



360° design solution

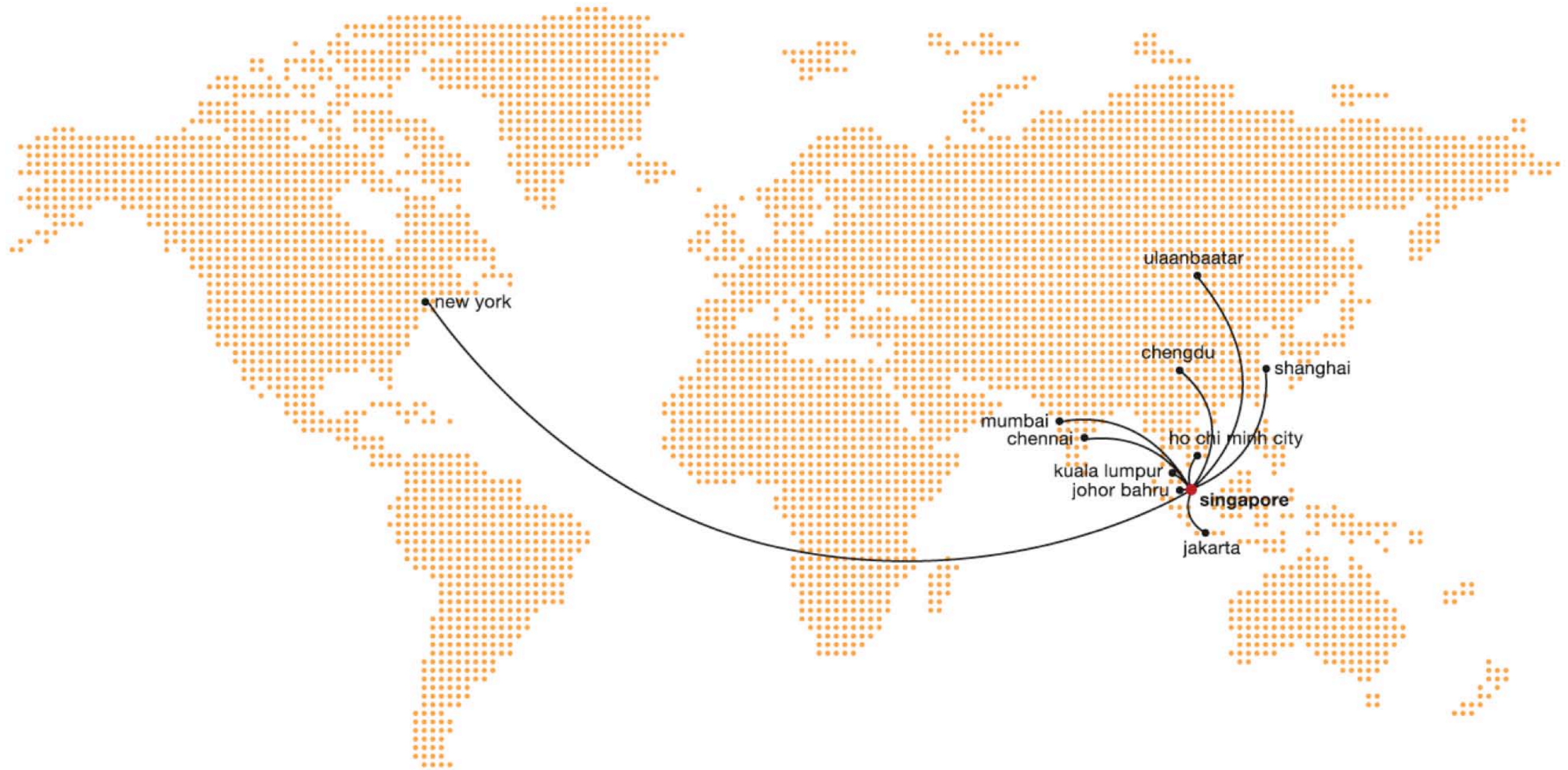
# 360 Solution Innovation in Built Spaces

Tai Lee Siang, Ong&Ong Group MD  
Vice Chair, World Green Building Council



# Ong&Ong Group

is a multidiscipline design house of about 1000 professional staff with 11 offices worldwide.



