Sustaining Singapore’s Liveability: The Urban Systems Approach

Global Platform for Sustainable Cities Lunch Conversation
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Outline

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II. Singapore Liveability Framework
   ▪ Urban Systems Approach

III. Urban Systems for Liveability

IV. Urban Systems Case Study
   ▪ Singapore River and Marina Bay

V. Financing Urban Growth

VI. Sharing Urban Systems Knowledge
Singapore: The Challenges of a Small City-State

- Population of 5.61 million
- Land area of 719 km$^2$
- Population density of 7,800 persons/km$^2$
- Scarce and limited natural resources
- Need to create space to meet essential needs such as accessibility and connectivity (air, sea ports), defence and for survival (e.g. water supply)
I. Introduction

Singapore in the 1950s and 1960s
A newly independent country grappling with rapid urbanisation.

- Overcrowded slums
- High unemployment
- Water shortages
- Polluted river
- Traffic congestion
- Flooding
I. Introduction

Singapore Today
A highly liveable and sustainable city.
I. Introduction

CLC Liveability Matrix
I. Introduction

Centre for Liveable Cities
Established in 2008 by MND and MEWR as a knowledge centre for liveable and sustainable cities.
I. Introduction

CLC’s Value Proposition & Focus Areas

**Vision**
A global knowledge centre for liveable & sustainable cities

**Mission**
To distil, create and share knowledge on liveable & sustainable Cities

**Research**
- **Documentation**
- **Forward Looking (Applied)**

**Advisory Services**

**Capability Development**
Local & International Programmes

**Policy & Implementation**

**Knowledge Platforms**
World Cities Summit, Publications, Partnerships, CLC Lectures
II. Singapore Liveability Framework

A framework for planning and developing a liveable city.

Urban Systems

Integrated Master Planning & Development
1. Think long term
2. “Fight productively”
3. Build in flexibility
4. Execute effectively
5. Innovate systemically

Dynamic Urban Governance
1. Lead with vision and pragmatism
2. Build a culture of integrity
3. Cultivate sound institutions
4. Involve the community as stakeholders
5. Work with markets
III. Urban Systems for Liveability

Long-Term Planning

Concept Plan

Master Plan

Urban Design Plans

CENTRE for Liveable Cities SINGAPORE
Sustainable Living

In the 1950s, Singapore experienced severe housing shortages and overcrowding in urban slums and squatter settlements.

Newly independent Singapore’s government moved quickly to implement a public housing programme.
Sustainable Living

The Housing & Development Board was formed to develop low-cost public housing as quickly as possible.

First generation HDB blocks, Queenstown (1960)  
Newly developed Toa Payoh New Town (1967)
Sustainable Living

Today, more than 80% of Singaporeans live in high-density, high-rise HDB flats.

- HDB towns are self-sufficient communities, with commercial, transport, recreational and other facilities.
- Policies are in place to ensure social integration through a mix of flat types, racial quotas and common public spaces.
- These efforts promote community identities and foster a sense of home ownership and pride.
Sustainable Mobility

Singapore’s transport system was chaotic, with severe traffic congestion, poorly managed private bus services and decaying infrastructure.

There were little to no controls on car ownership.
Urban Systems for Liveability

Sustainable Mobility

The government implemented measures to improve the public transport system and reduce urban congestion.

- Development of the Mass Rapid Transit (MRT) system (1980s)

- Establishment of the Area Licensing Scheme (1975) and Electronic Road Pricing (1990)

- Introduction of Constellation Concept to establish regional centres to reduce CBD congestion (1991)
Urban Systems for Liveability

Sustainable Mobility

- High Density Developments Around Major Nodes
- Expanded cycling network
- Amenities close to housing
With rapid urbanisation and industrialisation, there was a need to balance environmental needs and economic interests.

