Transforming Singapore
from colonial port to global village

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Introduction

Transforming Singapore from colonial port to global village
Introduction: a city, metropolis, capital and estate
Introduction: a city, metropolis, capital and estate
Introduction: a city, metropolis, capital and estate
Introduction: a city, metropolis, capital and estate

Three decades of urban (re)development

Four decades of nationhood

Any natural resources

Only one port and their people
A deliberately planned beginning

Transforming Singapore from colonial port to global village
A deliberately planned beginning

Not only ships, but trade, and mainly culture
A deliberately planned beginning

1818 Sir Stamford Raffles Governor Bencoolen (Sumatra)
A deliberately planned beginning

February, 6th 1819 Treaty with exile’s sultan of Johor to establish a commercial post
A deliberately planned beginning

Free port of Singapore
A deliberately planned beginning
A deliberately planned beginning

<table>
<thead>
<tr>
<th>Year</th>
<th>Population</th>
<th>Spanish Dollars</th>
</tr>
</thead>
<tbody>
<tr>
<td>1818</td>
<td>15,000,000</td>
<td>6,000</td>
</tr>
<tr>
<td>1820</td>
<td>18,000,000</td>
<td>8,000</td>
</tr>
<tr>
<td>1822</td>
<td>20,000,000</td>
<td>10,000</td>
</tr>
<tr>
<td>1824</td>
<td>22,000,000</td>
<td>12,000</td>
</tr>
<tr>
<td>1826</td>
<td>24,000,000</td>
<td>14,000</td>
</tr>
</tbody>
</table>
A deliberately planned beginning
A deliberately planned beginning
A deliberately planned beginning

Jackson Plan 1822 inspired on European Enlightenment

Not only free trading, but also cultural and religious tolerance
A deliberately planned beginning
Unexpected nation

Transforming Singapore from colonial port to global village
“By the end of the SWW England start to give more autonomy to colonies.

At the same time that Singaporeans started to lose the trust on the British Government since it was not able to protect them from Japanese invasion.”
“In 1963 Singapore, Malaya, Sarawak & Sabah formed the Federation of Malaysia”

“Nevertheless, racial conflicts between Chinese Singaporeans and Malays, conducted to the early expulsion of Singapore from the Federation, becoming in 1965 an Unexpected Nation.”
Unexpected nation

**Structural weakness:**
- Not natural resources
- Inaccessible by road
- Not drinking water

**Conjuncture weakness**
- High unemployment rate
- No free agreement treaties
- No defense system
Unexpected nation

**Urbanistic weakness**

- Housing deficit
- Highly polluted rivers
- Highly congested CBD
- Poor designed/conserved urban fabric
- Not land for urban expansion
Unexpected nation

Overview

Singapore Situation in 1969 (memories of Singapore)
Unexpected nation

Over occupation

Population 1965
1,88 million people

Singapore Situation in 1963  (Abrams, et al., 1980)
Unexpected nation

Squatters

In 1949 300,000 lived in squatter slum areas.
Unexpected nation

Overcrowding

In 1949 200,000 lived in congested shop-houses

Singapore river shop-houses and warehouses before cleaning
Unexpected nation

Congested centre
Some buildings in decay

Singapore Situation in 1960’s (Memories of Singapore)
Unexpected nation

Congested centre

Radiocentric urban model

Singapore Situation in 1963 (Abrams, et al., 1980)
Unexpected nation

Congested centre

Overcrowded streets

Singapore Situation in 1960's (Memories of Singapore)
Unexpected nation

Environment treat

Singapore River, 1970
Beginning again

Transforming Singapore from colonial port to global village
Beginning, again

Where to start having so many problems and so few resources?
Beginning, again

Highly pragmatic approach “Management by objectives”
Beginning, again
Beginning, again

Industrialization the formula

• Land provision
• Taylorist-trained labor supply
• Tax rebates
• Limitation on Union and strike rights
Beginning, again