Masterplanning



Architecture



Interior Design



Landscape

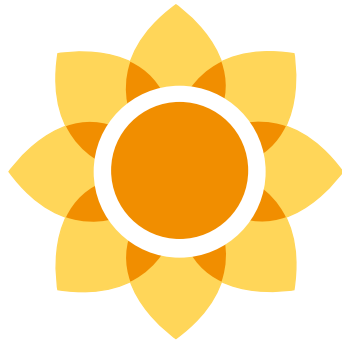


Lighting



Product & Branding





### 360° design solution

---

architecture

---

urban planning

---

landscape architecture

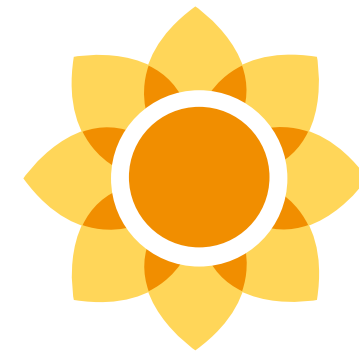
---

interior design

---

environmental graphic

---



### 360° engineering solution

---

mechanical engineering

---

electrical engineering

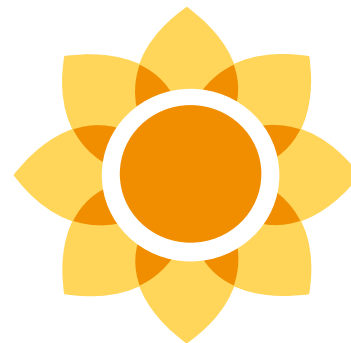
---

civil engineering

---

structural engineering

---



### 360° management solution

---

development management

---

project management

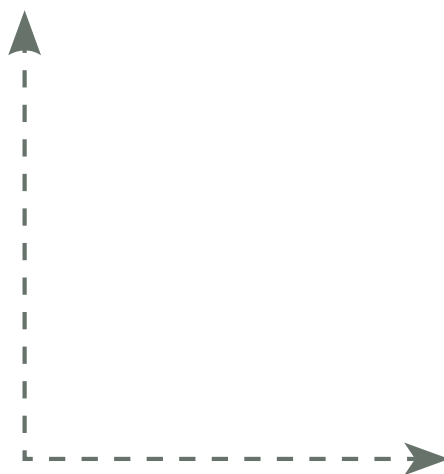
---

construction management

---

place management

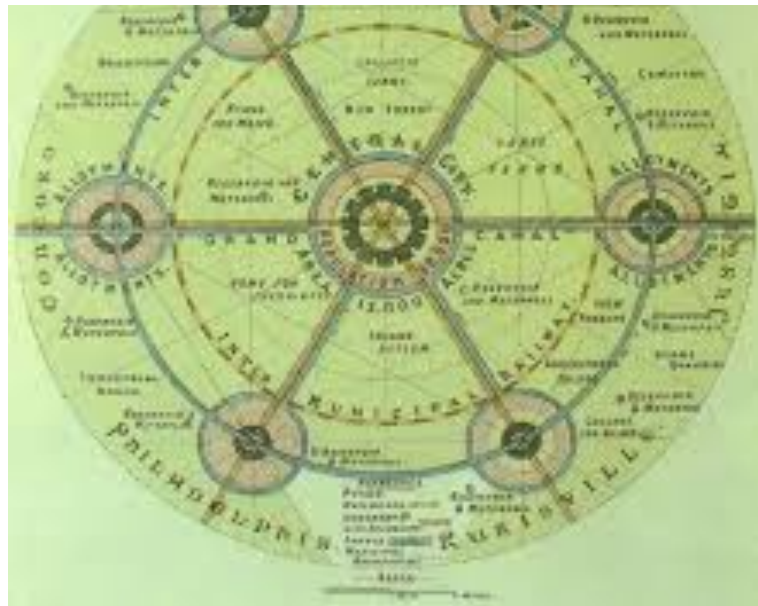
---



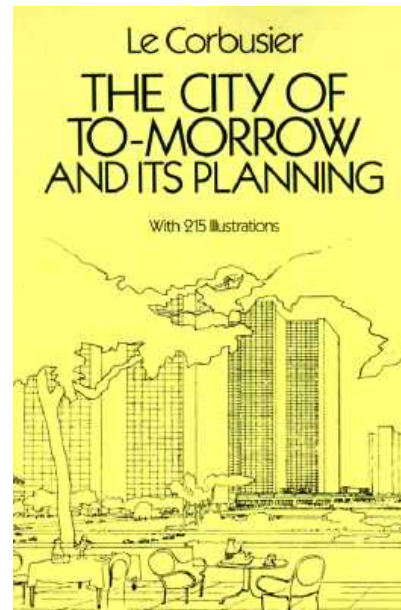


# Failed Urbanism

From 1920 to 2000s, city planning developed from low intensity to high density models  
Yet at the same time, life has not improved but more crises are looming