Former Prime Minister Lee Kuan Yew’s vision was for Singapore to be a “Garden City” – a clean and green city state.
Sustainable Environment

Measures were taken to increase Singapore’s green cover, clean up polluted waterbodies and relocate industries.
Sustainable Environment

Today, Singapore is a City in a Garden, with a high proportion of green cover, park and nature areas, and clean waterways – even in the City Centre.
Urban Systems for Liveability

Sustainable Environment

Building a City in Nature

- City in Nature
- City of Gardens and Waters
- City in a Garden
- Garden City

Population density

Liveability
IV. Urban Systems Case Study

Tackling Singapore’s urban challenges systematically: Singapore River and Marina Bay

- Land amalgamation through acquisition
- Resettling people and developing public housing
- Cleaning up the rivers
- Urban planning
- Government Land Sales
- Conservation and Identity
- Sustainability
IV. Urban Systems Case Study

Land amalgamation through acquisition

- Land ownership highly fragmented
- Difficult to assemble large tracts of land to support urban redevelopment
- Government enacted law to acquire land for development
- Also introduced tax on enhancement in land value arising from development
Resettling people and developing public housing

- As government acquired land, residents had to be resettled
- Resident offered generous resettlement benefits
- Housing and Development Board established to build modern, low-cost public housing
- Policies to encourage home-ownership
- Today, 80% of Singaporeans live in attractive, well-connected and inclusive public housing estates
Singapore River Clean-Up

- Master Plan drawn up in 1977
- 26,000 families resettled, pig and duck farms phased out, street hawkers relocated
- Lighterage activities relocated to Pasir Panjang
- Cost nearly $300 million

The Singapore River clean-up made possible the further development of the CBD and Marina Bay.
Urban Planning

- Comprehensive planning framework for urban renewal in the Central Area
- Government took an action-oriented approach
IV. Urban Systems Case Study

Government Land Sales

- Started in 1960s, as a form of Public-Private Partnership in real estate
- Government sold land to developers through open tender for development
- GLS helped shape important districts: CBD, Singapore River, Marina Bay
Conservation & Identity

- Conservation policy to retain heritage-rich buildings, structures and districts, including at Singapore River
Sustainability: Marina Bay
A district planned on principles of sustainability, innovation and liveability.

- Designed to be seamless extension of the CBD
- A Common Services Tunnel system to house utilities underground, freeing up terrestrial space
- Many landscaped and open spaces throughout the precinct
Sustainability: Marina Bay
A district planned on principles of sustainability, innovation and liveability.

- Bay retained to create a waterfront city centre, forming a reservoir
- 100 hectares allocated to three public gardens – Gardens by the Bay
- Building a lifestyle precinct with commercial, entertainment and recreational spaces
Financing Urban Growth

World Bank

Singapore obtained loans from the World Bank and other institutions.

- 14 loans between 1963 and 1975, 10 exclusively for infrastructure
- Helped us develop water projects, ports, sanitation, power generating plants, telecoms facilities
- Loans from the World Bank amounted to S$ 90 million

Singapore paid back all its loans by the mid-1980s.
Fiscal Prudence

Informs many of our approaches to developing infrastructure.

- Public-Private Partnerships, e.g. in real estate, utilities, waste management, etc.
- Market-based pricing of public services
- Privatising public services

Fiscal prudence is enshrined in Singapore’s Constitution.
VI. Sharing Urban Systems Knowledge

Partnering the World Bank

- CLC works closely with Singapore Infrastructure and Urban Hub (est. 2009)
- Partnership has taken form of staff and client training programmes, joint research and publications, seminars
- Leverages CLC’s network of Singapore practitioners, researchers, policy-makers
VI. Sharing Urban Systems Knowledge

Partnering the World Bank

- Timely to strengthen and formalise our partnership
- Go beyond ad-hoc projects, working together more formally to promote the Urban Systems approach to sustainable urban growth
- We will pilot infrastructure action-planning workshops at Singapore Hub in June 2019 involving multiple stakeholders, bringing together World Bank clients, and experts across the urban development chain
- Intention is to help regional officials structure, plan and implement infrastructure projects, making them more bankable and attractive to capital markets
- Aim is to bridge the gap between urban infrastructure needs and financing requirements
VI. Sharing Urban Systems Knowledge

