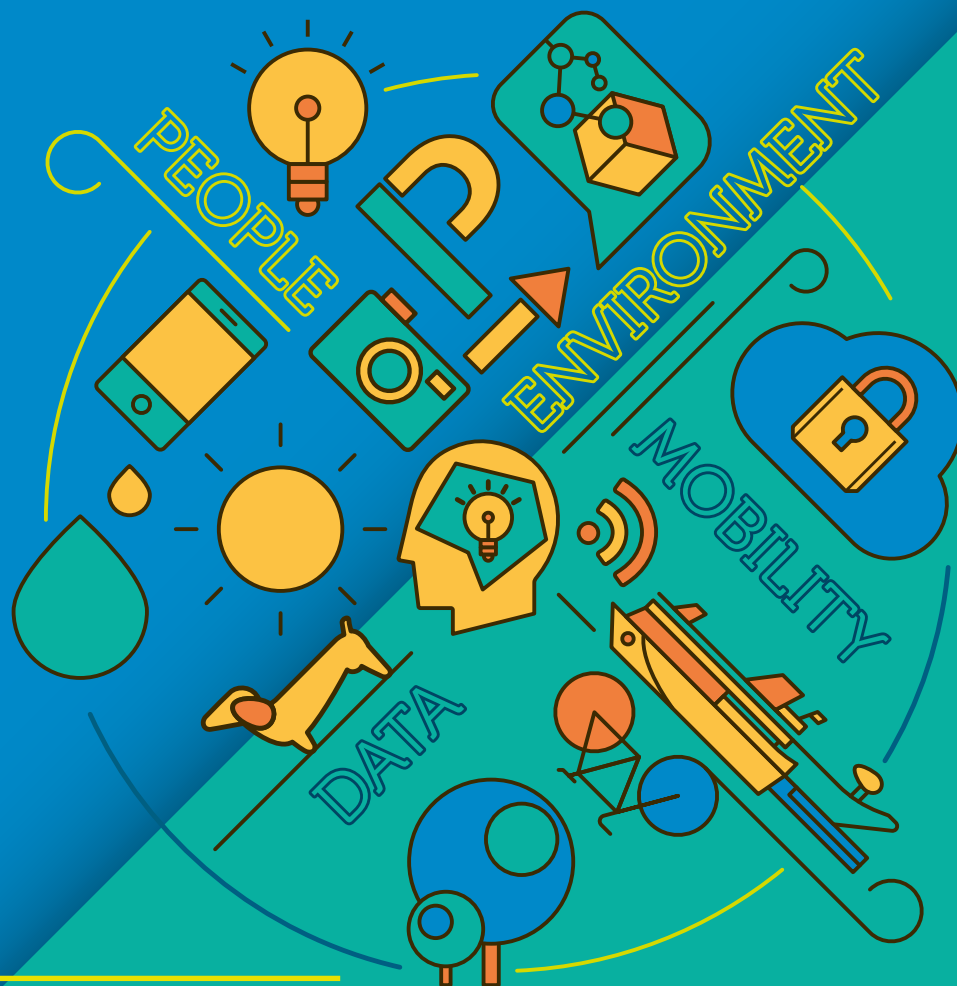
二零一七年年中  
Mid-2017

第二階段 STAGE 2  
公眾參與  
Public Engagement



# 02

## 甚麼是智慧城市? WHAT IS SMART CITY?



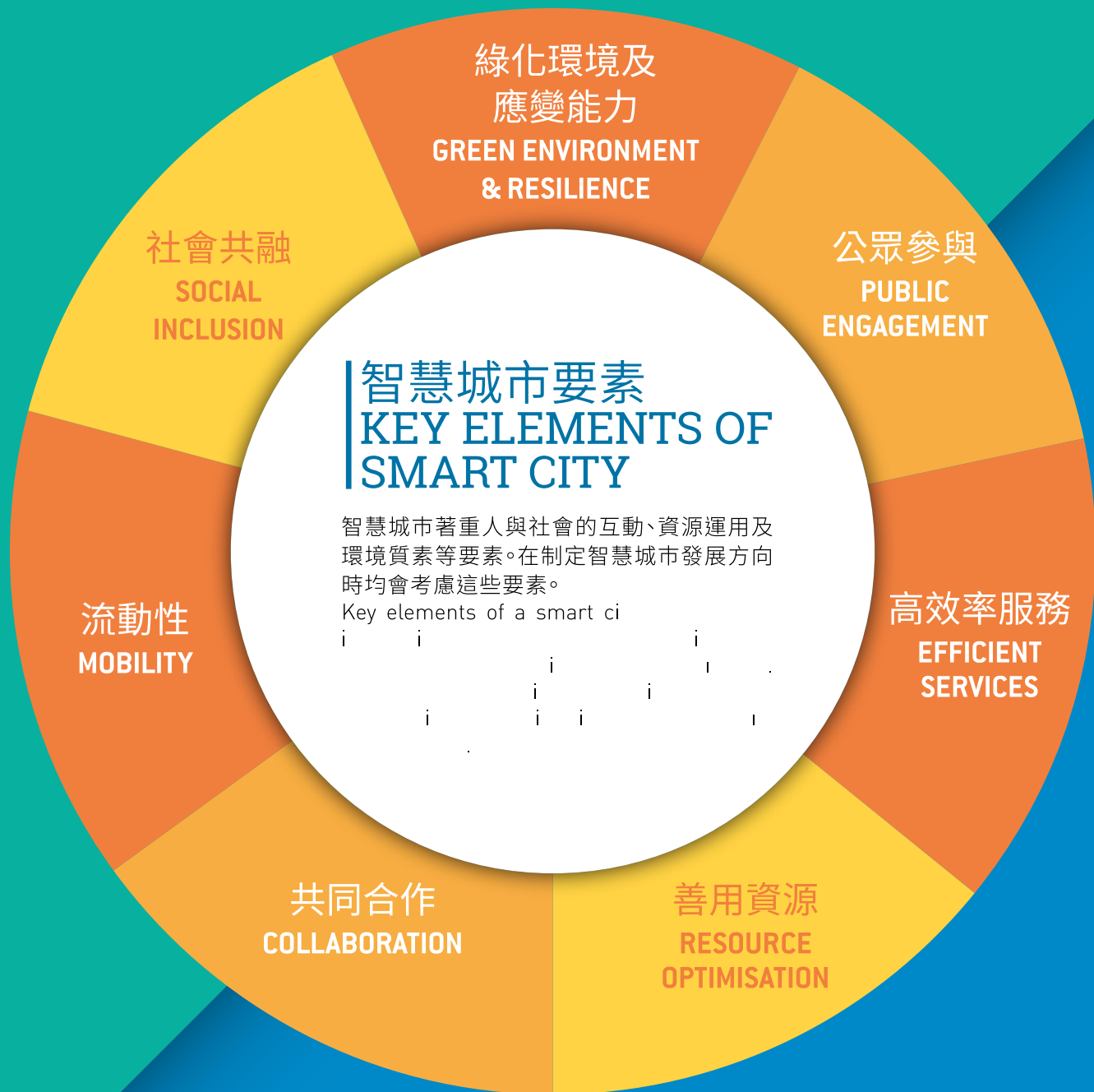
智慧城市尚未有一個統一定義。部分定義著重利用資訊及通訊科技令城市的系統、運作和服務可以更有效率。我們認為智慧城市的定義應較廣闊。除資訊及通訊科技外，智慧城市亦應利用人力及社會資本促進社會可持續增長及提高生活質素。智慧城市是一個著重以人為本和科技方案以達致以下目的的城市：

- 提高城市運作及管理效率
- 改善生活質素
- 增強經濟競爭力

There is not yet a universal definition of smart city. Some definitions put particular emphasis on leveraging Information and Communications Technology (ICT) to enhance the efficiency of a city's systems, operations and services. We think that the definition of smart city should be wider. Apart from ICT, a smart city should also leverage human and social capital to facilitate the sustainable growth of society and increase quality of living. A smart city is a city leveraging people-centric and technology-focused solutions to achieve the following objectives:

- *Increase efficiency of city operation and management*
- *Improve quality of life*
- *Strengthen economic competitiveness*





我們在下一部分會先檢視九龍東面對的挑戰及機遇。接著探討九龍東作為智慧城市試點，在構思及推行智慧城市時的願景及建議的框架，以達致在區內推動智慧城市發展的目的。

Challenges and opportunities of KE will be examined in the next section. In order to foster smart city development in KE as the pilot area, we will then identify and propose a vision and framework for formulating and implementing smart city initiatives.




03

九龍東智慧城市發展

SMART CITY DEVELOPMENT  
IN KOWLOON EAST







九龍東包括前機場舊址的啟德發展區、觀塘和九龍灣商貿區。隨著機場的搬遷，製造業北移至內地以及香港對優質辦公室的需求急速增加，九龍東近年正迅速轉型。

政府倡議採用具前瞻性、相互協調和綜合的方式把九龍東發展成為第二個核心商業區，以支持香港的經濟發展。智慧城市發展可以在此過程中擔當重要角色，提供創新及可持續的城市發展方案。

KE consists of the former airport site – the Kai Tak Development area, the Kwun Tong and Kowloon Bay Business Areas. Since the closing of the airport, the relocation of manufacturing industries to the Mainland and the rapid increase in demand for high grade office buildings, KE has been rapidly transforming.

The Government advocates the transformation of KE into another core business district (CBD2) to support Hong Kong's economic development by adopting a visionary, coordinated and integrated approach. Smart city development can play an important role in this process by offering innovative and sustainable urban development solutions.