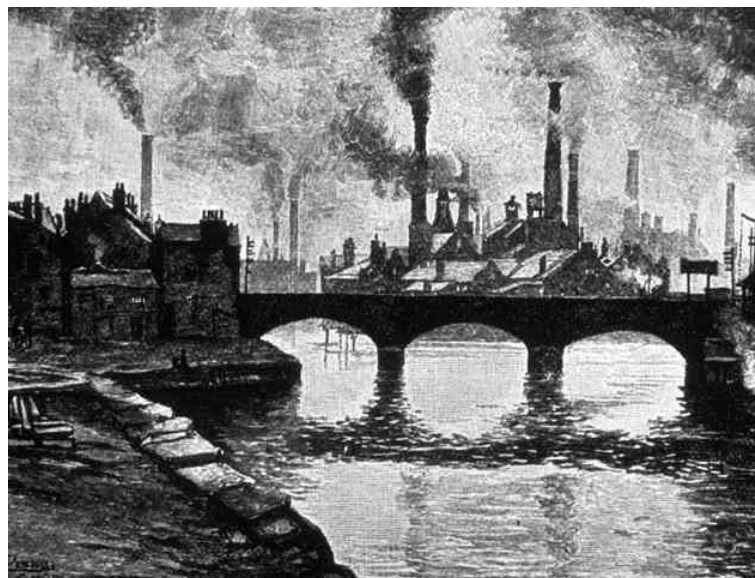
**Garden City**  
1920s



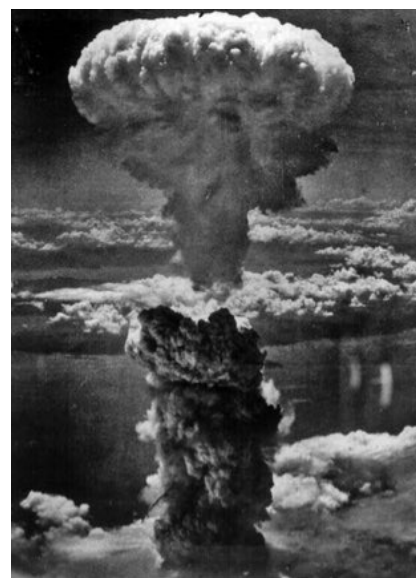
**City of Tomorrow**  
1940s



**City of Today**  
2000s



**Industrial Revolution**  
1920s



**WWII**  
1940s

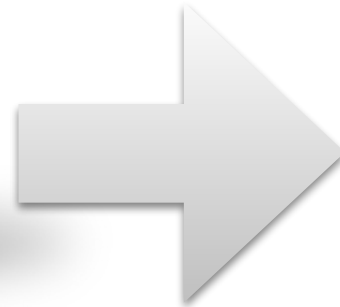


**City of Today**  
2000s



# Something is wrong !

Clearly we haven't learnt our lessons



Car-centric society

Land-use planning





# **360 Solution – Innovation in Built Spaces**

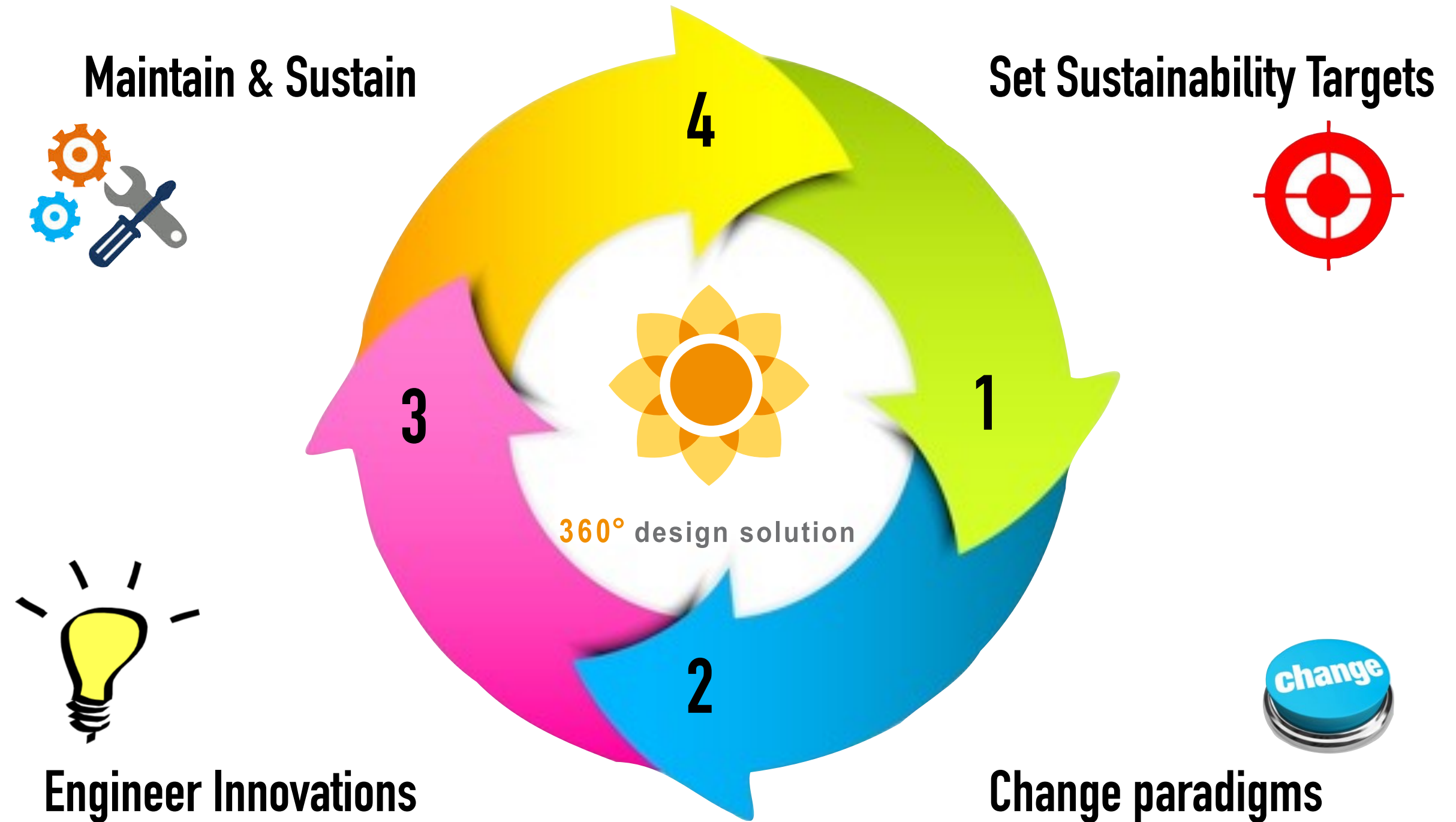
**One of the challenges faced by cities today is the need to rapidly develop and yet remain sustainable.**

**Ong&Ong seeks to develop innovative solutions based on**

**target setting, paradigm shift and innovations.**



# Sustainable Planning





1

# Set Sustainability Targets



Provision of  
Employment  
opportunities

< 2%  
Unemployment



Ratio of Housing units to  
population

Denmark  
1 : 2



Number of Motor  
Vehicles per 1000  
people

China  
69/1000 people



Electric power  
consumption per capita

Chile  
3,568 kWh/yr



Electricity generated  
from renewables

Austria  
74.6%



# Targets for 2030

Government has set lofty targets for greening Singapore by 2030 and is in progress for implementation.



