HDB P.E.A.K. FORUM 2013

THE NEXT MILLION HOMES

Speaker
TAN CHENG SIONG
President Design Award 2012, Designer of the Year
SIA Gold Medal Award 2013

4 September 2013

Overview

We became a World City

Delivering Low Cost Housing
Delivering Prosperity
Delivering Global Economy

In the process, we

Enlarge Singapore by 125km^2 from 585km^2
Increase population from 1.3 to 5.3 million
Become the richest in Asia per capita

Going forward, we want

a Liveable City
an Innovative City
a City in a Garden

My suggestions are

Welcome a New Architecture
Demand a Different Construction
Invest in Skyland

The next million homes is the **next growth driver**

Vision

Deliver land in the sky not apartments in the land

Reserve, conserve precious ground land to meet the many functions that a liveable, innovative, governance and a City in a Garden global metropolis must engage.

Most of all adopt a strategy that will provide space and opportunities in a design for our citizens to live, work, play and commute in a 4-in-1 urban design amalgam.

Singapore is uniquely placed, to demonstrate that compact cities of 5, 6, 7 million population can best house their citizens without apartments, even without land, by

Skyland master-plan, architecture and construction.

Going forward it is imperative that Singapore forever free herself from the stigma of land scarcity.

Skyland is our future, the choice is yours

The 100 MRT stations will grow to 180 when we complete 360 km of MRT system. When we successfully attract citizens now residing in 23, going to 25 new towns (occupying 20,000 hectares of land) into 'land in the sky' , the City of Singapaore will transform into a liveable, entrepreneur, sustainable and affordable Metropolis.

Simultaneously, landed properties and condominiums are encouraged into clusters of low-rise typology. Nature reserves and farms may also flourish in parkland environment.

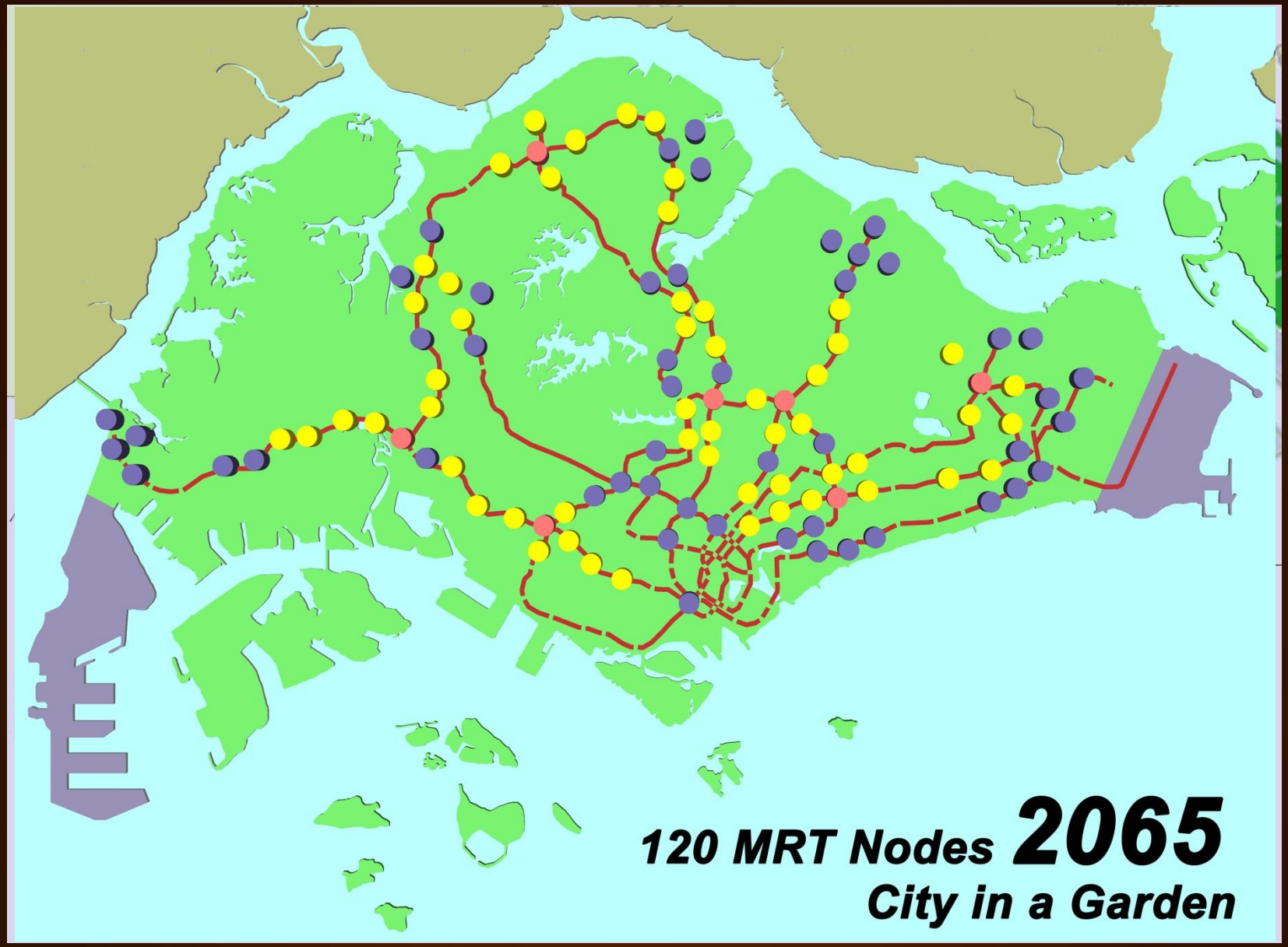
Singapore ultimately becomes a model city of urbanization and globalization that conserve land, nature and the Earth.

In 1965 our island was 585 km^2
By 2012 we enlarged to 710 km^2 by reclamation.
By 2065 we could have 780 km^2 ground land
100 km^2 cave land
and limitless Skyland

So, our future is OK!