土地用途  
及擁有權  
FIXED LAND USES  
AND OWNERSHIP



行人環境  
PEDESTRIAN  
ENVIRONMENT



環境質素  
ENVIRONMENTAL  
QUALITY





## 機遇

## OPPORTUNITIES

### 第二個核心商業區 CBD2

九龍東正轉型為香港第二個核心商業區。智慧城市措施可以改善人車流動、環境質素、基建和市民居住及工作的體驗，藉此增強其整體競爭力。

KE is transforming into another CBD for Hong Kong. Smart city initiatives can enhance its overall competitiveness by improving the mobility and walkability, environmental quality, infrastructure and experience of people living and working there.

### 新舊融合

### BLENDING OF OLD AND NEW

九龍東區內新舊大廈林立，可以展示在新建和現有社區推行智慧城市措施的可行性。這些措施可以改善新舊建築的效能。

KE is an area with old and new buildings. It provides a platform to demonstrate the feasibility of implementing smart city initiatives in both new and existing communities. Smart city initiatives can improve the performance of old and new buildings.

### 啟德發展區 KAI TAK DEVELOPMENT AREA

智慧城市措施可於啟德發展區早期發展作出規劃，有更大彈性地容許區內不同設施試行各種智慧城市方案。

Smart city initiatives can be planned at the earlier stage of development of Kai Tak Development Area, which would allow greater flexibility for trial implementation of various smart city solutions at different facilities.



## 機遇 OPPORTUNITIES

### 旅遊樞紐 A TOURISM HUB

隨著啟德郵輪碼頭和將來啟德體育城的落成，啟德發展區將會成為一個舉辦大型活動盛事的主要場地。智慧城市措施可以利用科技提升遊人和外地旅客的體驗。

With the completion of the Cruise Terminal and the future Kai Tak Sports Park, the Kai Tak Development Area will become an important venue for hosting large-scale events. Local and overseas visitors can enjoy an enhanced experience with the aid of various smart city initiatives.

### 產生協同效應 CREATION OF SYNERGY

我們已展開不同的研究，冀改善九龍東的建築和行人環境。智慧城市措施可補足這些工作，促進各項發展有效發揮，產生協同效應。

We have commenced various studies to improve the built and pedestrian environment in KE. Smart city initiatives can complement among these efforts, and foster more effective operation and synergy.



## 機遇 OPPORTUNITIES

### 借助進行中智慧城市措施 RIDING ON ONGOING SMART CITY INITIATIVES

現在已有一系列有助智慧城市發展的措施在九龍東進行。我們將借助這些措施提供的機遇，與我們建議的智慧城市措施結合，提升整體效益。

There are already a number of ongoing initiatives in KE which can contribute to developing a smart city. We will ride on these efforts to integrate with our proposed smart city initiatives to increase overall benefits.



九龍東手機應用程式  
KE MOBILE APP



智郵站  
IPOSTAL STATION



智慧單車徑網絡 (研究中)  
SMART CYCLE TRACK NETWORK (UNDER STUDY)



電動車充電設施  
ELECTRIC VEHICLE CHARGING FACILITIES



區域供冷系統  
DISTRICT COOLING SYSTEM



巴士到站時間預報  
ESTIMATED BUS ARRIVAL TIME



在賣地條款加入智慧城市措施  
INCLUDE SMART CITY INITIATIVES  
IN LAND SALES CONDITIONS



明渠優化工程  
NULLAH ENHANCEMENT



# 04 願景及框架 VISION AND FRAMEWORK

九龍東智慧城市發展的願景  
VISION FOR SMART CITY  
DEVELOPMENT IN KOWLOON EAST

智慧城市框架-勾劃其促成的  
要素及重點策略範疇  
SMART CITY FRAMEWORK  
OUTLINING KEY ENABLING FACTORS  
AND STRATEGIC ASPECTS

為每個重點策略範疇建議智慧城市措施  
PROPOSE SMART CITY INITIATIVES  
FOR EACH STRATEGIC ASPECT

九龍東進行中的智慧城市措施  
ONGOING SMART CITY INITIATIVES  
IN KOWLOON EAST

揀選和推行概念驗證  
SHORTLIST AND  
IMPLEMENT PoC TRIALS

九龍東智慧城市實踐計劃  
SMART CITY IMPLEMENTATION PLAN  
FOR KOWLOON EAST





# 願景 VISION

促進九龍東共建成為充滿活力、智慧和可持續的香港  
第二個核心商業區

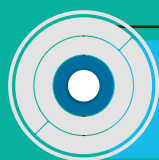
To facilitate co-creation of Kowloon East into a vibrant,  
smart and sustainable CBD2 of Hong Kong

## 建議智慧城市框架

### PROPOSED SMART CITY FRAMEWORK

建議框架的構想來自我們的願景及對九龍東現況的了解。它包含了以下三個層次：

The idea of our proposed framework is from our vision and understanding of the existing situation in KE. It comprises THREE layers:

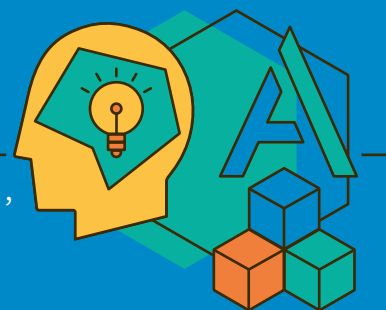


#### 創新平台

##### INNOVATION-ORIENTED PLATFORM

框架的核心著重以人為基礎，透過營造一個鼓勵創新的平台，凝聚各界人士互動和合作，促進發展及推行不同的智慧城市措施。

The core of our framework places particular emphasis on people as foundation. By creating a platform promoting innovation, converging people for interaction and collaboration to foster development and implementation of various smart city initiatives.



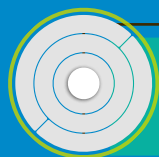
#### 重點策略範疇

##### STRATEGIC ASPECTS



框架的中層是智慧城市措施的重點策略範疇，當中包括(1)治理及社會經濟活力、(2)資源管理及城市環境和(3)流動及易行，推動九龍東成為更宜居住、工作及遊玩的地方。

The middle layer of the framework contains the aspects which smart city initiatives can improve: (i) Governance & Socio-economic Vibrancy; (ii) Resources Management & Urban Environment; and (iii) Mobility & Walkability, to make KE a better place to live, work and play.



#### 資訊及通訊科技

##### INFORMATION & COMMUNICATIONS TECHNOLOGY (ICT)

框架的外圍利用資訊及通訊科技以加強智慧城市措施的成效。它是每個重點策略範疇推行智慧城市措施的關鍵促成因素。

The outer layer of the framework uses ICT as a tool to enhance the efficiency of smart city initiatives. It is the key enabling factor for implementing smart city initiatives for each strategic aspect.







## 04 願景及框架 VISION AND FRAMEWORK



# 創新平台 INNOVATION-ORIENTED PLATFORM

創新平台對推動整個智慧城市框架及實現我們的願景擔當著重要的角色。我們將透過以下四個形式收集公眾和不同持份者的構思。

An “innovation-oriented platform” plays a crucial role in driving the overall framework and realising our vision. We will receive ideas from the public and various stakeholders through the following four approaches.

### 共同創造 CO-CREATION

收集公眾人士和其他持份者的意見及提議，共同締造共贏的結果。

Collect views and suggestions from the public and other stakeholders to jointly create a win-win outcome.

### 知識型發展 KNOWLEDGE-DRIVEN

於不同的智慧城市方案中，有效地利用及開發本地及海外的智慧城市方案知識。

Effectively leverage knowledge from local and overseas examples in various smart city solutions.

### 跨界別合作 CROSS-SECTOR COLLABORATION

透過政府、企業、專業團體、大學和研究機構的共同努力，實現九龍東智慧城市發展的願景。

Through the concerted efforts of the Government, corporates, professional institutes, universities and research institutes to realise our vision of smart city development for KE.

### 社區參與 COMMUNITY ENGAGEMENT

利用綜合互動平台與社區人士溝通，為九龍東發展一個以人為本的智慧城市模式。

Comprehensive and interactive platform for dialogue exchange with the community and develop a people-centric smart city model for KE.



大學  
UNIVERSITIES

專業團體  
PROFESSIONAL  
INSTITUTES

創新平台  
INNOVATION-ORIENTED  
PLATFORM

公眾  
GENERAL  
PUBLIC

共同創造  
CO-CREATION  
知識型發展  
KNOWLEDGE-DRIVEN

跨界別合作  
CROSS-SECTOR  
COLLABORATION  
社區參與  
COMMUNITY  
ENGAGEMENT

政府  
GOVERNMENT

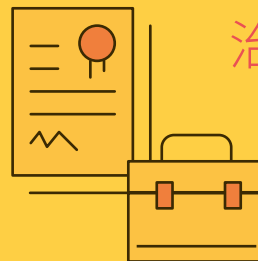
研究機構  
RESEARCH  
INSTITUTES

企業  
CORPORATES

資訊及通訊科技業  
INFORMATION & COMMUNICATIONS  
TECHNOLOGY SECTOR

## 重點策略範疇

### STRATEGIC ASPECTS



## 治理及社會經濟活力 GOVERNANCE & SOCIO-ECONOMIC VIBRANCY

透過創新科技持續改善城市效率和公共資產的管理，加強城市應變能力、推廣社區共融和提升社會經濟活力。

Continuous improvement of urban efficiency and management of public assets through innovative technologies can improve city resilience, promote social inclusion, and enhance socio-economic vibrancy.

## 城市應變能力 CITY RESILIENCE

資訊及通訊科技的運用可令九龍東具備應付大型活動、集會以及惡劣情況的能力。

KE can be adaptive to mega events, assemblies and adverse conditions with the use of ICT.

