Sustainable Affordable Housing for a Nation
The Singapore Success Story

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World Bank holds Singapore up as model of development, pointing to sound policies in urbanisation.

The "Miracle" Transformation

From 3rd World to 1st in One Life Time!

Singapore, the benchmark in successful economic development.
About Surbana

• Formerly the Technical Consultancy Division of the Housing & Development Board (HDB) of Singapore

• Unique International Multidisciplinary Building Consultancy Outfit

• Expertise grounded & perfected in practice for over half a century

• Housing for Singaporeans - 27 World Class Townships – 1,000,000 homes

• Key Player in Singapore’s Success Story

• To date, projects in 27 countries & 95 cities

• We plan, Design & Implement Liveable Futures

• We pride ourselves with providing 1st mover solutions that help transforming communities globally
Some Challenges for Cities

- Uncontrolled Urban Sprawl
- High Unemployment

**Housing Shortage**

- Aging Strained Infrastructure
- Increasing Crime Rate
- Pollution
- Traffic Congestion
- Lack of Economic Sustainability
- Energy & Water Security

*Implications:*

The need to achieve sustainability in the development of cities becomes an economic & environmental imperative.
The Makings of a Great City

Liveability... Liveability... Liveability...

“Liveability is concerned with **the quality of space & the built environment**. It is about how easy a place is to use and how safe it feels. It is about creating & maintaining a sense of place by creating an environment that is both inviting & enjoyable.”

*UK Department of Communities & Local Government*

Some Liveability Benchmarks:

- Reliability of Utilities Services
- Quality of Transport system
- Culturally Vibrancy of City
- Sustainable Living & Development
- Visitor friendly place
- Safe and Secure City
- Economic Vibrancy
- Education Opportunities

Liveable Cities compete more effectively for talent & limited FDIs

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**Sustainable Affordable Housing for a Nation – The Singapore Success Story**
Success Formula for Singapore’s Sustainable Public Housing Programme

1. Government Commitment
   - Land Acquisition Act
   - Housing Development Act
   - Funding for Public Housing
   - Creation of CPF
   - Govt. Key Policy Driver of Development

2. Comprehensive National Planning & Development of Technical & Manpower Resources
   - Long-term Land Use Plan
   - Creation of Total Living Concept
   - Technical & Manpower Resource Development

3. Home Ownership Scheme
   - Innovative Ownership Schemes for the Working & Middle Class
   - Transparent Rules to Prevent Abuse

4. Estate Management
   - Mandatory Payment of Service & Conservancy Charges
   - Govt Funding for Maintenance
   - Leveraging off Technology Based Monitoring & Management Systems

Sustainable Affordable Housing for a Nation – The Singapore Success Story
1. Land Banking

- In 1967, the government legislated the **Land Acquisition Act** which empowered it to acquire land at low cost for public use.
- Today, 90% of land is owned by the state as opposed to 49% in 1965.
- This Act, together with sensitive resettlement policies, enabled HDB to clear squatters and slum areas smoothly and, in their place, build new and a HDB flats.

2. Establishing an Institution to Focus only on Affordable Housing

- The **Housing & Development Act (1960)** gave the Housing and Development Board (HDB) legal authority on public housing matters.
3. Establishing of the Central Provident Fund (CPF)

Key Principles
- Self Reliance
- Strong Work Ethics
- Family Support

CPF Savings

- Employee’s Contribution (20% of gross salary)
- Employer’s Contribution (14.5% of gross salary)
- Voluntary Contribution

Housing
- Basic Tertiary Education
- Investment

Ordinary Account (OA)

Approved investment products

Special Account (SA)

MediSave Account (MA)

Retirement Account (RA)
- Retirement (Created at age 55)

Hospitalization expenses of self & immediate family

Key Principles
- Self Reliance
- Strong Work Ethics
- Family Support

Sustainable Affordable Housing for a Nation – The Singapore Success Story
4. Government – the Banker of Public Housing

- **Cheaper Financing for the Poor**
- **Land Cost not factored into the Sale Price of Apartment**
5. Leveraging off the Social Engineering Dimension of Public Housing

- Ethnic Integration Policy
- Economic Integration Policy
- Designing Total Living Environments
- Policies to encourage family units to stay together
- Building a more cohesive society
6.0 Asset Enhancement Strategy for every citizen

- Every Citizen will have a roof over his / her head
- Diversity of home designs for sale and rental
- Adequate government subsidies to ensure housing affordability
- Developing a vibrant secondary market for public housing
- Developing clear and transparent rules governing the buying and sales of Public Housing – prevention of real estate speculation
Defining Liveability through Total Living Concept for Townships