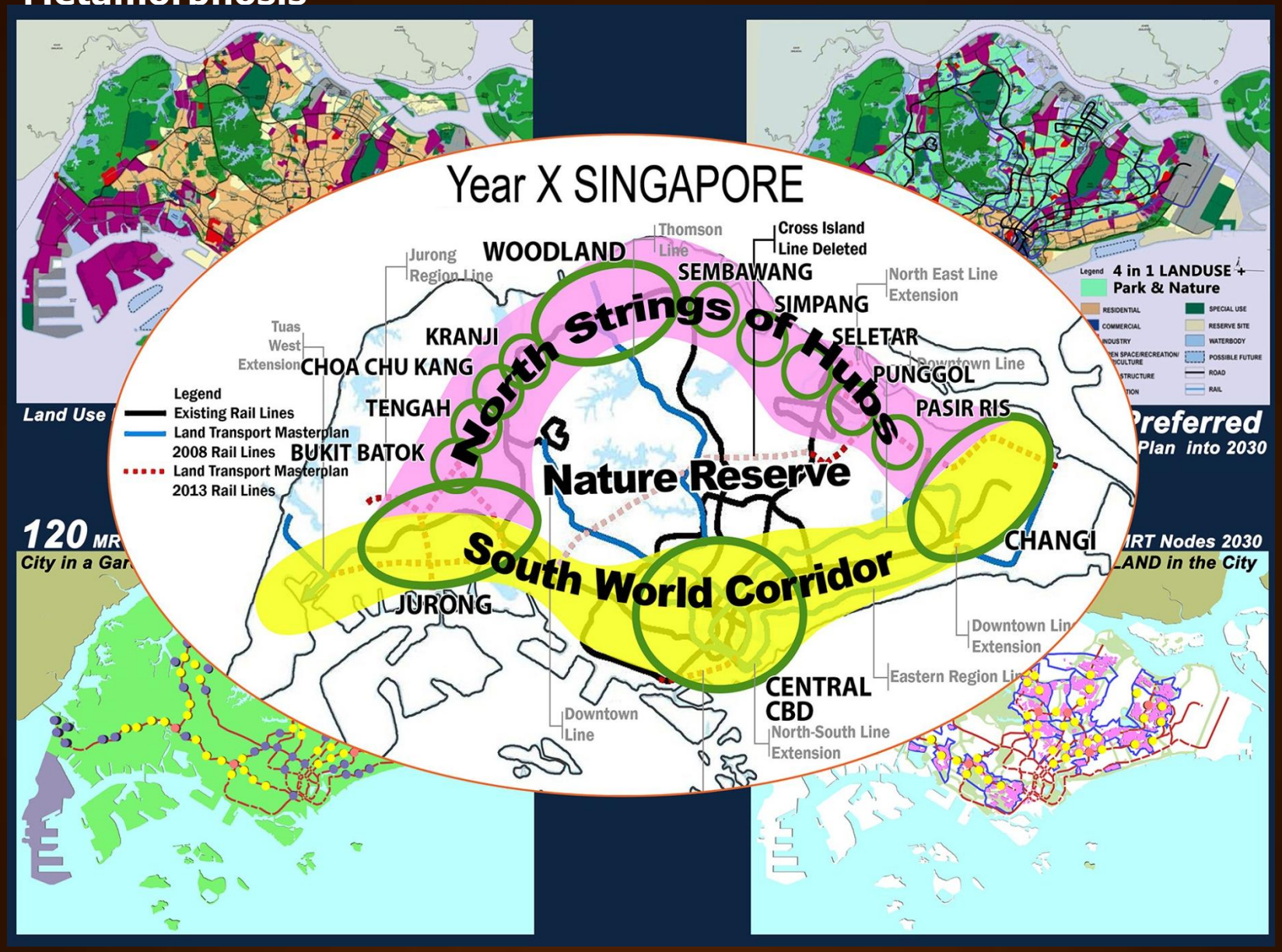
We Need to Evolve

Metamorphosis



Metamorphosis

We Need to Evolve



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ARCHURBAN
SINGAPORE

THE NEXT MILLION HOMES

Contents

- *LAND IN THE SKY*
- *A NEW ARCHITECTURE*
- *DIFFERENT CONSTRUCTION*
- *INVEST IN SKYLAND*

LAND IN THE SKY

Singapore's struggle for land necessitated:

- *Acquisition*
- *Reclamation*
- *Burrowing*
- *Increase Plot Ratio*
- *Demolition*
- ***Skyland***

How Far Can Singapore Go - No Land
- No Water
- No Labour
- No Babies

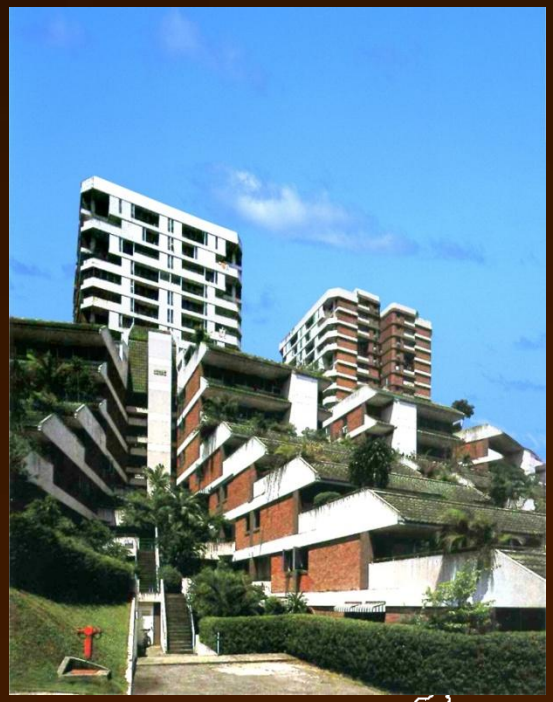
Time to build 'Land in the Sky'

