

## NUS Real Estate Public Lecture 2018

This Lecture forms part of a series of Public Lectures organized by NUS Real Estate. These Lectures also serve as platforms for industry leaders and subject matter experts in the academia to come together to share insights and perspectives. Aside from the dissemination of knowledge and the sharing of viewpoints, enabling common interaction spaces would also facilitate the cross fertilization of ideas, and encourage the development of applicable and industry-relevant tools that can help guide and improve decision making and strategic planning outcomes.

### Shaping of Future Cities

Date/Time: 23<sup>rd</sup> March 2018, 12pm – 1.30pm  
Venue: Shaw Foundation Alumni House Auditorium

*This Lecture on “Shaping of Future Cities” looks into the possibility of what a future city would be like. New trends and factors, including technology, are reshaping our future cities. This requires our future city planners, architects and policy-makers to explore alternative / provocative concepts as well as implementation policies and processes for such cities of the future.*

#### Speaker:



#### Mr. Wong Heang Fine

*Mr Wong Heang Fine is Group CEO of Surbana Jurong Private Limited. A luminary in the commercial world, Heang Fine has held many key leadership positions across a number of industries over the last 35 years, including being the CEO of CapitaLand Singapore Limited (Residential) and CapitaLand GCC Holdings, and also the Country CEO in charge of developing CapitaLand’s business in the Gulf Cooperation Council region.*

[Read more ...](#)

**Video Excerpts:** [Lecture](#) / [Q&A Session](#)

## Key Messages

### A. Planning for Future Cities

- **Future-Proofing Cities to be:**
  - (i) Resilient, and
  - (ii) Sustainable
- **Planning for Resiliency**  
This involves: (a) catering to diminishing resources, and (b) mitigating the impact of severe climate change



Diminishing finite resources / issues that society would have to grapple with include water, food, energy and the 'economy'. Addressing and alleviating problems that might arise on the back of these issues include looking at the 'sponge city' concept, urban farming, eco-cities, and smart cities incorporating new building topologies.

Severe global climate change is manifested via rising sea levels and rising temperatures.

In this regard, the study of coastal adaptation and 'Urban Heat Island' effect would also allow us to refine our spectrum of solutions that include polder development and making improvements in building technology.

- **Planning for Sustainability Entails Actionable Steps in:**
  - (i) Building lasting communities,
  - (ii) Catering to issues that society faces, and
  - (iii) Building 'economic' cities

These can be achieved by integrating elements of work, live, play and learn, as well as designing new housing estates that take into account the fast changing population demographics. Aside from injecting vibrancy into integrated housing communities, the building of specialty townships and incorporating elements of 'wellness' are also key factors that should be looked into.

## **B. Examples from Surbana Jurong (SJ)**

- **Dealing with Diminishing Resources**
  - Eastern Economic Corridor, Thailand:  
Instead of reclaiming and building on a new plot of land, or demolishing existing agriculture in the area, SJ incorporated these spaces through urban farming, green facades, as well as space-saving shared facilities and underground structures. It also navigated the challenges that come with a low-lying plane that was prone to floods.
  - Floating ponds and high-intensity vertical fish farms, Singapore:  
Rather than purchasing seafood from the wet market and housing them for display in tanks, we may envisage restaurants obtaining instant fresh fish supplies from vertical fish farms located beneath flyovers or rooftops. Such modular and scalable vertical fish farms not only create a new building typology that intensifies land use, but also improves food supply resiliency and variety (rearing of higher-value marine food consumables such as abalone and 'sweet shrimps'). The integration of fish farms with vegetable farming is also being explored where drought resilient technology is tested.



- Tianjin Eco-city, China:  
The city aims to be eco-friendlier, instituting 26 key performance indicators that include safe storage of materials and optimal usage of space, amongst others.
- Net Zero Energy Building, National University of Singapore, Singapore:  
The first prototype building of its kind in Singapore – one that consumes, on balance, net zero energy. Its design incorporates smart building management systems, solar cells, as well as structures that allow natural lighting/ventilation.
- Jurong Innovation District, Singapore:  
Designing and accommodating ‘Industry 4.0’ which includes introducing new topology for transport, in the form of an upcoming underground rail system that directly connects the industry to the port, freeing up spaces above ground for other productive uses. The infrastructure planning and layout in the area would also allow for the extensive use of personal mobility devices for commuting.

- **Mitigating the Impact of Climate Change**

- The ‘SkyLab’ test facility\* located at the Building and Construction Authority (BCA) examines the impact of environmental warming and ‘urban heat island’ effects on buildings – results of analyses done could be used to assist in constructing and designing buildings which facilitate the dissipation of heat and/or alleviate rising temperatures in a particular area. Another pertinent development in this aspect is the exploration in polder development (for rising sea levels).



\* Note: BCA SkyLab is the world's first hi-rise rotatable lab for the tropics. Perched on the rooftop of BCA Academy's building, it simulates a representative unit of a typical hi-rise building, allowing tests to be carried out in real-world conditions. Its functions include: (1) testing of building technology before adoption, (2) supporting the development of codes and standards, (3) testing various air-conditioned and cooling facilities so as to optimise the level of comfort for tenants within a building.

- As buildings account for 40% of the world’s energy consumption today, making them more energy efficient will contribute to Singapore’s efforts in emission reduction. The BCA SkyLab also highlights Singapore’s vision of becoming a global leader in green buildings with expertise in the tropics and sub-tropics.

## **C. Challenges and Opportunities**

- **The ‘Sharing’ Economy – Implications on Existing Frameworks and Designs in Urban Planning.**
  - Example 1: Ride hailing platforms and the use of autonomous cars in the future may mean a reduction in carpark space provisions for new buildings and alternative usage of existing carpark spaces.
  - Example 2: Adoption of co-sharing work and living spaces may change how office spaces and travel accommodations are planned for in the future.
- **Impact on Existing Way of Life**
  - Commercial spaces which are rejigged from being ‘mixed-use’ to being ‘multi-use’.

- The accommodation of mechanical and electrical devices, spaces, storage arrangements and food security requirements to match the new building typologies and plans for Singapore.
- For cities to remain economical, a certain critical population mass is required to achieve economies of scale.



*From left: A/P Yu Shi Ming (Head, NUS Department of Real Estate); Mr. Wong Heang Fine (Group CEO, Surbana Jurong Pte Ltd); A/P Sing Tien Foo (Director, NUS Institute of Real Estate Studies)*