Comprehensive National Planning & New Town Developments

Singapore Townships are masterpieces of seamless development integration

Industrial

Commercial

Institutional

Recreational

Residential

Industrial

Commercial

Institutional

Recreational

Defining Liveability through Total Living Concept for Townships

Sustainable Affordable Housing for a Nation – The Singapore Success Story
Secure Total Living Environment to Live, Work & Play to draw people away from crowded city centres

Each Townships - Seamless Integration between Residential, Institutional, Commercial, Industrial, Recreational & Infrastructural Developments

Yishun
- Town planned on Neighbourhood Concept
- 84,000 dwelling units; 810 ha
- 104 du/ha

Punggol
- A 21st Century New Town
- 96,000 dwelling units; 844 ha
- 114 du/ha

Source: Housing and Development Board, Oct 2008
Sustainable Mass Housing Design & Construction Strategy

- Holistic Approach
- Establishing the technical and manpower resources to build better quality housing faster

**Strategies**

- Design Innovation and Construction Technology
  - Modulation design
  - Standardisation
  - Mechanization
  - Prefabrication
  - Construction Method
  - QC System

- Supply and Management of Critical Resources
  - Stockpiling:
    - Sand
    - Cement
    - Aggregates
    - Steel Bars

- Training
  - Professional
  - Vocational

- R&D
  - Innovation
  - Collaboration

- Finance
  - Govt Incentives
  - Soft loans
  - Land Concessions

- Legislation
  - Buildability Rating Systems

Comprehensive National Planning & New Town Developments

Sustainable Affordable Housing for a Nation – The Singapore Success Story
Comprehensive National Planning & New Town Developments

Design Innovation & Construction Technology

- Limiting the variation in Unit Types
- Standardisation of building component dimensions
- Designs that facilitate the use of Industrialised Construction Methods
- Achieving economies of scale

Sustainable Affordable Housing for a Nation – The Singapore Success Story
Comprehensive National Planning & New Town Developments

Design Innovation & Construction Technology

Precast Plank Slabs
Segmented Water Tank
Precast Stair flights
Precast Columns
Precast Wall

Precast Parapets
Precast Facades
Segmented Water Tank
Precast Stair flights

Standardised Building Components
- Off site construction
- Faster Construction Turn around Time
- Better Apartment Quality

Sustainable Affordable Housing for a Nation – The Singapore Success Story
Supply & Management of Critical Resources

Better Management of Critical Building Resources

Stock pile of critical resources
- Sand
- Cement
- Aggregates

Advantages
- Better Quality control at Source
- Hedging against future material price increases
Singapore Construction Industry Training Institute (CITI)

- Development of core group of consultants/contractors / suppliers / workers
- Skills Certification
- Multitask Training
- Uplifting Professionalism in the Industry
Extensive use of Timber formwork in early 1970s

Extensive Use of Metal formwork in 1980s

Minimal Metal formwork working in Tandem with Precast Technology in the 1990s

Helping Contractors Upgrade and Automate Construction Processes

1970’s - 2 Bag Mixer

1980’s - Semi-Automated Site Batching

Today’s Concrete Batching Plant

Sustainable Affordable Housing for a Nation – The Singapore Success Story
Legislation of Buildable Design

Buildable score system

• Appraisal System for all Building Developments

• High Buildable Scores equals to More Efficient Labour Usage in construction and hence Higher Site Labour Productivity

• Projects scoring below a minimum score will have plans rejected
## Home Ownership Schemes

### Clear Guidelines on Eligibility to Purchase Public Housing

**1968** – Government allowed the use of compulsory savings from CPF to buy HDB flats

<table>
<thead>
<tr>
<th>Eligibility Conditions</th>
<th>Singapore Citizen</th>
<th>&gt;= 21yrs of age</th>
<th>Must form a family nucleus</th>
<th>Household income Ceiling</th>
<th>Able to Own other private residential property</th>
<th>To be First-Home*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buying a Flat Direct from HDB</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>$8,000/mth</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Buying a Resale Flat in Open Market</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>No</td>
</tr>
<tr>
<td>With CPF Grant</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>$8,000/mth</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Without CPF grant</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Nil</td>
<td>Yes, subject to certain conditions</td>
<td>No</td>
</tr>
<tr>
<td>Open to PRs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Buying a Flat under Design, Build &amp; Sell Scheme (DBSS)</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>$8,000/mth</td>
<td>No</td>
<td>Yes for CPF grant</td>
</tr>
<tr>
<td>Buying a studio Apartment</td>
<td>Yes</td>
<td>&gt;= 55yrs of age</td>
<td>No</td>
<td>$8,000/mth</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

“First-Home” refers to those who have not bought any flat direct from HDB nor enjoyed any housing subsidy. Open Market offers a wider choice of flat-types and location. There is also no waiting time.