Land in the Sky



Pearlbank

1st Super High-rise in Asia



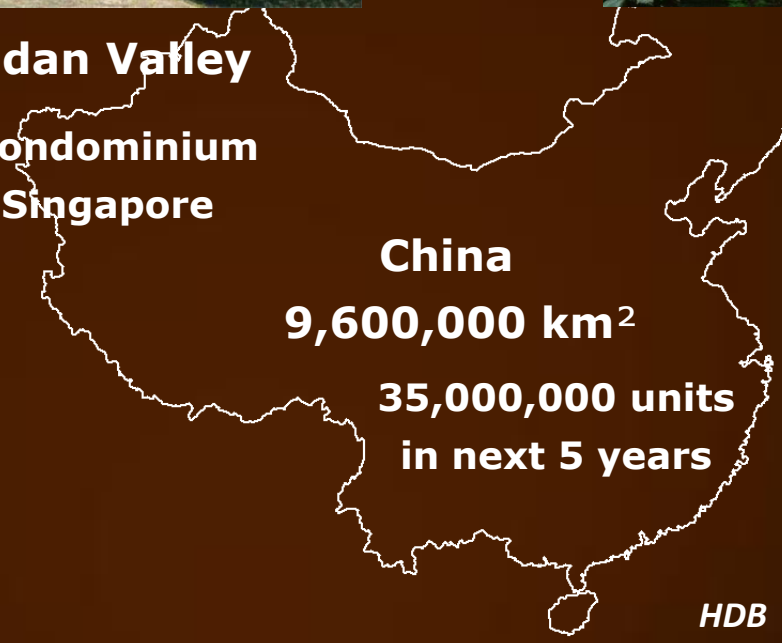
Pandan Valley

1st Condominium in Singapore



Skyland

For the Future

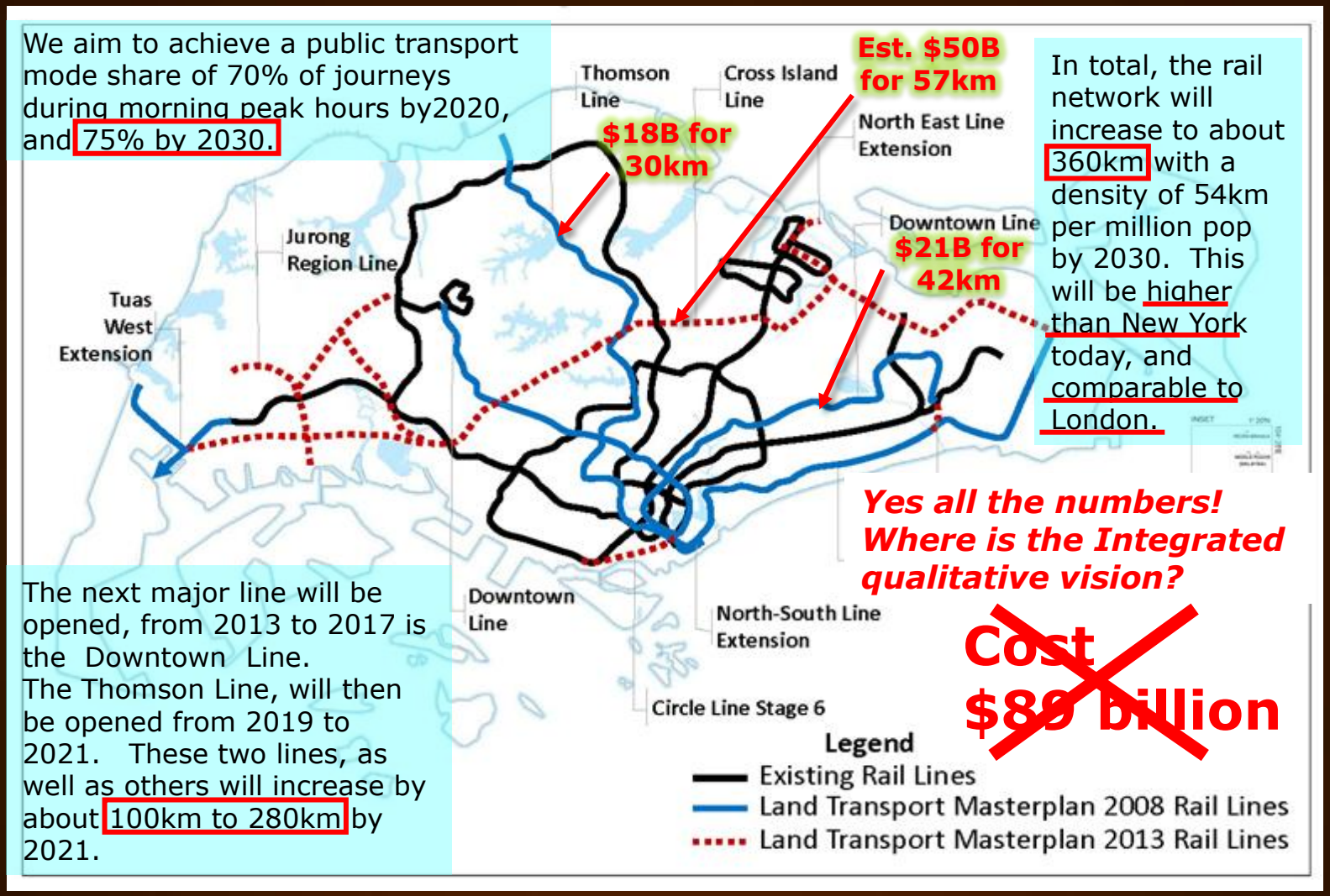


China

9,600,000 km²

35,000,000 units in next 5 years

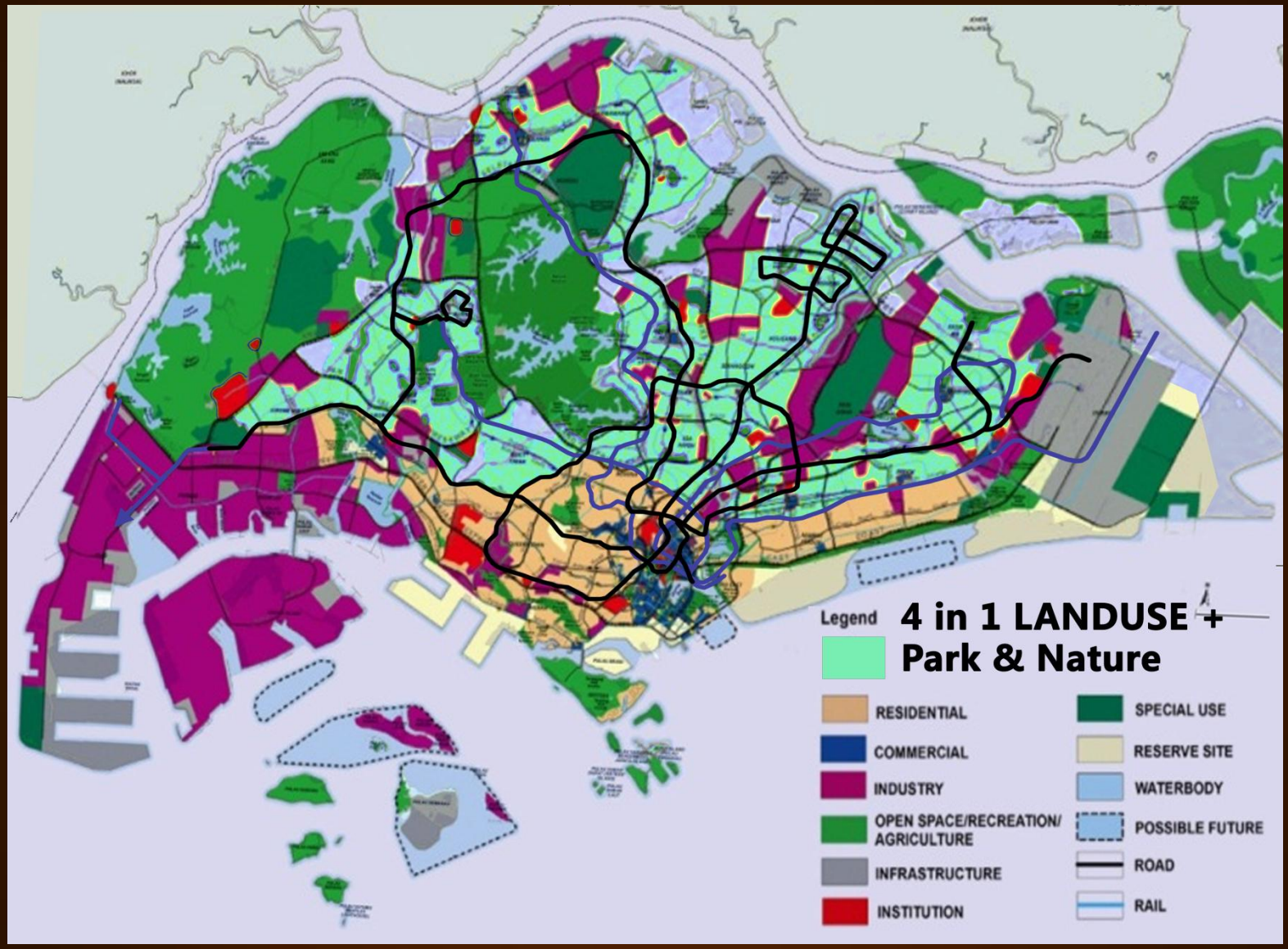
Build above ground amalgamate 4-in-1 to Save $Billions to Save Land