Stressing human resources

Singapore´s Discovery Centre (2007)
Beginning, again

Industrialization | Jurong

- 1961 Economic and Development Board
- 1962 The national huta started to be built
- 1963 there were the first 24 industries
- 1965 the Jurong Port was inaugurated
- 1968 Independent management board was constituted
- 1975 Singapore is the 3rd biggest oil refinery in the world since Esso and Shell were previously attracted
Beginning, again

Industrialization / Jurong

1995 7 islets merged into Jurong Island opened in 2000
In 2000 a redevelopment project for Jurong was launched
Beginning, again

Industrialization
Beginning, again

Industriulization | high added value attracted companies

- 1970s transistors
- 1980s microchips
- 1990s Leader in personal electronics production
Beginning, again

Not only foreigner enterprises, also Singaporeans

Private functioning-public funded enterprises (Government Linked Companies)
Beginning, again

Not only foreigner enterprises, also Singaporeans

Private functioning-public funded enterprises (Government Linked Companies)
Beginning, again

Industrialization | high added value attracted companies

In 1965 per capita GDP was US$ 400
In 2007 per capita GDP was US$ 35,160
Today, in terms of power purchase parity, Singapore is more productive than USA
Urban transformation

Transforming Singapore from colonial port to global village
Urban transformation

“In 1963, during the Merge with Malaysia, Singapore’s Government ask the guidance of United Nations to revise the old colonial 1955 Master Plan

Government asked the UN team “something more flexible and more suited to fast growth and change” (Abrams, et al., 1980, pp.86)
Urban transformation

Total Population


Total Population (in thousands):

- 1960: 3.000
- 1963: 3.300
- 1966: 3.600
- 1969: 3.900
- 1972: 4.200
- 1975: 4.500
- 1978: 4.800
- 1981: 5.100
- 1984: 5.400
- 1987: 5.700
- 1990: 6.000
- 1993: 6.300
- 1996: 6.600
- 1999: 6.900
- 2002: 7.200
- 2005: 7.500
- 2008: 7.800

Total population increase from 1960 to 2008: 4.800,000 people.
Urban transformation

UN team’s prevision for Singapore in 1982 if growth were going to continue under the same model

Envisaged 3.4 million would occupy 90% of Island.

Urban transformation

The UN team’s proposal

1) To transit from Rigid Master Plan to “Guiding Concept approach” + programs of action

2) To decentralize both economical and residential activities, resettling those living in squatters

3) Urban renewal to avoid CBD’s decay
Urban transformation

The UN team’s proposal

Decentralize, where and how?
Urban transformation

The UN team’s proposal

The “ring idea” inspired in the Randstad
Urban transformation

The UN team´s proposal

The “nodal and self-sufficient” idea inspired in Howard´s new towns
Urban transformation

The UN team’s proposal

A polycentric island-wide metropolis

Green heart (Water catchment, leisure, nature conservation)

Services (shops, cinemas, etc.) for residents

Industries (mainly manufacturing)

Facilities (schools, health services)

Accessible by road and mass transit system

A proposal for Singapore (Abrams, et al., 1980)
Urban transformation

The UN team’s proposal

Networked metropolis

- Freight train for port(s) and main industrial estates
- Limited access high speed inner ring road “green belt”
- Sea mass transit system

A proposal for Singapore (Abrams, et al., 1980)
Urban transformation
From Professor Otto Koenigsberger’s proposal to Concept Plan

<table>
<thead>
<tr>
<th>Land Use at Singapore Concept Plan 2001</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Recreation and community space</td>
<td>3</td>
<td>169</td>
</tr>
<tr>
<td>Parks and gardens, reservois and water catchments, sports complexes, schools and libraries</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Infrastructure</td>
<td>21</td>
<td>155</td>
</tr>
<tr>
<td>Transportation, airports, seaports, utilities, telecommunication</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Living space</td>
<td>19</td>
<td>140</td>
</tr>
<tr>
<td>High and low rise housing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Working space</td>
<td>19</td>
<td>140</td>
</tr>
<tr>
<td>Office, factories, warehouses, retail centers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other uses</td>
<td>18</td>
<td>132</td>
</tr>
<tr>
<td>Military camps and training areas, live firing areas, undeveloped</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>736</td>
</tr>
</tbody>
</table>