*Source: Housing and Development Board, Oct 2008*

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1968 – Government allowed the use of compulsory savings from CPF to buy HDB flats.
### Sampling of Home Financing - HDB the Banker for the people

<table>
<thead>
<tr>
<th>Flat Type</th>
<th>2-Room</th>
<th>3-Room</th>
<th>4-Room</th>
<th>5-Room</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Floor Area (Sq m)</td>
<td>45</td>
<td>65</td>
<td>90</td>
<td>110</td>
</tr>
<tr>
<td>Average Indicative Selling Prices* ( S$ )</td>
<td>$88,000</td>
<td>$146,000</td>
<td>$251,000</td>
<td>$339,000</td>
</tr>
<tr>
<td>Median Monthly Income**</td>
<td>$1,300</td>
<td>$2,100</td>
<td>$4,400</td>
<td>$5,400</td>
</tr>
<tr>
<td>Additional Housing Grant, if eligible***</td>
<td>$30,000</td>
<td>$20,000</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Monthly Instalment#</td>
<td>$232</td>
<td>$504</td>
<td>$904</td>
<td>$1,221</td>
</tr>
</tbody>
</table>

* Average selling prices for new HDB flats under various stages of completion offered in 2008 in Non-Matured Estates.

** Refers to monthly household income of First Time BTO applicants, typically young couples (aged below 35) buying a flat direct from HDB in 1Q – 3Q 08.

*** Additional Housing Grant (as at 2008) is assumed to first offset the 10% downpayment, where applicable.

# Computed based on max. 90% of Average Indicative Selling Prices and interest rate of 2.6%. Assumed applicants are aged 35 & below and household consists of 2 adults.

* Source: Housing and Development Board, Oct 2008

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**Pricing of Housing to Ensure Affordability**

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**Sustainable Affordable Housing for a Nation – The Singapore Success Story**
### Home Ownership Schemes

#### Housing for the Elderly & Singles

<table>
<thead>
<tr>
<th>Schemes</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Studio Apartments (for the elderly)</strong></td>
<td>Launched in 1998 to provide another housing option for the elderly. These apartments are specially designed with elderly-friendly features. Social/communal facilities such as Neighbourhood Links, run by the Voluntary Welfare Organisations, are also provided where possible.</td>
</tr>
<tr>
<td><strong>To Help Singles</strong></td>
<td>Single Singaporeans &gt;35yrs of age can purchase a resale flat of any type and location. Eligible applicants whose gross household income &lt;=$3,000/mth, and are buying up to 5-Room resale flat, can apply for a CPF Housing Grant of $11,000.</td>
</tr>
<tr>
<td><strong>Joint Singles:</strong></td>
<td>Two or more Singaporeans &gt;=35yrs can jointly purchase a resale flat of any type and location. All eligible applicants whose gross household income not more than $8,000, can apply for a CPF Housing Grant. A maximum of two singles will receive a grant of $11,000 each.</td>
</tr>
</tbody>
</table>

*Note: The CPF Housing Grant is given only if the applicants have not enjoyed such grant for a previous flat or have not purchased a subsidised flat direct from HDB before.*

*Source: Housing and Development Board, Oct 2008*
**ELIGIBILITY CONDITIONS FOR RENTAL OF HDB FLATS**

<table>
<thead>
<tr>
<th>Public Rental Scheme</th>
<th>Rent and Purchase Scheme</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-Room (Average floor area 33 sqm)</td>
<td>3-Room (Average floor area 60 sqm)</td>
</tr>
<tr>
<td>• Singapore Citizens</td>
<td>• Singapore Citizens</td>
</tr>
<tr>
<td>• &gt;= 21 yrs of age</td>
<td>• &gt;= 21 yrs of age</td>
</tr>
<tr>
<td>• Total household income &lt;=$1,500</td>
<td>• Total household income $801 to $2,000</td>
</tr>
<tr>
<td>• Must form a family nucleus</td>
<td>• Must form a family nucleus</td>
</tr>
<tr>
<td>• Must not own any property</td>
<td>• Must not own any property (except a 2-Room flat)</td>
</tr>
<tr>
<td></td>
<td>• Must be a first-timer or second-time who has met the 5-yrs time bar</td>
</tr>
</tbody>
</table>