Rail network expansion in LTMP 2013

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Preferred
Land Use Plan into 2030



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NEW ARCHITECTURE

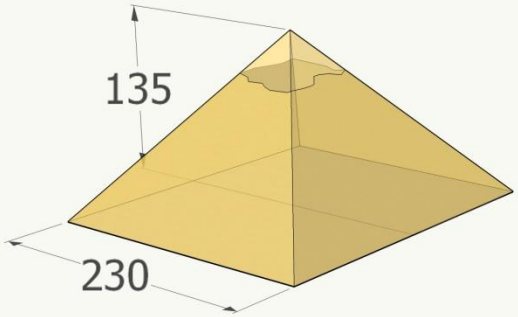
Today's architecture is land based
– NOT GOOD ENOUGH!

New Architecture that

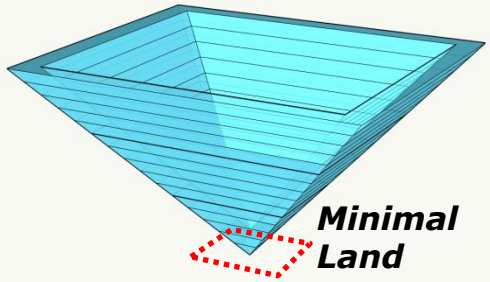
1. **Live, Work, Play, Commute**
2. **Rejuvenates**
3. **Citizens can own**
4. **Connects people, design, city**