## 實施模式 IMPLEMENTATION MODELS

制訂嶄新實施模式鼓勵各界於智慧城市發展中合作。

New implementation models will be devised to encourage various sectors to collaborate in smart city development.

## 社區共融 SOCIAL INCLUSION

我們致力改善社區，讓各階層人士都享受在一個智慧、可持續和宜居的地方工作、居住及自由探索。

We are committed to improving the area, such that people from all walks of life can enjoy a smart, sustainable and liveable place to work, live and explore freely.

## 資產管理 ASSET MANAGEMENT

良好的資產管理方案可以降低故障的風險，改善治理效率，提高成本效益。

Good asset management solutions can reduce the risk of asset failure, improve the efficiency of governance and enhance cost-effectiveness.



# 資源管理及城市環境 RESOURCES MANAGEMENT & URBAN ENVIRONMENT



願景及框架  
VISION AND FRAMEWORK

04

## 重點策略範疇 STRATEGIC ASPECTS



有效運用資源和高質素的城市環境都是智慧城市的部分主要特性。我們致力以藍綠和具資源效率的基建設計提升九龍東的環境，建設一個健康及可持續的社區。

Effective use of resources and a high-quality urban environment are part of the key attributes of a smart city. We strive to enhance the environment of KE with blue-green and resource-efficient infrastructure design so as to establish a healthy and sustainable neighbourhood.

### 藍綠基建

#### BLUE-GREEN INFRASTRUCTURE

提升現有基建以保護水文和生態系統及改善城市景觀質素。

Upgrade existing infrastructure to conserve the hydrological and ecological systems and improve the quality of the urban landscape.

### 具資源效率的基建

#### RESOURCE-EFFICIENT INFRASTRUCTURE

提高節約能源及其他資源的意識，興建高資源效益的基建，以減少碳足印和能源用量。

Increase the awareness of conserving energy and resource use, and to build resource-efficient infrastructure to reduce carbon footprint and energy consumption.

### 建築環境

#### BUILT ENVIRONMENT

在不同城市環境中利用環保設計，在廢物管理、空氣和水質污染方面減低發展對環境的影響。

Environmental impacts of development, such as waste management, air and water pollution, can be alleviated with environmentally-friendly designs.

### 健康及可持續的社區

#### HEALTHY AND SUSTAINABLE NEIGHBOURHOOD

改善城市環境以提高生活質素，締造有活力、健康及可持續的社區。

Improve the urban environment to enhance the quality of life and create a vibrant, healthy and sustainable neighbourhood.

## 04 願景及框架 VISION AND FRAMEWORK

### 重點策略範疇 STRATEGIC ASPECTS



行人及道路交通擠塞情況在九龍東已建成的地區相當普遍。除了以智能系統改善道路交通和提升行人暢達度外，我們亦鼓勵公眾使用綠色運輸工具，以減低碳排放和舒緩交通擠塞。

Pedestrian and road traffic congestion in the built-up areas of KE is a common issue. Besides improving road traffic and enhancing pedestrian connectivity with the aid of intelligent systems, we also encourage the public to use various green transport modes to minimise carbon emission and relieve traffic congestion.

### 道路交通 ROAD TRAFFIC

採用最新科技收集、分析和發放實時交通資訊和管理路旁活動，以舒緩交通擠塞。

Collect, analyse and disseminate real-time traffic information and manage kerbside activities to relieve road traffic congestion with the use of the latest technology.

### 綠色運輸網絡 GREEN TRANSPORT NETWORK

發展環保運輸網絡及相關支援設施和服務，藉此鼓勵使用綠色運輸工具。

Encourage the use of green transport modes by developing environmentally-friendly transport networks and related supporting facilities and services.

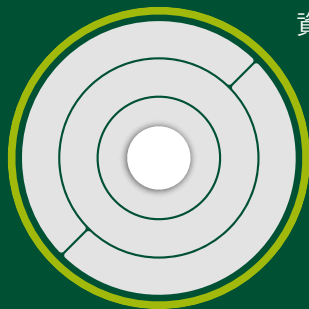
### 行人連接性 PEDESTRIAN CONNECTIVITY

透過興建完善的行人網絡，改善行人體驗及推廣「易行九龍東」。

Improve the pedestrian experience and promote a “Walkable KE” by building comprehensive pedestrian networks.



# 資訊及通訊科技 INFORMATION & COMMUNICATIONS TECHNOLOGY (ICT)



資訊及通訊科技是智慧城市發展中不可或缺的一環，利用數據及網絡基建促進各物件與設備之間的連繫，協助發展和推行三個重點策略範疇下的智慧城市措施。

ICT is indispensable for smart city development. It enables the linkage among multiple objects and devices with the use of data and network infrastructure, and supports the development and implementation of smart city initiatives under the three strategic aspects.

## 無線網絡基建 WI-FI INFRASTRUCTURE

擴大免費無線網絡的覆蓋範圍，讓公眾可以隨時隨地接收及發放資訊。

Extend the coverage area of free Wi-Fi services for people to receive and disseminate information anytime and anywhere.