**Rental Rates**

<table>
<thead>
<tr>
<th>Public Rental Scheme</th>
<th>Rent and Purchase Scheme</th>
</tr>
</thead>
<tbody>
<tr>
<td>(A) Income &lt;$800: $26 - $33</td>
<td>(A) Income &lt;$800: $44 - $75</td>
</tr>
<tr>
<td>(B) Income $801 - $1,500: $90 - $123</td>
<td>(B) Income $801 - $1,500: $123 - $165</td>
</tr>
<tr>
<td>(c) Income $801 - $2,000: $100 to $206*</td>
<td></td>
</tr>
</tbody>
</table>

*For first 2 years of tenancy, depending on household income. Rental would be revised upwards by 20% at each subsequent renewal of tenancy.*

Source: Housing and Development Board, Oct 2008
Typical Maintenance Problems faced by Singapore Townships

- Budget Control and Arrears Management
- Planning & Coordination of routine and improvement works
- Managing hundreds of contractors upkeeping the aesthetics and functional value of the town
- Managing a large inventory of lifts that comply with stringent performance standards
  - Lift rescue operation within 25 minutes
  - Lift breakdown attended within 2 hours
- Citizen Relationship Management (CRM)
  - Complaints must be resolved within the time limit according to severity
- Ensuring security of the residents and properties
Estate management functions of the common areas in housing estates are carried out by Town Councils through routine and cyclical maintenance.

Flat owners pay monthly Service & Conservancy charges to the Town Councils managing their estates based on their flat type, citizenship, etc.

<table>
<thead>
<tr>
<th>Flat Type</th>
<th>1-Room</th>
<th>2-Room</th>
<th>3-Room</th>
<th>4-Room</th>
<th>5-Room</th>
<th>Executive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monthly Charges</td>
<td>$18.00 to</td>
<td>$25.50 to</td>
<td>$36.00 to</td>
<td>$47.00 to</td>
<td>$59.00 to</td>
<td>$75.00 to</td>
</tr>
<tr>
<td></td>
<td>$19.50</td>
<td>$29.00</td>
<td>$40.00</td>
<td>$56.50</td>
<td>$68.50</td>
<td>$85.00</td>
</tr>
</tbody>
</table>

The Government also provides funds pegged against the no. of apartment units in each Township to support cyclical maintenance works.

- The Government also provides funds pegged against the no. of apartment units in each Township to support cyclical maintenance works.

Funding from the Government

- 1-Room Apartment: S$35.00
- 4-Room Apartment: S$9.00
- 5-Room and above/ Executive Apartment: -
Leveraging off ICT to Facilitate Large Scale Performance Based Asset Management Solutions

“If you cannot measure it, you cannot improve it” - Lord Kelvin

Benefits

(a) Interface managing information flow between the Municipal Authorities and all service providers
(b) Injecting transparency and accountability into all maintenance work processes
(c) Facilitating paperless archiving and efficient retrieval of information
(d) Comprehensive real time information updates for more effective business/operational decision making
(e) Facilitates performance based outsourcing and contracting
(f) Automation / digitalisation of work processes
(g) More productive and cost effective deployment of maintenance resources
(h) Better budget control leading to long-term cost savings in the maintenance process
(i) Effective execution of Customer Relationship Management
(j) Better branding and image

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Preserving & Enhancing Asset Values through better Estates Upkeep

Integrated Estate Management (IEMS™) – Meeting the challenge of managing the maintenance of building assets in 26 world class Townships in Singapore. 24/7 Monitoring & real time updating-facilitating critical business decisions making

Sustainable Affordable Housing for a Nation – The Singapore Success Story
…the Government’s latest move to introduce a report card system to grade the performance of town councils…
Take Aways from Singapore Housing Success Story

- Undisputed control of land use made possible through extensive Land Banking at the start of Nation Building

- Land Cost is not injected into the sale price of public housing

- Sustainable Financing through the Compulsory National Savings instrument CPF – providing Singaporeans with the means to pay for their public housing

- Development & Implementation of standardised housing types and investment in manpower upgrading and building technology from the sole provider of Public Housing (HDB) – key to speeding up housing building programme without compromise in quality.

- Establishment of strict rules regarding the purchase and sales of public housing together with a well implemented estates maintenance strategy have helped enhance asset values of citizens through an established secondary market for social housing
Thank You

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