New Architecture

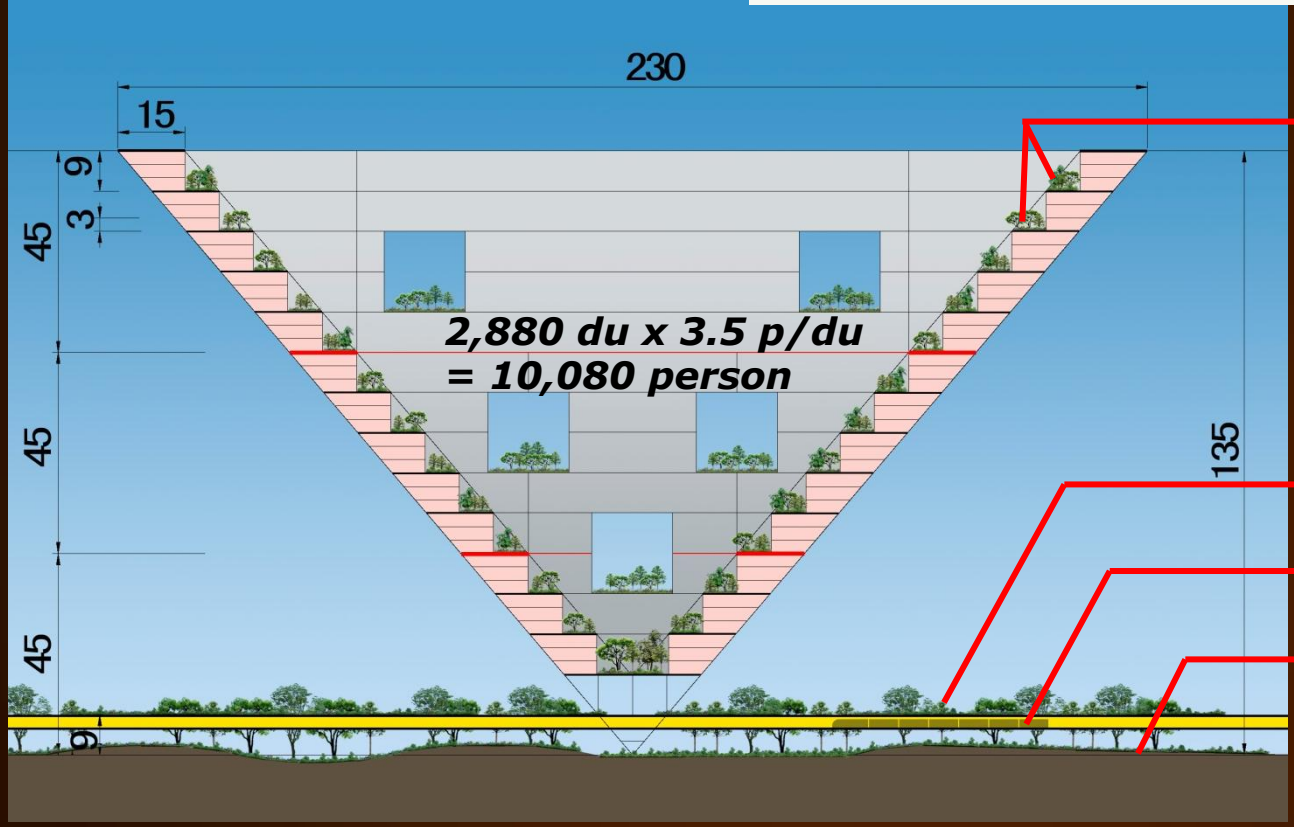




30 Years
60,000,000ton



2880x100m²x1.0ton
= 288,000ton-0.5%



Farm Decks

Environment Deck

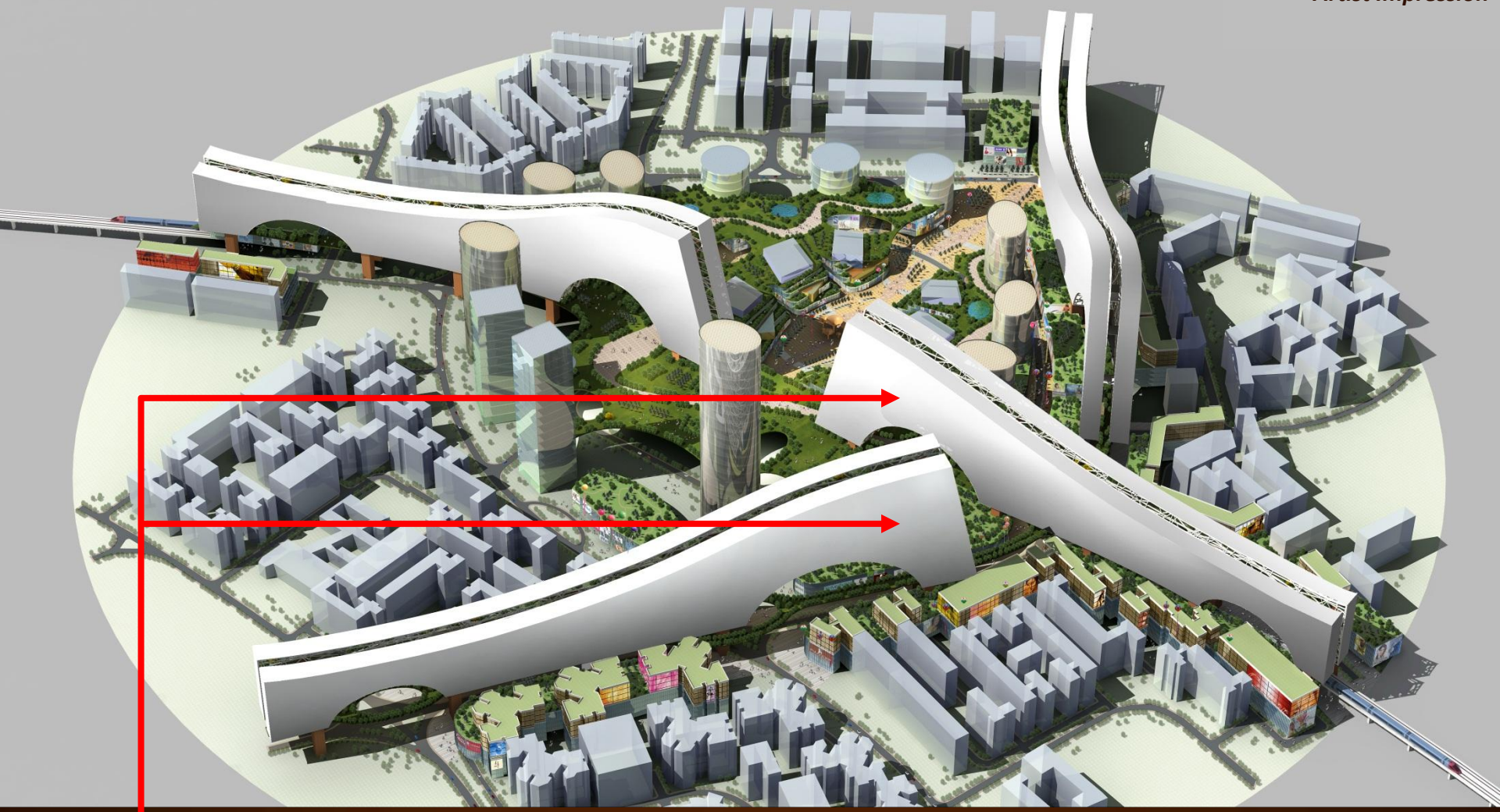
MRT Line

Nature`s Landscape

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A Skyland node - 500m radius

Artist Impression

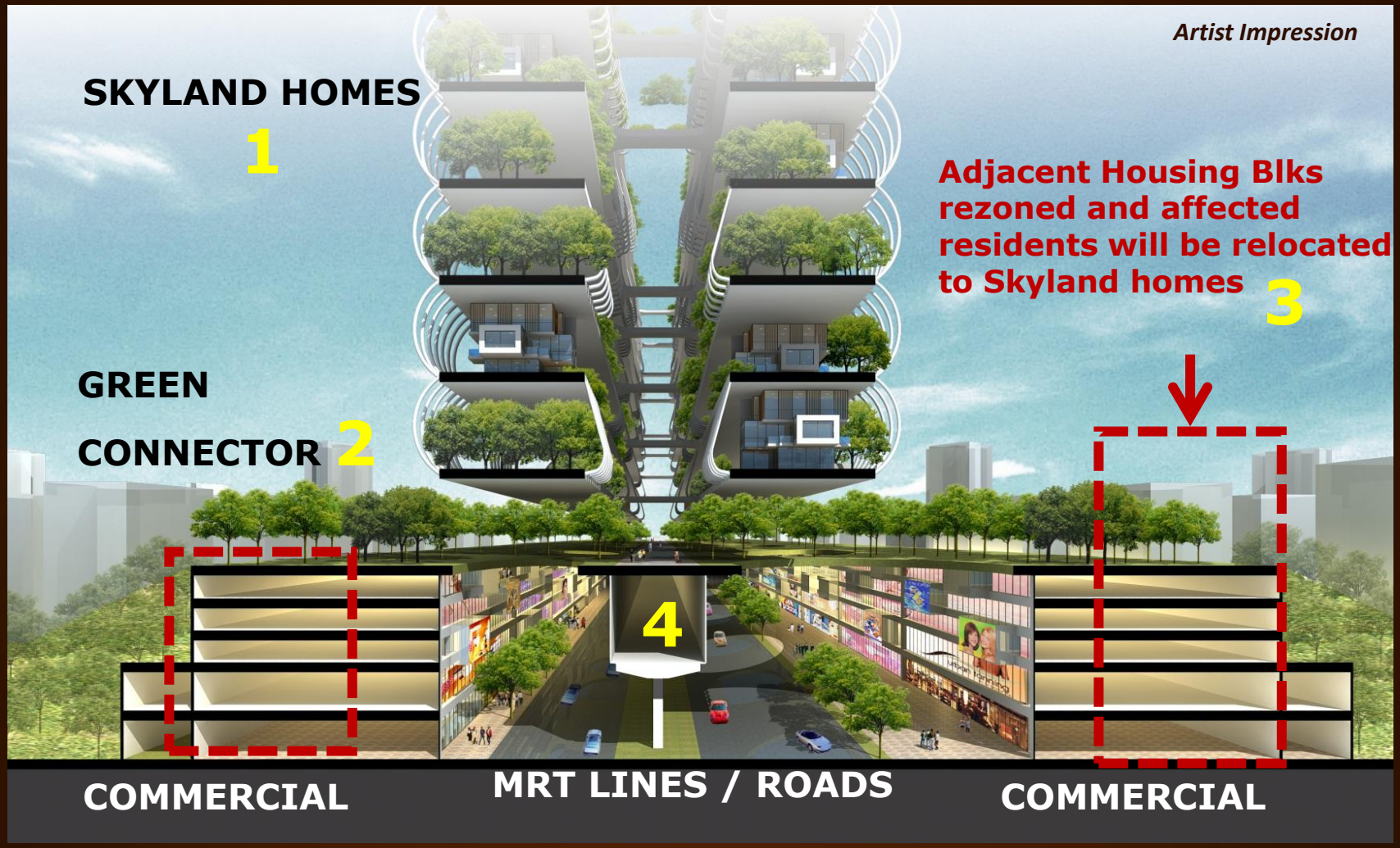


Aerial View (Woodlands Town Center)

The Frame is Land

- *Public, City, Infrastructure*
- *Land in the Sky*
- *High Maintenance Required*

Skyland over MRT lines and roads.
Adjacent HDB blocks be re-zoned commercial use.