Boosting our resource efficiency



Enhancing our urban environment



Building our capabilities



Fostering Community action

35%

Improvement in energy efficiency

70%

Recycling Rate

0.8Ha

Green space/ 1000 people

R&D

Invest in R&D to test new technologies

Community

Promote community efforts through community development councils

80%

Existing Buildings achieve Green Mark

900Ha

Reservoir and 100km of waterways

IGBC

International sharing of knowledge

Industry

Industry efficiency to be improved through productivity movements

140l

Per person/day Domestic consumption

70:30

Public : Private transport

12 $\mu$ g/m<sup>3</sup>

Reduce PM2.5 Levels

18,000

Green professionals to be trained





# 2

## **Change Paradigms**

### **New Paradigms of Urban Planning**

**Create close-knit families and society through keeping live-work-play in close proximity within gardenesque environment**



# Create job opportunities where people live

Deliberate placement of industry, commerce next to residence







# **Create conducive platform for people to connect**

**To mitigate issue of private transportation and lack of public transportation alternatives, a complete garden deck is raised 6m above road level.**



# Health & Wellbeing

People don't want monotony of land-use, they want variety of life



Mixed use project in Korea incorporating live, work, play and sports



# Change paradigms of planning

From vehicular centric to a pedestrian centric planning



2010s  
New Paradigm  
Pedestrian Campus

1970s  
Old Paradigm  
Road based Campus



University Town, National University of Singapore



# Minimize unnecessary travel

The notion of mixed mosaic land-use means people can walk to work.



University Town, National University of Singapore



# 3

## **Engineer Innovations**

**Think 360 !**

**Reduce dependency on high-energy modifier**

**Greenery as air purifier**

**Renewable energy development**



# Bring behavioral change

We need to design our buildings differently to encourage less dependency on air-conditioning



55 Blair Road – conservation project that utilises traditional courtyard to cool the environment



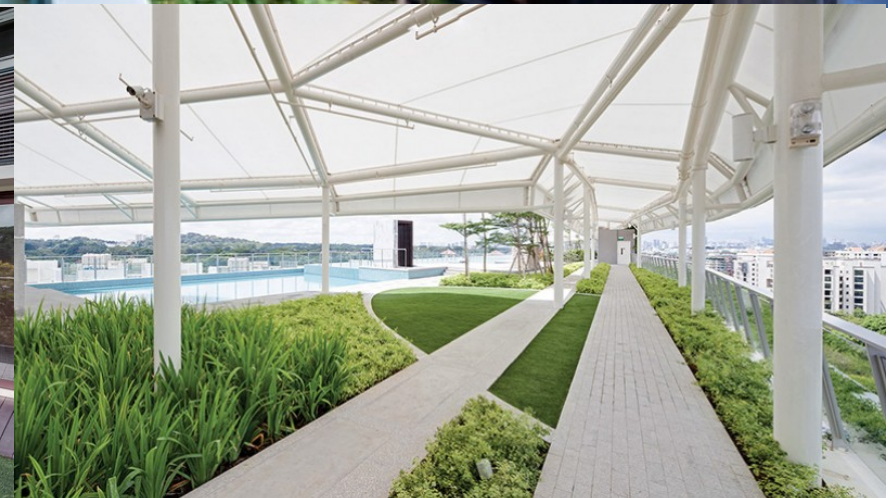


**55 Blair Road – conservation project that utilises traditional courtyard to cool the environment**



# Greenery as air purifier

Air pollution will soon challenge every habitat. Building incorporating high-rise greenery will act as sieve to help achieve better indoor air quality





# Net Zero Energy Town

HDB lease 3 MWp for 80 blocks of flats to provide solar energy for common areas in Punggol New Town.





# 4

## **Maintain & Sustain**

### **Keep Long Term Perspective**

**Invest in green and affordable buildings**

**Ensure maintainability**

**"Value Enhancement" of existing buildings**



# 80% population lives in Public Housing

All public housing in Singapore will be Green Mark Certified. These buildings are 50% of private properties and designed to last





# Upgrading Projects

Public housing are periodically upgraded to improve general environment and increase floor plan. This increases value of property and bring wealth.

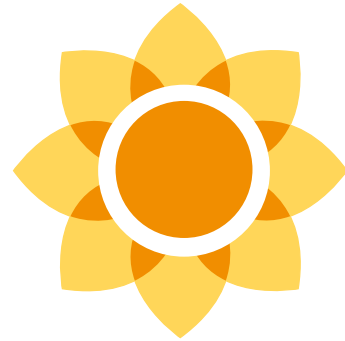






We must believe in creating sustainable society & city





360° design solution

# Thank You

[tai.lee.siang@ong-ong.com](mailto:tai.lee.siang@ong-ong.com)