## 中央數碼基建 CENTRALISED DIGITAL INFRASTRUCTURE

研究建立平台促進政府部門與公私營機構間數據（包括空間及非空間數據）交換的要求。

Study the requirements necessary for setting up a platform for exchange of data (including spatial and non-spatial data) among government departments, the public and private sectors.

## 物聯網 INTERNET OF THINGS (IoT)

透過不同的感應器、設備、通訊網絡及伺服器，收集靜態/實時數據作分析和協助規劃和決策過程。

Collect static/real-time data through different sensors, devices, communication networks and servers for conducting analyses and supporting planning and decision making processes.

## 開放數據 OPEN DATA

向公眾分享數據以鼓勵創新。

Share data to the public to encourage innovations.

# 05

## 概念驗證

### PROOF OF CONCEPT (PoC) TRIALS

因應九龍東的挑戰、限制與機遇及建議的智慧城市框架，我們建議在研究期間於九龍東進行一些概念驗證。我們旨在透過這些概念驗證展示智慧城市方案能如何提升公眾福祉和改善這地區。

Taking account of the challenges, constraints and opportunities in KE, and the proposed smart city framework, we propose to conduct several PoC trials in KE during the Study period. Through the PoC trials, we aim to demonstrate how smart city solutions can enhance the well-being of the public and improve the area.



# 目的 OBJECTIVES

## 展示智慧城市發展對社會的效益

### DEMONSTRATING THE SOCIAL BENEFITS OF SMART CITY DEVELOPMENT

九龍東將會成為創新意念的試點，展示智慧城市方案如何提高生活質素和有助於香港發展。

Innovative ideas will be piloted in KE to demonstrate how smart city solutions can improve the quality of living and be conducive to the development of Hong Kong.

## 了解擴大應用規模的可行性

### UNDERSTANDING THE FEASIBILITY OF WIDER APPLICATION

我們將審視擴大智慧城市方案應用規模所需的成本，包括安裝費用和經常性的運作維修開支。此外，能否於現有環境或設施加推智慧城市方案，亦是影響其成功和是否繼續推行的因素。

We will examine the cost of scaling up the smart city solutions, including the installation cost and recurrent cost of operation and maintenance. Retrofitability will also be a key factor that will influence the success of the smart solutions and whether we can move forward with the technology.

我們根據以下準則，初步揀選了四個概念驗證：

Four PoC trials are preliminarily selected based on the following criteria:

協助九龍東面對挑戰

*Equipping KE to meet its challenges*

可於短期落實的項目以展示社會和經濟效益

*Quick wins to demonstrate social and economic benefits*

可擴大應用規模

*Probable scale-up*

具創新性及有助可持續發展

*Innovative and conducive to sustainable development*

## 概念 PoC 1 易行九龍東手機應用程式 WALKABLE KOWLOON EAST MOBILE APP



為推廣「易行九龍東」的概念，我們將會開發一個手機應用程式，按使用者的需要和喜好提議個人化的主題步行路線。此程式亦會提供一個平台讓公眾發表對各有趣地點的意見。將來此程式會和九龍東手機應用程式結合，利用室內外導航系統提供行人定位導航服務。

To promote the concept of "Walkable KE", we will develop a mobile app and suggest personalised thematic routes according to the needs and preferences of the users. It also provides a platform for the public to leave feedbacks on the Points of Interest. In future, this app will be integrated with the KE mobile app, to provide pedestrian positioning and navigation services with the use of indoor/outdoor navigation system.

為改善人流管理的效率，此系統將會利用閉路電視監控攝影機和先進的影像分析技術，自動監測人流及識別異常情況。將會以在2017年1月舉行的香港街馬@九龍東2017作為試點，測試此系統如何改善高峰期和主要樽頸位的人流管理。

Aiming to improve the efficiency of crowd management, this system will utilise CCTV surveillance cameras with advanced video analytics tool to automatically detect crowd flow and identify abnormal conditions. The upcoming Streetathon@Kowloon East 2017 to be held in January 2017 will be used for trial to show how this system can help crowd management during peak flow and at key bottlenecks.



## 概念 PoC 2 智慧人流管理系統 SMART CROWD MANAGEMENT SYSTEM





## 能源效率數據系統 ENERGY EFFICIENCY DATA SYSTEM



改善能源效率及減低用電量是應對氣候變化的關鍵。透過電子電錶和建築物管理系統，能源效率數據平台可讓使用者追蹤實時的用電量，有助推動行為轉變及為節能方案提供客觀數據。

Energy efficiency improvements and electricity consumption reduction are key to combat climate change. With the use of digital electricity meters and Building Management System (BMS), the Energy Efficiency Data System allows users to track real-time energy consumption. It can incentivise behavioural change and provide objective data on the effectiveness of energy saving measures.