4-in-1 Golden Section

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Facade design subject to architecture panel



SKYLAND NODES FAÇADE
SCHEME: THE RAINBOW

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DIFFERENT CONSTRUCTION

Deliver "Land"

for Citizens to Own and Love

Light, Dry, Flexi, (DIY), Non invasive
Affordable – Time saving

No wastage, Best fit, no enbloc, high occupancy
Multi generation, babies, family community

The Personal, the Private, the Identity,
the My Place is now possible

Shortage of Labour, the Minister is right



THE STRAITS TIMES FRIDAY, JANUARY 18, 2013 HOME | B9

UNITISED BUILDING SYSTEM: Room-size units complete with internal finishes and fittings are made in factories and transported to the sites to be assembled like Lego bricks. Dust and noise pollution is reduced in residential areas.

ROBOTIC FABRICATION: This involves using robots to do labour-intensive work such as tiling, which could lead to a higher level of consistency and quality and reduce manual labour. The idea is still in development.

CROSS-LAMINATED TIMBER: Made by binding layers of timber at right angles with structural adhesives, it can support heavier loads compared with run-of-the-mill timber and be used for floors and beams. It is being evaluated for use here. PHOTOS: BUILDING AND CONSTRUCTION AUTHORITY

Khaw pushes for three constructive ideas

These may boost productivity and ease reliance on foreign labour, he says

By DARYL CHIN

LEGO-STYLE building techniques, robot technology and new materials could help to revolutionise Singapore's construction industry.

National Development Minister Khaw Boon Wan urged developers and construction firms to consider the ideas in his blog post yesterday, saying they could boost productivity and reduce reliance on foreign construction workers.

The unitised building system sees room-sized units complete with internal finishes and fittings made in factories, then transported to a site to be fitted together like Lego bricks.

Mr Khaw noted that besides being able to cut construction time by up to half, it would also ensure works are done away from residential areas, meaning less construction noise and dust pollution.

Robotic fabrication is still in development. Think-tank Singapore-ETH Centre is looking at how labour-intensive work such as tiling can be done by robots.

The last idea is cross-laminated timber, which is created by binding layers of timber at right angles with structural adhesives.

Compared with run-of-the-mill timber, the laminated kind can support heavier loads and be used for floors and beams. It is still being evaluated for ... in Singapore.

A company in Melbourne used such wood to create a 10-storey residential building in ... months – 30 per cent quicker than it would normally take.

Of the three ideas, ... the unitised building system is currently available to developers in Singapore, said the Building and Construction Authority.

Local contractor ... Hong has an exclusive arrangement to ... it.

Its spokesman Ken... Loh said it has ... advantages, "although the main obstacle would be the mindset change for designers to learn a new way of doing things".

The carrot for them to do so is a shorter waiting time for approvals from the authorities, he added.

Contractors will face tighter labour cuts, even as the industry is poised to enjoy yet another year of robust growth.

Projected construction demand is between $26 billion and $32 billion this year, and is expected to be up to $28 billion annually in the next two years.

"The future is already here, in several other parts of the world. Let's make sure Singapore is not left out," said Mr Khaw.

daryl@sph.com.sg

STAY IN THE GAME

The future is already here, in several other parts of the world. Let's make sure Singapore is not left out.

– National Development Minister Khaw Boon Wan

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FREE GIFTS
Long Hug Pillow x 1
Bonus Cash Card x 1
TEMPUR Pillow at $188
$600 for delivery by Sun 27 Jan 2013
$300 for delivery by Thu 28 Feb 2013
3-DAY SPECIAL

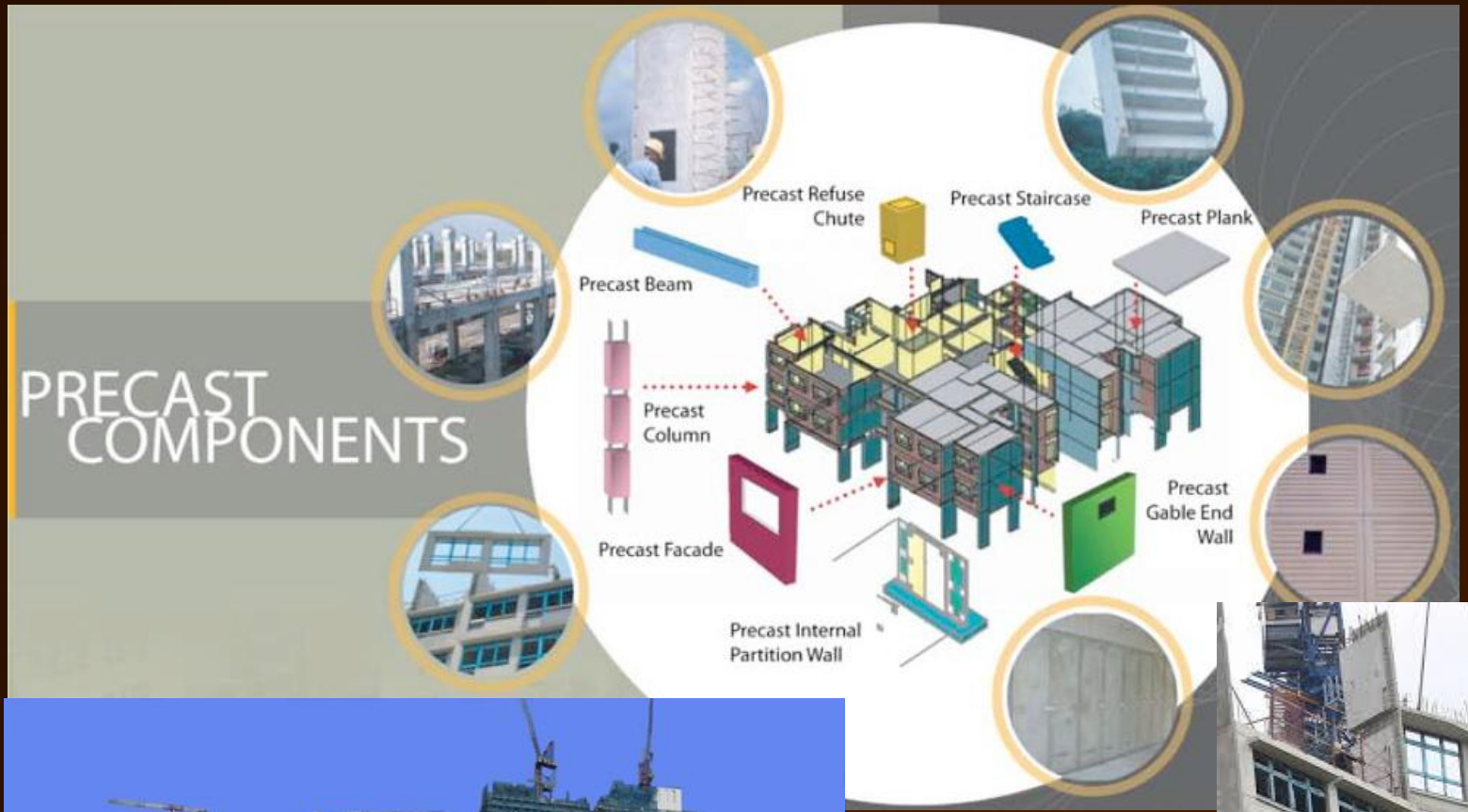
For decades, we failed to change. Construction has to become very Relevant.

