Transforming a City
The Singapore Experience

Bringing Innovations to Urban Renewal
International Conference
Urban Renewal Authority

Hong Kong Convention & Exhibition Centre
10 June 2016

Liu Thai Ker
Architect-Planner
Senior Director
RSP Architects Planners & Engineers

Chairman
Centre for Liveable Cities
Adjunct Professor
National University of Singapore

Past
CEO & Chief Architect
Housing & Development Board

CEO & Chief Planner
Urban Redevelopment Authority

Chairman
National Arts Council

Chairman
Singapore Tyler Print Institute

Singapore - Hong Kong
Long Friendship

Singapore
Area: 716 sqkm
POP: 5,400,000 2013

www.singstat.gov.sg

Hong Kong
Area: 1,104 sqkm
POP: 7,200,000 2013

www.gov.hk

Hong Kong
Area: 1,104 sqkm
POP: 7,200,000 2013

www.gov.hk
CONTENTS

●● COMPREHENSIVE SYSTEM WIDE ACTIONS
●● FAIR & EFFECTIVE IMPLEMENTATION
●● INTELLIGENT ADMINISTRATIVE CULTURE
●● INTELLIGENT PLANNING
●● LESSONS LEARNT
●● SHARING EXPERIENCE

●● COMPREHENSIVE SYSTEM - WIDE ACTIONS
Identify Needs
Take Actions Required

● Major Urgent Developments
  ○ Urban Development
    Service Financial District - Shenton Way
    Industrial Park - Jurong
    Petrochemical Park - Jurong Islands
    Air and Sea Ports - PSA, Changi
    Education Facilities - ITE, Polytechnics, Universities
    Health Facilities - Hospitals, Clinics, Sports Fields
  ○ Major Infrastructure Investment
    Water, Electricity, Sewage, Telecommunications

● Systematic Planning
  ○ Concept Plans 1971, 1991
    DGP ➔ Master Plan ➔ Regulations ➔ Enforcement
  ○ Public Housing Policy
    Push Factor
    Slum and Squatter Clearance
    Pull Factors
    Affordable Housing – Homeownership for All
    Highly Self Sufficient New Towns – Liveability
    Estates Upgrading – Appreciating Assets
• Urban Renewal & Conservation
  ○ Slum Clearance to Public Housing
    Lifting Rent Control ➔ Resettlement ➔ Rehabilitation
    Reconstruction
  ○ Preservation & Conservation
    Monument Preservation
    Historical District Conservation
    Historical Sites

• Complementary Measures
  ○ Better Environment
    Garden City Committee
    Walkway Unit
    Regular Repainting
  ○ Greener Environment
    Cleaning Singapore River
    Pollution Control
    Green Mark Award
    OTTV Control
    Bus Companies    MRT
  ○ Preventive Measures
    Land Speculation
    Deliberate Arson
    Deliberate Building Collapse

• SINGAPORE TRANSFORMED
  in a Nutshell
  ○ Old Singapore
    Dilapidated
    Poor
    Backward
  ○ New Singapore

• Old Singapore
  Where We began 50 Years Ago
Central Area With Fullerton Hotel, 1970

- Domestic
  - Modern Business Centres
  - Industrial Estates
  - Public Housing
  - Education & Art Venues
  - Efficient Transportation Systems
  - Clean, Green, Healthy

- Global
  - Largest International Seaport
  - One of the Best Airports
  - International Cruise Terminal

Central Area With Fullerton Hotel, 1990

- Protection
  - As Important as Development
    - Heritage
    - Nature
    - Underwater World
Secondary Jungle
More Species in 1 sqkm than North America

Chinatown

Kampong Glam

Little India
CONTENTS

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FAIR & EFFECTIVE IMPLEMENTATION

- Sound Public-Private Collaboration
- Authority to Deliver
- Intelligent Implementation system