*Source: Y.S. Ming, H.K. Hin (2006)*
Urban transformation

The UN team’s proposal

“In only 60% of Island there would be a capacity for four million people”

How to accommodate so many people in so little space, preserving the Garden City idea?
Housing provision

Transforming Singapore from colonial port to global village
Housing provision

Housing Development Board

“The Housing Development Board was established on 1960 to redistribute population across the Island”

The formula for resettlement

- Squatter clearance
- Overcrowding reduction
- Social housing
Housing provision

Housing Development Board’s Structural Model (1970s)

Structural model’s 3 keystones:

1) Integrating transport and land use
2) Optimizing the use of land
3) Planning for social cohesion
Housing provision

1) Integrating transport and land use

Singapore’s Rapid Transit System (Lui and Tan, 2001)
Housing provision

1) Integrating transport and land use

Tampines´s New Town Centre (Foo, 2001)
Housing provision

1) Integrating transport and land use

Tampines´s New Town Centre (Foo, 2001)
Housing provision

2) Optimizing the use of land

Density

Diversity to foster self-containment

High Density Social Housing

Singapore’s food court

Compact City Model
Housing provision

2) Optimizing the use of land

Singapore’s Density Evolution (Lui and Tan, 2001)
Housing provision

2) Density for a garden-city metropolis
Housing provision

3) Planning for social cohesion

Chinese 75%
Malay 14%
Indians 9%
Housing provision

3) Planning for social cohesion

Most Singaporeans live in Housing Development Board (HDB) estates. The Ethnic Integration Policy (EIP) ensures a balanced mix to foster racial harmony in each block of flats. Pull out the tabs to see the mix of ethnicities that can be found in a block.

Singapore’s Discovery Centre (2007)
Housing provision

3) Planning for social cohesion

Three level hierarchical social urban environments

- **(New) Town**
  - 25 – 50 dwellings
  - 125-250 people

- **Neighbourhood**
  - (5 to 6 per Town)
  - 4-6 dwellings
  - 20-30 people

- **Precint**
  - (6 or 7 per neighbourhood)
  - 0.5-1 dwellings
  - 2.5-5 people

HDC hierarchical approach (Foo, 2001)
Housing provision

3) Planning for social cohesion

Three level hierarchical social urban environments

**(New) Town**
- (regional facilities in town centre)
- Working centres (e.g.: finance, manufacturing), semi-specialized retail, healthcare, secondary education.

**Neighbourhood**
- (local facilities in neigh. centre)
- Food courts, markets, schools, retailing

**Precint**
- (local amenities in common public area)
- Small park, children playground and very basic retail

HDC hierarchical approach (Foo, 2001)
Housing provision

3) Planning for social cohesion

Three level hierarchical social urban environments

HDC hierarchical approach (Foo, 2001)
Housing provision

3) Planning for social cohesion

“The precinct seems to foster identity sense among residents”

In 1986 Tan and Kwok conducted a survey to assess whether precincts catalyse social interaction.

Their study showed that in well precinted areas was:

1) A stronger sense of responsibility for public facilities and amenities

2) A more extensive neighbor-face recognition

3) A higher perception of friendliness and social networks within neighbors

Tampines precint centre (Foo, 2001)
Housing provision

Social developed housing, privately owned

<table>
<thead>
<tr>
<th>Units</th>
<th>1970</th>
<th>1990</th>
<th>2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permanent residential units</td>
<td>'000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>buildings</td>
<td>201</td>
<td>274</td>
<td>326</td>
</tr>
<tr>
<td>Population in public</td>
<td>%</td>
<td>32</td>
<td>87</td>
</tr>
<tr>
<td>housing towns</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. of new towns</td>
<td>Towns</td>
<td>1</td>
<td>16</td>
</tr>
<tr>
<td>Commercial floor space</td>
<td>Million sqm</td>
<td>0,6</td>
<td>5,3</td>
</tr>
<tr>
<td>Industrial floor space</td>
<td>Million sqm</td>
<td>1,7</td>
<td>13,3</td>
</tr>
</tbody>
</table>

Housing provision

Social developed housing, privately owned

One of the few sprawl-free metropolis in the world

Source: P.C. Lui and T.S. Tan (2001)
The green pathway

Transforming

Singapore

from colonial port to global village
The green pathway

Fighting the traffic congestion

Before buying a car it is necessary to “bid” for a Certificate of Entitlement. Government limits such certificates.