STAY IN THE GAME

The future is already here, in several other parts of the world. Let's make sure Singapore is not left out.

– National Development Minister Khaw Boon Wan

Precast Construction in Singapore







Becoming Standard Practice

Much More Needed

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Different Construction







In China
Interiors are Completed
by Owners, Individually

A noiseless, non-invasive, precast technology to construct the skyland



A noiseless, non-invasive, precast technology to construct the skyland



SKYLAND 3-Storey homes

Prefab, D-I-Y dry, lightweight labour saving system



INVEST IN SKYLAND

Over the last 50 years, land resource played a pivotal role in Singapore's growth.
Going forward, **Skyland be the new driver**.

The **4-in-1 strategy** amalgamating Live, Work, Play, Commuting will build land in the air and assign land on the ground for other uses.

The government should invest in Skyland
to be free from land scarcity stigma
and to propel future growth.

represented. No, Lee's obsession with Singapore's vulnerability was not as fickle as the stock market or tied to quarterly growth rates. The origins of this book predate the Lehman Brothers collapse and the Singapore government's realisation that the country could not escape the contagion.

In discussions over the book with *The Straits Times* editor Han Fook Kwang in late August 2008, Lee said he wanted to "concentrate Singaporean minds on what we must aim for to achieve the quality of government and high standards of governance that have been the foundation of Singapore's growth and transformation". He said matter-of-factly that he did not know how many years he had left. When Han suggested a co

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For Lee, or

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Singapore's dependence on Malaysia for its water was, for decades, the most tang

of recycled "N

satisfaction in

Harry Seah, who was involved in the NEWater project, expressed the import of that breakthrough this way: "We knew with this, we can be free."

That freedom was underwritten by massive investments in defence and security, as Lee would point out to us. Still, symptoms of Singapore's vulnerability periodically surfaced. Its need for sand for construction

Extract from:

LEE KUAN YEW
HARD TRUTHS
TO KEEP SINGAPORE GOING

Singapore's dependence on Malaysia for its water was, for decades, the most tangible symbol of the island's vulnerability. The development of recycled "NEWater" was a turning point that Lee would mention with satisfaction in our meetings. In a media interview, government engineer Harry Seah, who was involved in the NEWater project, expressed the import of that breakthrough this way: "We knew with this, we can be free."

"We knew with this, we can be free."

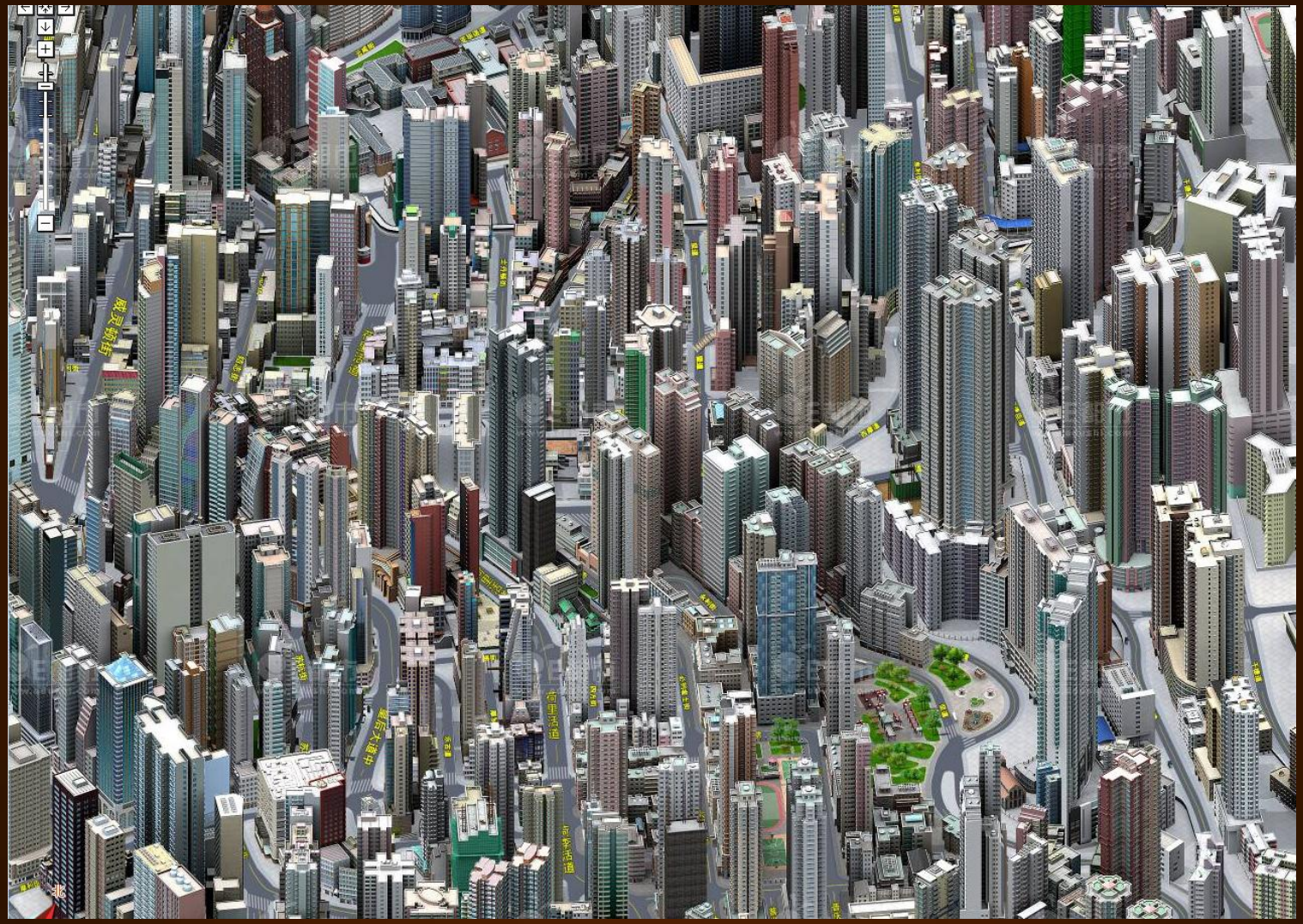
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Hundreds of these for sale in Australia