Sound Public-Private Collaboration
Sensible Allocation of Responsibilities

Public-Private Collaboration
Reality Check
Government Creates Perfect Stage

People Perform Exciting Life’s Drama

Strong Executive Power
Strong Mandate From People

- Authority to Deliver
  - Single Territory to Plan
    - Central City, Districts, Counties
  - Single Set of Plans
    By URA + Master Plan Committee
  - Single Enforcement Authority
    - URA

- Effective Use of Land Acquisition Act
  From 30% Crown Land to 75% State Land
  Keep 25% for Free-Market Transaction

  Very Disciplined Approach
  Planning Process + Acquisition Process

  Government Always Honours
  Approved Public Purpose Usage

  Build Up Track Record
  Earns Trust from People

- Intelligent Implementation system

  Vision Strategies Policies
  Master Plan Macro Env
  Detailed Plan Micro Env
  Urban Design
  Legislation
  Promotion
  Development
  Clear Land
  Public Housing

  Public Housing Policy
  New Town Plans
  UD ED Reg
  Infra MP
  Detailed Infra Plan
  Eng Design
  Promotion
Walkability
Low Carbon
Home Ownership For All
Enhance Economic Developments
Embrace Value, Science & Art
Supply New Land For Commerce Ind. Housing
Clear Land
Public Housing
Public Housing Policy
New Town Plans
UD ED Reg
Detailed Plan Micro Env
Urban Design
Legislation
Develop -ment
Eng Design
Promotion
Ensure Functional City
Vision Strategies Policies
Master Plan Macro Env
Infra MP
Detailed Infra Plan
Embrace Economic Developments
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Always Fair and Rational
Highest Authority of Land
Not PM, nor President, But Rationality

□ COMPREHENSIVE SYSTEM WIDE ACTIONS
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□ INTELLIGENT PLANNING
□ LESSONS LEARNT
□ SHARING EXPERIENCE

□ INTELLIGENT ADMINISTRATIVE CULTURE
• Power of Anticipation
• Intelligent Agency Structure
• City Wide Track Record
○ **Power of Anticipation**

Spot Problems Before Citizens are Aware of

○ Process
  ➔ Public Discussion
  ➔ Draft Legislation or Plans
  ➔ Feedback & Persuasion
  ➔ Amendments
  ➔ Implementation

○ **Tackle Fundamental Issues**

More Root Causes than Symptoms
More Real Works with Some Theatre

○ **Acquire Effective Measures**

Consult Experts & Require Skills, Set Strategies
Rarely Interfere with Professional Works

○ **Intelligent Agency Structure**

○ **URA - Strong Feedback Loop**

Planning Input
Conservation

Concept Plan ➔ Dev. Guide Plan

Urban Design

Master Plan

Regulation
Planning Parameters

Enforcement ➔ Feedback

Research ➔ Innovation

Know Well Your Given Tasks
Define More Holistic Job Description

○ **OLD HDB – One Stop Service**

Acquire Land ➔ Resettle

Plan & Design ➔ Award Contract

Hand Over ➔ Manage & Maintain

Feedback ➔ Research ➔ Innovate

Know Well Your Given Tasks
Define More Holistic Job Description
### City Wide Track Record

<table>
<thead>
<tr>
<th>ITEMS</th>
<th>Unit</th>
<th>1960</th>
<th>1985</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>persons</td>
<td>1.64mil</td>
<td>2.74mil</td>
<td>5.54mil</td>
</tr>
<tr>
<td>Overall Land</td>
<td>sq.km.</td>
<td>581.5</td>
<td>620.5</td>
<td>719.1</td>
</tr>
<tr>
<td>Density</td>
<td>Persons /sq.km</td>
<td>3245</td>
<td>4409</td>
<td>7697</td>
</tr>
<tr>
<td>Urbanized Land</td>
<td>sq.km.</td>
<td>177.4</td>
<td>298.8</td>
<td>518</td>
</tr>
<tr>
<td>Density</td>
<td>Persons /sq.km</td>
<td>1059</td>
<td>9170</td>
<td>10,694</td>
</tr>
<tr>
<td>Squatters</td>
<td>Million Cases*</td>
<td>1.15</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Public Housing</td>
<td>% of population</td>
<td>23</td>
<td>81</td>
<td>83</td>
</tr>
<tr>
<td>House Ownership</td>
<td>% of Citizens &amp; PRs**</td>
<td>29.4</td>
<td>58.8</td>
<td>90</td>
</tr>
</tbody>
</table>