Amaravati, India

[Images of Amaravati and related infrastructure]

[Diagram of Capital City Master Plan and features along Green and Blue Network]

[Images of participants at an event]

[Image of a green area with water bodies and parks]

[Image of a modern cityscape]
VI. Sharing Urban Systems Knowledge

Suzhou Industrial Park

Co-chairperson (China)
Vice Premier*

Co-chairperson (Singapore)
Deputy Prime Minister*

Representatives include:
- Ministry of Commerce
- General Office of the State Council
- Ministry of Trade and Industry
- Ministry of Foreign Affairs

China-Singapore Suzhou Industrial Park Joint Steering Council (JSC)

China-Singapore Suzhou Industrial Park Joint Working Committee

CHINA: People's Government of Suzhou Municipality

SINGAPORE: Ministry of Trade and Industry

Office of Contact

Suzhou Industrial Park Adapting Singapore's Experience Office

Software Project Office of Ministry of Trade and Industry

CENTRE for LiveableCities SINGAPORE
VI. Sharing Urban Systems Knowledge

Suzhou Industrial Park

Six Key Areas for Economic Transformation and Development:

01. Dushu Lake Sci-Edu Innovation Park
02. Jinji Lake Central Business District
03. Ecological Science Hub
04. Integrated Free Trade Zone
05. Phase-3 New and Hi-Tech Industrial Zone
06. Yangcheng Lake Eco-Tourism Resort
VI. Sharing Urban Systems Knowledge

Tianjin Eco-city

Vice-Premier → Tianjin Eco-city Joint Steering Committee → Tianjin Eco-city Joint Working Committee → Office of Tianjin Eco-city Joint Working Committee → Tianjin Eco-city Administrative Committee

Ministry of Housing and Urban-Rural Development and other relevant Ministries

Deputy Prime Minister

MND and other relevant Ministries

Tianjin Municipal People’s Government & Tianjin Binhai People’s Government
VI. Sharing Urban Systems Knowledge

Tianjin Eco-city
VI. Sharing Urban Systems Knowledge

Sino-Singapore Guangzhou Knowledge City

[Diagram showing the structure of the consortiums and their affiliations]

- Singapore Consortium:
  - Temasek International + JTC Corporation
  - Ascendas-Singbridge Group
  - Knowledge City Pte Ltd

- Chinese Consortium:
  - Knowledge City Administrative Committee (KCAC)
  - Guangzhou Knowledge City Investment and Development Co., Ltd

- Sino-Singapore Guangzhou Knowledge City Investment and Development Co., Ltd

- Enterprise initiated
- Government supported
- Market driven
VI. Sharing Urban Systems Knowledge

Sino-Singapore Guangzhou Knowledge City
VI. Sharing Urban Systems Knowledge

**World Cities Summit**
An exclusive platform for government leaders and industry experts to address liveable and sustainable city challenges, share integrated urban solutions and forge new partnerships.

- LKY World City Prize Exhibitions
- Opening Plenary helmed by leaders from government and industry
- WCS Mayors Forum
- Group discussions at the WCS Young Leaders Symposium
- Networking events
- Visit to Singapore Botanic Gardens
Lee Kuan Yew World Cities Prize
International award to honour achievements and contributions to creation of liveable, vibrant and sustainable urban communities around the world.

2010 – Bilbao, Spain
2012 – New York City, USA
2014 – Suzhou, China
2016 – Medellín, Colombia
2018 – Seoul, South Korea
Sharing Urban Systems Knowledge

Singapore Sustainability Week

3 global events offering thought leadership, networking and collaboration in integrated urban solutions

Over 24,000 Attendees from 110 countries and regions

124 mayors and representatives from 119 cities at WCS Mayors Forum

$26 billion worth of projects, investments and MOUs announced

Over 1,100 companies participated in the exhibition
VI. Sharing Urban Systems Knowledge

World Cities Summit 2020

5 – 9 July 2020

Sands Expo & Convention Centre
Marina Bay Sands, Singapore

More information:
www.worldcitiessummit.com.sg
Questions and Answers