



DIGITAL PUTRAJAYA EXHIBITION & CONFERENCE 2019

# Role of Construction & Development in Developing Smart Cities

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**ORANGE**BEAM

# Who We Are

A construction and development company with over 30 years of experience in delivering highly-technical and specialised projects and services.



## VISION

Disrupt the industry.  
Build the future.



## MISSION

Inspire innovation  
and deliver a  
sustainable future.



# Highlights



**RM1.3B**

Outstanding  
Book Order



**RM13.1B**

Construction  
Projects  
Completed



**RM1B**

Development  
Projects  
Completed



**RM10B**

Building  
Works  
Completed



**RM3.1B**

Infrastructure  
Works  
Completed



**360**

Staff  
Strength

## Our Sector Expertise



Maritime  
Infrastructure



Green &  
Sustainability



Public  
Buildings &  
Infrastructure



High-rise &  
Commercial  
Developments



Luxury  
Residences



Data  
Centre



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# **Role of Construction & Development in Developing Smart Cities**



# Trends on Smart Cities Development

Smart cities are projected to increase by four folds by 2025

from which 32 will be based in APAC

SMART  
CITY

2018  
**\$308B**

2023  
**\$717.2B**



# Opportunities from Smart Cities

## **AUTOMATION = COST SAVING**

Back in 2014, Barcelona saved more than €75 million by automating resources such as water, electricity...

## **ATTRACT TALENTS**

As smart cities give citizens access to safer, happier living conditions – attracting people to move there.

## **MINIMISE RISKS & DAMAGES**

Smart cities utilise sensors that are capable of detecting anomalies in the readings of city resources – for quick action



# Why Malaysia Needs Smarter Cities



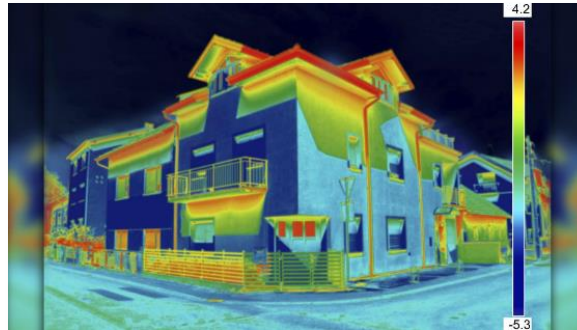
## CLIMATE CRISIS

30%

of global greenhouse  
gas emissions are from  
buildings



- The first office building in Malaysia to obtain the Green Building Index platinum rating
- The first outside of Singapore to obtain the Green Mark platinum rating



This image illustrates how a thermal imaging camera identifies the hot and cold parts of a home - areas of greatest energy inefficiency  
– credit: [UChicago news](#)

# Why Malaysia Needs Smarter Cities

## POPULATION

41.5  
M

Malaysia's population  
by 2040

## URBANISATION

85%

Urbanisation rate  
in Malaysia by 2040

## AGEING POPULATION

15.3  
%

60+ age  
in Malaysia by 2030





Malaysia is five years away...

... from this next-gen approach to urban management that addresses issues and improves the quality of life of urban dwellers.

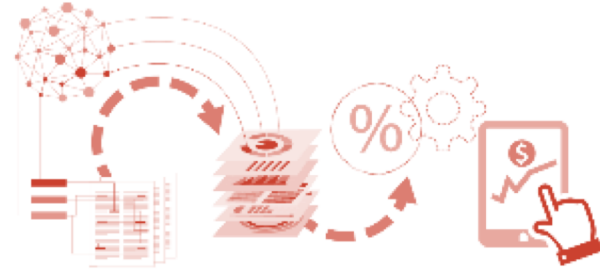
Gov is calling all stakeholders to work together on a holistic development with long term strategic planning

# How do you make a city smart?



## 1. INTERNET OF THINGS

has given rise to smart buildings with  
**automated, internet-controlled devices**



## 2. DATA & ANALYTICS

used in designing smart cities for  
**improved efficiency & quality of life**

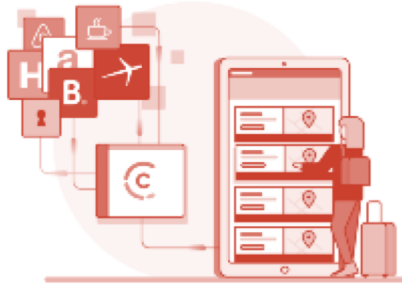


# How do you make a city smart?



## 3. SUSTAINABLE ENERGY

A focus as smart cities consume more energy



## 4. CONNECTIVITY

Efficiency in transportation & high speed Internet to bring everyone closer



## 5. AFFORDABILITY & SAFETY

Technology used to tackle basic societal problems



# Construction players are responding...

...to the new set of requirements of these high-tech urban environment.

However, they must have a seat at the table to ensure they are influencing and enabling new methods, tech and innovations

# ...but where do we go from here?

There are three considerations:



1. Adaptation of an existing urban area; retrofitting current infrastructure and infusing technologies into it



2. Planning and construction of a new city



3. Complying to national standards and indicators

We need to be mindful that  
**smart city technologies change the nature and economics of infrastructure.**



# Realities of Smart City Development



If smart cities are to become the 'new normal', authorities and key decision makers need to...