* Information supplied by LTK
** Total, including HDB, private apartments, landed properties

### Infrastructure Profile

<table>
<thead>
<tr>
<th>ITEMS</th>
<th>Unit</th>
<th>1960</th>
<th>1985</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>% of household supply</td>
<td>-</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Electricity</td>
<td>% of household supply</td>
<td>-</td>
<td>-</td>
<td>100</td>
</tr>
<tr>
<td>Sewage</td>
<td>% of household supply</td>
<td>-</td>
<td>90</td>
<td>100</td>
</tr>
<tr>
<td>Air Quality (PSI scale &lt;50 range)</td>
<td>% (of the year)</td>
<td>-</td>
<td>68</td>
<td>97</td>
</tr>
<tr>
<td>Water Supply</td>
<td>% of Treated Water</td>
<td>-</td>
<td>-</td>
<td>55</td>
</tr>
<tr>
<td>Garden City (Green coverage)</td>
<td>%</td>
<td>-</td>
<td>35.7</td>
<td>42.2</td>
</tr>
</tbody>
</table>

### Big Idea

Clarity + Competency = Confidence + Courage

### CONTENTS

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**INTELLIGENT PLANNING**

- Planning is still in its formative stage
- Concept Plan 1991
- HDB New Town Plans
- Rewards and Recognition
- Comments

Planning is still in its formative stage

No Clear Understanding
What needs to do, What need not do

Yet to Verify
Many Concepts, Principles, Components

Yet to Come to Grip with
Urban Planning Techniques and Methods

**Concept Plan 1991**

- Key Considerations
  - Know the Needs, Find Solutions = Innovation

- Quantity: Population, Density, Land Size
- Structure: Centres, Transit Lines
- Conservation: Nature, History
- Cells + Centres: Urban Cells, Cell Centres
- Organs: Big Essential Projects
- Hierarchy: Cells, Centres, Roads, Parks, Amenities
- Beauty: Plan, Life, Engineering, Architecture
  - Legible, Simple, Liveable, Beautiful

**Urban Systems**

- Key Components

  - Basic Urban Structure

  Key Components of Urban System
  - Nature
  - Heritage
  - **Urban Cells**: Region, Towns, N'Hood, etc
  - **Urban Organs**: Municipal and Transport Facilities, Heavy Industries
  - Urban Grids: Green & Blue Grids, Major Roads and Metro Lines
  - Infrastructure: (Drawing Not Included)
  - Urban Amenities: (Drawing Not Included)

**Master Plan**
♦ City Prototype

♦ 5 Urban Corridors, Transit-Oriented

♦ Integrated System - Systems Within System

♦ Master Plan – 1991
3.2 - 5.5 Million, by 2091   Annually 25,000 Planned, 104,000 Actual
Key Planning SKills
- Protect Heritage, Nature, then Develop
- Quantitative Approach
  - Space for Everyone for Every Activity on Future Standards
- Urban Cells
  - Decentralized Facilities & Amenities
- Hierarchical Concept
  - Roads, Cells, Centres, Facilities, Amenities, Urban Organs
- Land Use Integrated with Transportation
  - System Within Each System and Among All Systems
  - Identify Needs, Integrated Approach Towards Workable, Liveable, Prosperous, Beautiful City

HDB New Towns Plan
- Driving Forces for Public Housing
  - Large Population, Small Island
    - Forced to High Density, High-rise Housing
    - Lead to High Land Price, Low Affordability
  - Determined to Succeed
    - Ambitious but Realistic
    - Home Ownership for All
    - Highly Self-sufficient New Towns
  - Strong Government Support