The Australian model is NOT for us

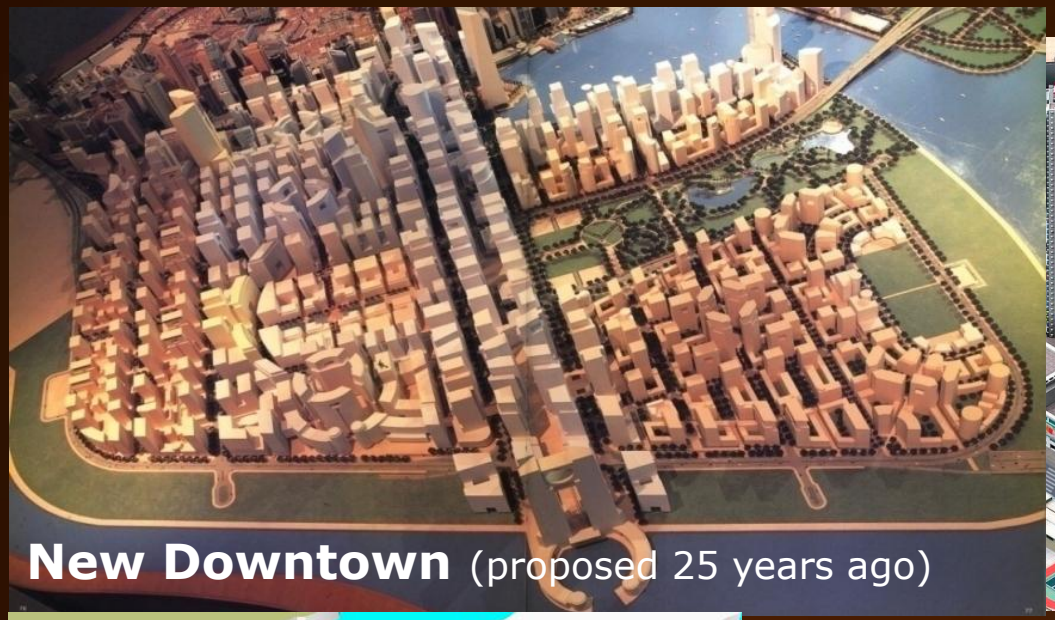


Overpriced apartments in congested Asian cities
The Hong Kong model is NOT for us

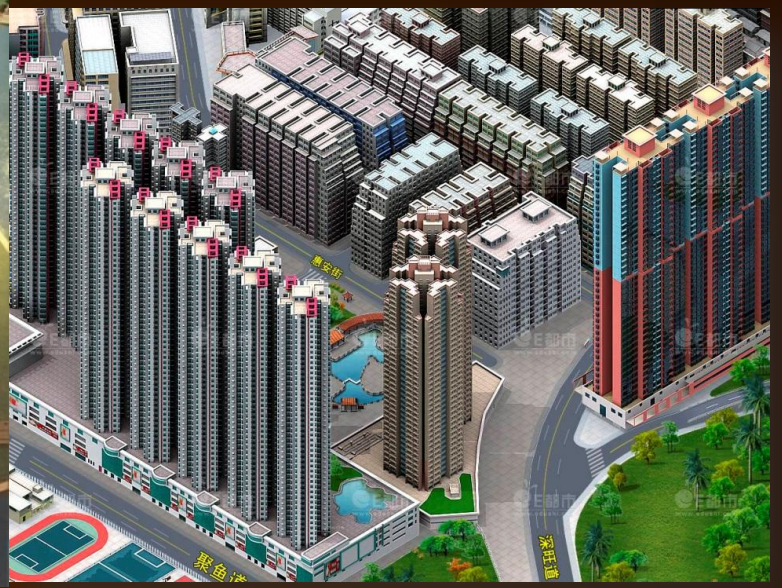


Below is the current Singapore model

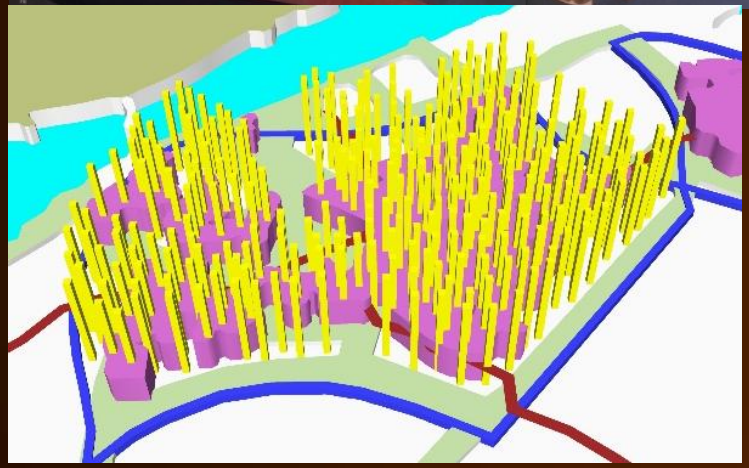
It is also NOT for us



New Downtown (proposed 25 years ago)



Hong Kong



Woodland

No More of the same messy mass!

In 1965 we received	**an island**	**585 km²**
By 2012 we created	• **HDB**	**917k dwellings**
	• **Pte apts**	**218k dwellings**
	• **Landed**	**70k dwellings**
By 2065		
City in the Garden	• **Ground land**	**780 km²**
	• **Cave land**	**50 km²**
	• **Sky land**	**240 km²**
		1070 km²

Skyland can solve our land scarcity problem.

THE NEXT MILLION HOMES



Invest in Skyland is investing in:

- ***Limitless Land Source***
- ***Next 1,000,000 Secure Homes***
- ***The City in the Park***
- ***Next Growth Driver***

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