Navigate difficult areas such as technology, communications, data and security



Know that costs can be difficult to predict



Anticipate that the project will grow in complexity



Expect internal challenges, such as the need to **engage other stakeholders, drive collaboration and break down silos**

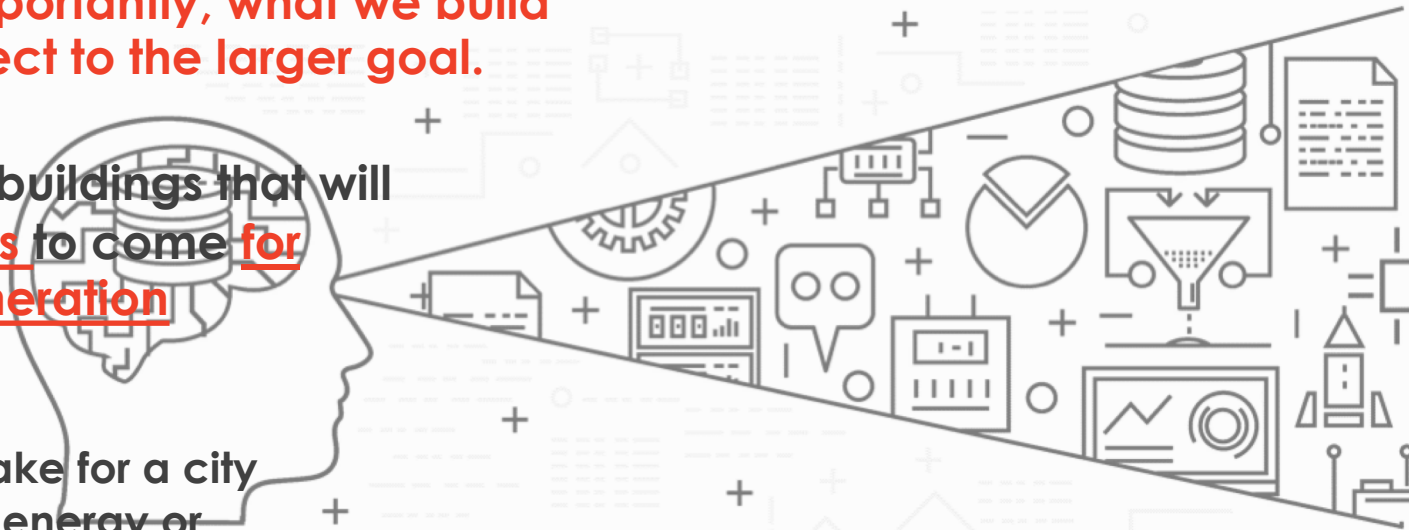
# Realities of Smart City Development



...and more importantly, what we build needs to connect to the larger goal.

Futureproofing buildings that will last for decades to come for tomorrow's generation

Q: What does it take for a city to go to net-zero energy or net-zero water?



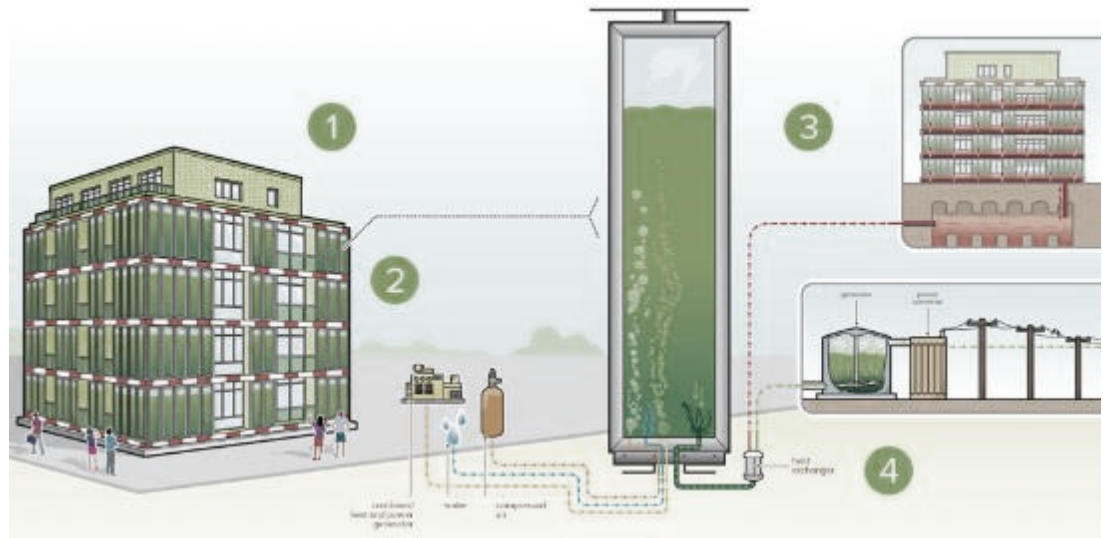
# Design and Build for the Future

## Role of construction and development to ease implementation



### Disrupt the way building materials are made [or functions]

- EcoLogics Studio designed an urban canopy to boasts bioreactors that can create a forest's worth of oxygen daily (about 400,000 sq ft of woodlands).
- The system can also produces hundreds of pounds of biomass by growing green microalgae that can be turned into bio-fuel





# Design and Build for the Future

## Role of construction and development to ease implementation



### Building for Resiliency means Preparing for all Eventualities

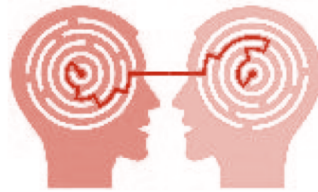
- Strive for environmental, social, and economic sustainability with the ability to adapt to known and unknown risks & vulnerabilities
- Songdo was built from scratch to be an explicitly smart, resilient city – allowing for easy implementation of smart city infrastructure.



# Delivering **best practice**, efficiency and productivity



**Communication**



**Understanding**



**Data**



**Technology**

# COLLABORATION IS KEY







**Thank you**



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