New Town – Basic Urban Building Block
- Region - Central

Source: Adapted from HDB
♦ New Town - Bishan

♦ New Town Prototype
Decentralize and Bring Amenities Near Homes

♦ Landuse Table – Towards High Self-Sufficiency

<table>
<thead>
<tr>
<th>Landuse</th>
<th>Area (Ha)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>473.5</td>
<td>45</td>
</tr>
<tr>
<td>Commercial</td>
<td>83.5</td>
<td>7.9</td>
</tr>
<tr>
<td>Educational</td>
<td>72.1</td>
<td>6.9</td>
</tr>
<tr>
<td>Institution</td>
<td>21.6</td>
<td>2.1</td>
</tr>
<tr>
<td>Parks &amp; Gardens</td>
<td>74.1</td>
<td>7.0</td>
</tr>
<tr>
<td>Sports &amp; Recreation</td>
<td>15.8</td>
<td>1.5</td>
</tr>
<tr>
<td>Reserve Sites</td>
<td>3.0</td>
<td>0.3</td>
</tr>
<tr>
<td>Transportation</td>
<td>140.1</td>
<td>13.3</td>
</tr>
<tr>
<td>Industry</td>
<td>84.2</td>
<td>8.0</td>
</tr>
<tr>
<td>Utilities &amp; Others</td>
<td>84.2</td>
<td>8.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,052.0</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Source: RSP
Multi Roles of New Town

Basic Urban Building Block
Beyond Roof Over Every Head

But Also

Communities
Amenities
Environment
Ecology
Accessibility
Liveability

Key Planning Skills

Address Causes, Not Symptoms
For Sustainable Benefits, Not Instant Gratification

Translate Theories into Spatial Plans
Hierarchy, System
Cells, Organs, Grids

Design Self-Sufficient New Towns
Decentralize Amenities, Traffic

Rewards and Recognition
Not Perfect, Highly Credible

Ecology
No Scars - Hills, Fields, Rivers
No Pollution, Low Noise Level
No Flooding

Environment
Space For All People, All Activities
Heritage, Nature Sea
High Density, Not Oppressive
Garden City, Neat Urbanscape

Infrastructure
Works Well
Public Transportation Oriented
Flowing Traffic
Ample Amenities

Social By 1985
No Squatters
No Homeless
No Poverty Ghettos
No Ethnic Enclaves
○ Economy
  Prosperous Commercial, Industrial Centres
  Tourist Destinations
  93% Homeownership
  Big Middle-Class

○ Intelligence
  Safe
  Simple
  Comfortable
  Convenience
  Choices

○ To Have the Cake and Eat It
  2nd Largest Oil Refining City
  30 golf courses
  9 + 1 Airstrips

○ Satisfaction Level
  Happiest Place in Asia

○ Top 10 Best Night Life

Source: The Straits Times, 2006
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LESSONS LEARNT
SHARING EXPERIENCE

LESSONS LEARNT IN PLANNING

- Importance of Intelligent Approach
- Intelligent Plan Creation
- Intelligent Planning Process
- Beauty of a City
- Design vs Technology

Importance of Intelligent Approach
Planning involves
Value Science Art
Each Requires Careful Thinking
and Skills development
To put ideas on Paper
it Demands Intelligent Approach

Intelligent Plan Creation
○ Mindset Expected

VALUE
SCIENCE

ART
Skills Required

- Good for People + Land
- Romance with The Land

Task to Perform

- Vision Strategies + Good for People and Land
- Master Plan + Detailed Plan

Attributes to Possess

- Value → Humanist Heart → For People & Land
  - Spiritual Beauty
  - Nostalgia
- Science → Scientist Head → Machine for Living
  - Inner Beauty
  - Healthy
- Art → Artist Eyes → Romance with Land
  - Outer Beauty
  - Beautiful
**Intelligent Planning Process**