頻繁的路旁活動是九龍東交通擠塞的其中一個主要原因。為紓緩此情況，我們建議安裝路旁感應器和攝影機，監察路旁上落貨區的使用和空置情況。這些資料將會顯示在附近路口的顯示屏和網上平台，改善上落貨區的使用。

Frequent roadside activity is one of the key causes of traffic congestion in KE. To alleviate this condition, we propose to install on-street sensors and surveillance cameras to monitor the usage and availability of kerbside loading/unloading bays. The information will be displayed on display panels to be installed at nearby junctions and an online platform to optimise the utilisation of loading/unloading bays.



## 路旁上落貨區監測系統 KERBSIDE LOADING/UNLOADING BAY MONITORING SYSTEM

## 其他構思中的概念驗證 OTHER PoC TRIALS BEING CONSIDERED

除了上述四個概念驗證外，我們亦會研究其他創新意念，以改善公共資產管理效率和締造綠色健康的環境。

Besides the above four PoC trials, we will also explore other innovative ideas to improve the efficiency of public asset management and create a green and healthy environment.



### 智慧樹木管理 SMART TREE MANAGEMENT

為減低問題樹木對公眾安全的潛在威脅，利用感應器可收集樹木健康狀況及微環境實時數據作分析，以盡早識別需要加以護養的樹木，促進樹木健康和保護公眾的安全。

To reduce the potential threat of problematic trees to the safety of the general public, real-time data on tree health conditions and the micro-environment can be collected from sensors for analyses, in order to identify trees which need extra care to promote tree health and protect the safety of the public.



### 智慧垃圾箱系統 SMART WASTE BIN SYSTEM

一些位處繁忙地段的垃圾箱及廢物分類回收桶經常過滿，影響市容之餘更需額外人手巡視。此系統能辨識垃圾箱的填滿程度以完善垃圾收集的安排，亦有助減輕前線人員工作量。

Some waste bins and waste separation bins located in busy locations are often overfilled which affect cityscape and need extra manpower for monitoring. This system can detect the fill level of waste bins to optimise the arrangement of waste collection, which can also help to alleviate the workload of frontline staff.



### 水質驗測系統 WATER QUALITY PREDICTION SYSTEM

九龍東具潛質成為舉辦水上體育活動熱點。我們會研究利用天氣和啟德明渠上游水質數據推算水中大腸桿菌含量的可行性。這些水質資料可發放予市民及水上體育活動主辦單位作參考。

KE has potential to be a hot spot for hosting water sports activities. We will investigate the feasibility of using weather and water quality data collected from the upstream of Kai Tak Nullah to predict the concentration of *E. Coli* in water. The water quality information can be disseminated to the public and water sports organisers for reference.



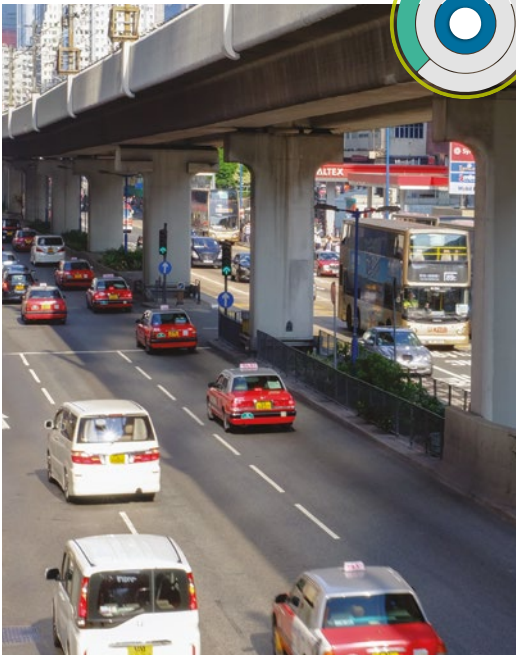


## 實時道路工程資訊

### REAL-TIME ROAD WORKS INFORMATION

此概念驗證旨在向駕駛人士提供一個便捷渠道得悉實時道路工程資訊，讓公眾可知悉道路工程位置及更妥善地規劃行程。

This PoC aims to provide a convenient means for road users to access real-time road works information. The public can be aware of the works locations and better plan their routes ahead.



## 基建結構完整性檢測

### STRUCTURAL INTEGRITY DETECTION OF INFRASTRUCTURE

科技在提升老化基建(如橋樑)的安全程度及確保其服務的連續性的角色十分重要。目前，基建表面損傷(如裂縫)只能從遠距離目測或透過利用流動平台及封閉行車綫作較近距離的檢測。隨著使用無人機建立重複的飛行路徑進行拍攝及錄影，細微的結構問題通過精確照片及3D模型可被探測。

The role of technology is very important to improving the safety level of ageing infrastructure (e.g. bridges) and ensure the continuity of their service. Currently, damages of infrastructure (e.g. cracks) can either be detected from a far distance visually or through using mobile platform and closing of traffic lane for closer inspection. By using unmanned aerial vehicles (UAV) and building repeatable pathways for taking photos and recording, slight structural problems can be detected with precise photographs and 3D models.