Electronic Road Pricing. The tolls roads (and CBD’s streets) are priced according to their demand. Land Transport Authority review fares quarterly and in vacation school periods.
The green pathway

Fighting the traffic congestion
The green pathway

Recovering the Singapore River

*In 1975 the Water and Drainage Act was passed to protect and recover natural areas. Singapore and Kallang Rivers were cleaned up.*

*In 1987 they celebrated the “Clean Rivers Conmemoration” And inaugurated the new urban rivers*
The green pathway

Constructing a green network

In 1963 a Garden City Spirit was launched by means or the “Tree Plantation Day” to reforest both the public and private space.

In 1973 a Garden City Committee was formed to guide Singapore’s greenery policy

Today the Garden City is part of Singaporeans National Identity.
The green pathway

Constructing a green network

<table>
<thead>
<tr>
<th>Category</th>
<th>Existing (ha)</th>
<th>Year Xb (ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regional park</td>
<td>2.436</td>
<td>3.607</td>
</tr>
<tr>
<td>Neighbourhood park</td>
<td>311</td>
<td>507</td>
</tr>
<tr>
<td>Park connector network</td>
<td>35</td>
<td>286</td>
</tr>
<tr>
<td>Total</td>
<td>2.782</td>
<td>4.400</td>
</tr>
</tbody>
</table>

| Ha/1000                       | 0,67          | 0,80         |

a As at June 2003.
b Based on a projected population of 5.5 million.

The green pathway

Constructing a green network

Fig. 5. Typical cross-section of park connectors along road reserve.
The green pathway

Constructing a green network
Urban renewal

Transforming Singapore from colonial port to global village
Urban Redevelopment

Preventing CBDs from decay

In 1973 Urban Redevelopment Authority was settled to avoid CBD’s decay by providing state of the art facilities and premises.

In order to solve the over-fragmented property structure URA was given powers to acquire land. In 1949 public land accounted by 31% of Island’s land, by 1986 public land represented 76%.

To foster manufacturing to relocate in specific industrial estates, tax properties were raised in CBD, at the same time, that tax rebates were offered in new designed industrial estates.

Local street food-sellers were relocated in food courts across the city, and new retail activities attracted by tax exceptions.
Urban Redevelopment

Preventing CBDs from decay: the keystones

1) To lodge new retail centers both for Island-wide population and for tourists.

2) To lodge new financial emerging financial sector. Nowadays Singapore is the 4th financial market in terms of currency exchange, is the financial hub of Southwest Asia.

3) To liberate floor space for greenery and preserve national built heritage.
Urban Redevelopment

Preventing CBDs from decay: the keystones

Shopping Malls Cluster at Orchard Road
Rafle’s City Shopping Centre
Urban Redevelopment

Preventing CBDs from decay: the keystones

Financial Cluster
Urban Redevelopment

Preventing CBDs from decay: the keystones

Heritage preservation
Urban Redevelopment

Preventing CBDs from decay: the keystones

Esplanade Theater & Concert Halls
Urban Redevelopment

Leisure at Sentosa
Urban Redevelopment

The linkage to the new Singapore’s CBD

Double Helix Bridge
Urban Redevelopment

A new Singapore's CBD for a new economy
Urban Redevelopment

A new Singapore's CBD for a new economy

1) To lodge cultural and leisure facilities

2) To develop residential facilities for both leisure and CBD-working population

3) To lodge new economic activities related both with IT and R+D industries.
Urban Redevelopment

A new Singapore's CBD for a new economy
Urban Redevelopment

A new Singapore's CBD for a new economy
Uncertain future
Transforming Singapore from colonial port to global village
Transforming Singapore from colonial port to global village