**Usual Approach**

```
Will
Urban Design
Master Plan
```

**Responsible Approach**

```
Will
Urban Design
```

---

**Beauty of a City**

- Status of Urban Centre
- Nature & Heritage
- Urban Plans
- Urban Design
- Engineering
- Architecture
- Non-Physical Beauty

---

**CONTENTS**

- Comprehensive System Wide Actions
- Fair & Effective Implementation
- Intelligent Administrative Culture
- Intelligent Planning
- Lessons Learnt
- Sharing Experience
**SHARING EXPERIENCE**

- Urban Planning
- Architecture

<table>
<thead>
<tr>
<th>N’hood</th>
<th>New Town</th>
<th>Region</th>
<th>City</th>
<th>Constellation City</th>
</tr>
</thead>
<tbody>
<tr>
<td>POP: 11.5 M</td>
<td>Area: 1,800 km²</td>
<td>2 Cities</td>
<td>2 Regions</td>
<td></td>
</tr>
</tbody>
</table>

**Planning**

- Constellation City
  - Greater Xi’an, Shannxi

**Greater Xi’an**

*Existing Master Plan*

Salient Data

- POP: 11.5 M
- Land: 1,800 km²

2 Cities & 2 Regions

*Strategic Holistic Plan*

Enhancing the Natural & Historical Environment
**Planning**

- City
  - Zhuhai City, Guangdong

**Salient Data**
- POP: 6.42 M
- Land: 1,711 km²
- Urbanised: 699km²

- Regions: 5
- New towns: 28

*Comprehensive Plan*

*Enhancing the Good Environment*
**Hengqin**  
National University Singapore

**Existing Master Plan 2009**  
**Proposed Master Plan 2013**

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**Artist Impression**

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**Dongjiakou**  
Qingdao Dongjiakou, Shandong

**Salient Data**

- POP: 2.9 M
- Land: 343 km²

Regions: 3

---

**Self Sustainable Port City**  
Enhancing the Natural Environment
**King Abdullah Economic City, Saudi Arabia**

**Proposed Master Plan**

- City

**Salient Data**
- **POP**: Planned 1.5M
- **Land**: 272 Km²
- **Regions**: 2
- **New Towns**: 12

*Brand New City*
*A City Rising Above Desert*

---

**Changdao County, Shandong**

**Proposed Master Plan**

- New Town – Tourism

**Salient Data**
- **POP**: 85,000
- **Land**: 32.17 km²

*Retaining the Natural Environment*
*Creating Chinese Vernacular Urban Environment*
Planning

- New Town – High Tech
  Kazan Innopolis, Republic of Tatarstan, Russia

Salient Data

- POP: Planned 150K
- Land: 20Km2
- Neighbourhoods: 7

A Comprehensive IT Park
Relate to Kazan City
**District Development**

- Cultural
  - Cultural Center, Weifang, Shandong

**Salient Data**

- Land: 26.7 ha
- GFA: 294,000 sqm (9 buildings)

*International Kite Capital*

*One of the Best Concert Hall in China*
Weifang Cultural Center  
**Site Plan**

Before     

After

---

**Artist Impression**

---

**Photo of Concert Hall**

---

**Architecture**

- **Residential**
  - Watermark Villas, Guilin, Guangxi

**Salient Data**

- **Land**: 63,000 sqm
- **GFA**: 27,860 sqm (50 villas)

---

**High Real Estate Value**

**Relate to Surroundings**
Guilin Watermark Villas

Artist Impression

Guilin Watermark Villas

Photo

Guilin Watermark Villas

Photo

- **Individual Building**
  - **Transport**
    - Marina Bay Cruise Center, Singapore

**Salient Data**

- Site Area: 4.02 Hectares
- GFA: 29,874 sqm

*Gateway to Singapore*
*Best Cruise Center in Asia*
Thank You

Dr. Liu Thai Ker
Liu_Thai_Ker@rsp.sg
www.rsp.com.sg