## 其他構思中的概念驗證 OTHER PoC TRIALS BEING CONSIDERED



### 公眾意見分析 PUBLIC OPINION ANALYSIS

公眾於社交媒體表達意見愈見普遍，因此收集意見方法應更為主動。我們會以數據開採方法分析社交媒體上發表的內容，以更準確了解公眾意見。

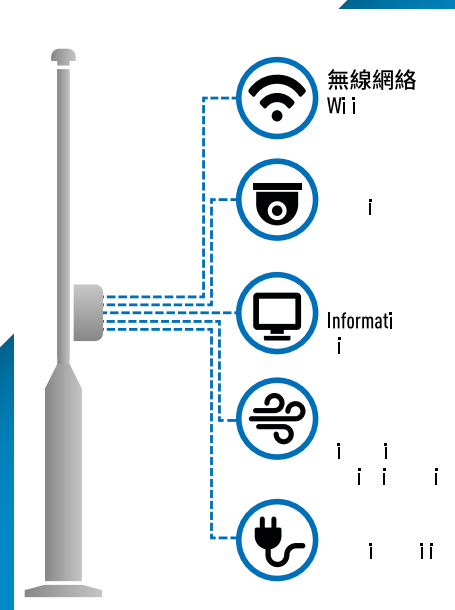
It is becoming increasingly common for the public to express opinions through social media, therefore the method of collecting views should be more proactive. We will analyse the contents of the opinions collected through social media with data mining approach, so that public opinions can be gauged more precisely.



### 多功能立柱系統 MULTI-PURPOSE POST SYSTEM

智慧城市中的資料接收及傳送對其運作及發展相當重要。多功能立柱系統可為多種不同感應器提供一個理想的安裝地點，並可配備不同的資料傳送技術。無線網絡接收器及顯示板也可安裝於立柱上與公眾互動。

Data collection and transmission are important to the operation and development of a smart city. The multi-purpose post system can provide the ideal locations to accommodate various sensors and can be equipped with various data transmission technologies. Wi-Fi receivers and display panels can also be installed for interaction with the public.





## 06 未來路向 WAY FORWARD

我們將會充分考慮所收集到的公眾意見，並逐步推行概念驗證。我們下一步會制訂推行策略，為每個重點策略範疇建議智慧城市措施。第二階段公眾參與將會匯報這些工作成果及概念驗證的進程。

We will take the public views received into account and progressively implement the PoC trials. In the next step, we will formulate the implementation strategy, propose smart city initiatives for each strategic aspect. In Stage 2 PE, the results of these tasks and the progress of PoC trial will be reported.

# 你的意見 YOUR VIEWS

你的意見對九龍東智慧城市發展至為重要。

歡迎你參加第一階段公眾參與。請於**2017年1月6日或之前**將意見以郵寄、傳真、電郵方式或經由本研究網頁 [www.smartke.hk](http://www.smartke.hk) 交給我們。

Your views on the smart city development in Kowloon East are important to us.

We welcome you to join our Stage 1 Public Engagement. Please send your views to us by post, fax, email or via our Study Website [www.smartke.hk](http://www.smartke.hk) on or before **6 January 2017**.

## 社區工作坊

### COMMUNITY WORKSHOP

12/11/2016

起動九龍東辦事處 (觀塘海濱道122號)  
Energizing Kowloon East Office  
(122 Hoi Bun Road, Kwun Tong)

## 第一階段公眾參與完結

### END OF STAGE 1 PE

06/01/2017

## 第一階段公眾參與展開

### START OF STAGE 1 PE

7/11/2016

## 智慧城市週

### SMART CITY WEEK

7/11/2016 - 13/11/2016

起動九龍東辦事處  
反轉天橋底一號場  
(觀塘海濱道122號)  
Fly the Flyover 01,  
Energizing Kowloon East Office  
(122 Hoi Bun Road, Kwun Tong)

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Please visit our Study Website for more details



[www.smartke.hk](http://www.smartke.hk)

發展局

Development Bureau

起動九龍東  
Kowloon East Office  
九龍東辦事處

ARUP

聲明：凡在「發展九龍東為智慧城市區一可行性研究」中向起動九龍東辦事處提供意見的個人或團體，將被視作同意起動九龍東辦事處可公布部分或全部所提供的意見(包括個人姓名或團體名稱)。如你不同意有關安排，請於提出意見時作出聲明。

Disclaimer: A person or an organisation providing any comments to the Energizing Kowloon East Office on the "Developing Kowloon East into a Smart City District - Feasibility Study" shall be deemed to have given consent to the Energizing Kowloon East Office to partially or wholly publish the comments (including the names of the persons or organisations). If you do not agree to this arrangement, please state so when providing the comments.