Rail + Property + Pedestrian Model (RPP): case study of Hong Kong and implication for Thailand

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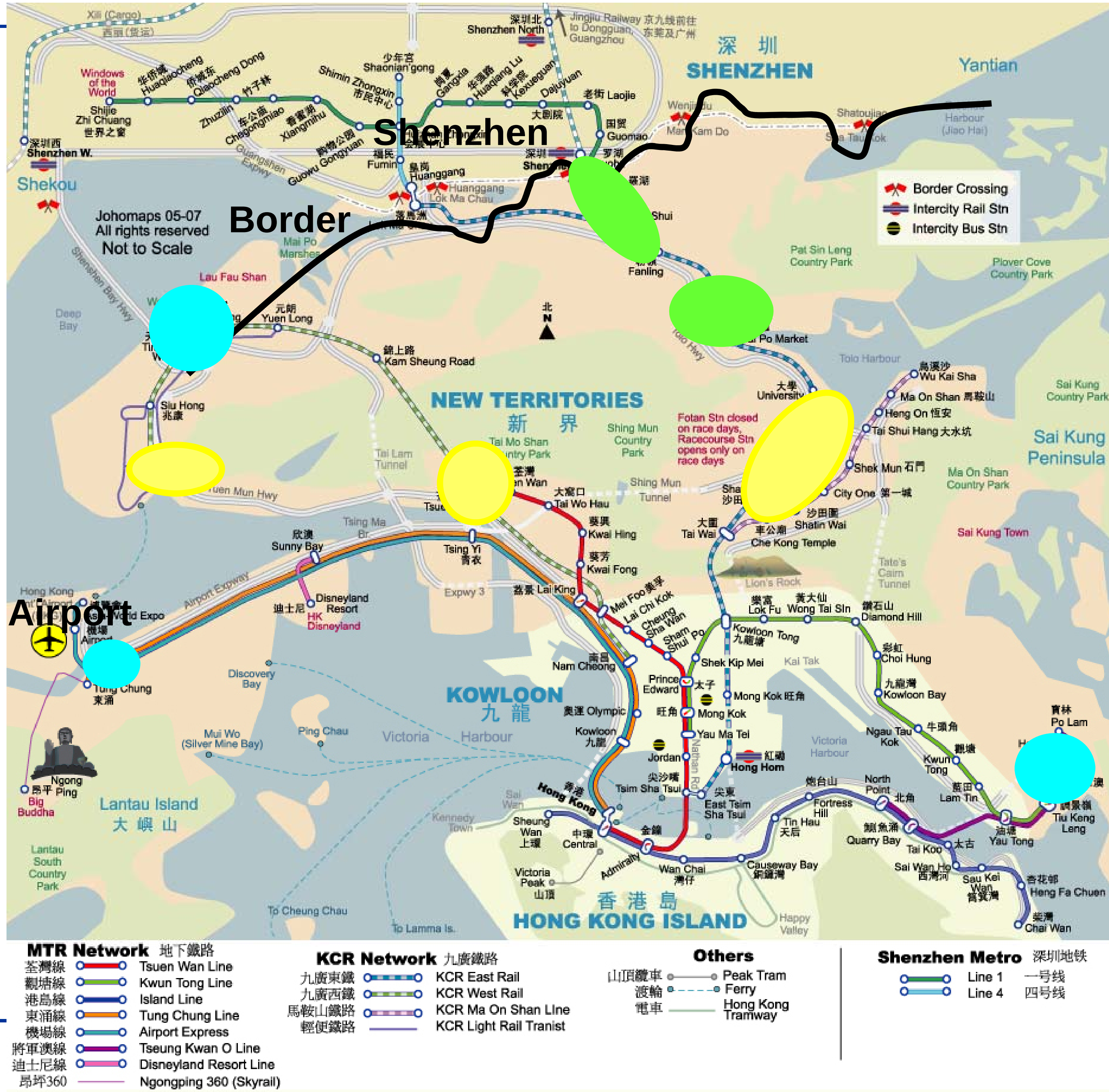
1970
1980
1990 - 2000
Shenzhen
Border
Airport
Downtown


Shenzhen
Border
Airport
SHENZHEN
深 圳
NEW TERRITORIES
新 界
KOWLOON
九 龍
HONG KONG ISLAND
香 港 島
Lantau Island
大 嶼 山
Sai Kung Peninsula
Johomaps 05-07
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Not to Scale
Border Crossing
Intercity Rail Stn
Intercity Bus Stn
Fotan Stn closed on race days, Racecourse Stn opens only on race days
MTR Network 地下鐵路
荃灣線 Tsuen Wan Line
觀塘線 Kwun Tong Line
港島線 Island Line
東涌線 Tung Chung Line
機場線 Airport Express
將軍澳線 Tseung Kwan O Line
迪士尼線 Disneyland Resort Line
昂坪360 Ngongping 360 (Skyrail)
KCR Network 九廣鐵路
九廣東鐵 KCR East Rail
九廣西鐵 KCR West Rail
馬鞍山鐵路 KCR Ma On Shan Line
輕便鐵路 KCR Light Rail Tranist
Others
山頂纜車 Peak Tram
渡輪 Ferry
電車 Hong Kong Tramway
Shenzhen Metro 深圳地铁
Line 1 一号线
Line 4 四号线

Background

- Population: ~ 7 million
- Total area：1104 km^2, about 20% land developed
- Car ownership: 52 per 1000 people, about 10% of the US figure, despite a similar level of GDP, about 5% of the Bangkok figure
- Urban density (average): 6,480 persons/km^2 (max 53,110)
- In comparison: LA - 3,144; Tokyo – 5,847 BKK – 3,640
- 11 million daily PTS trips, ~**90%** of all trips (BKK around 30%)

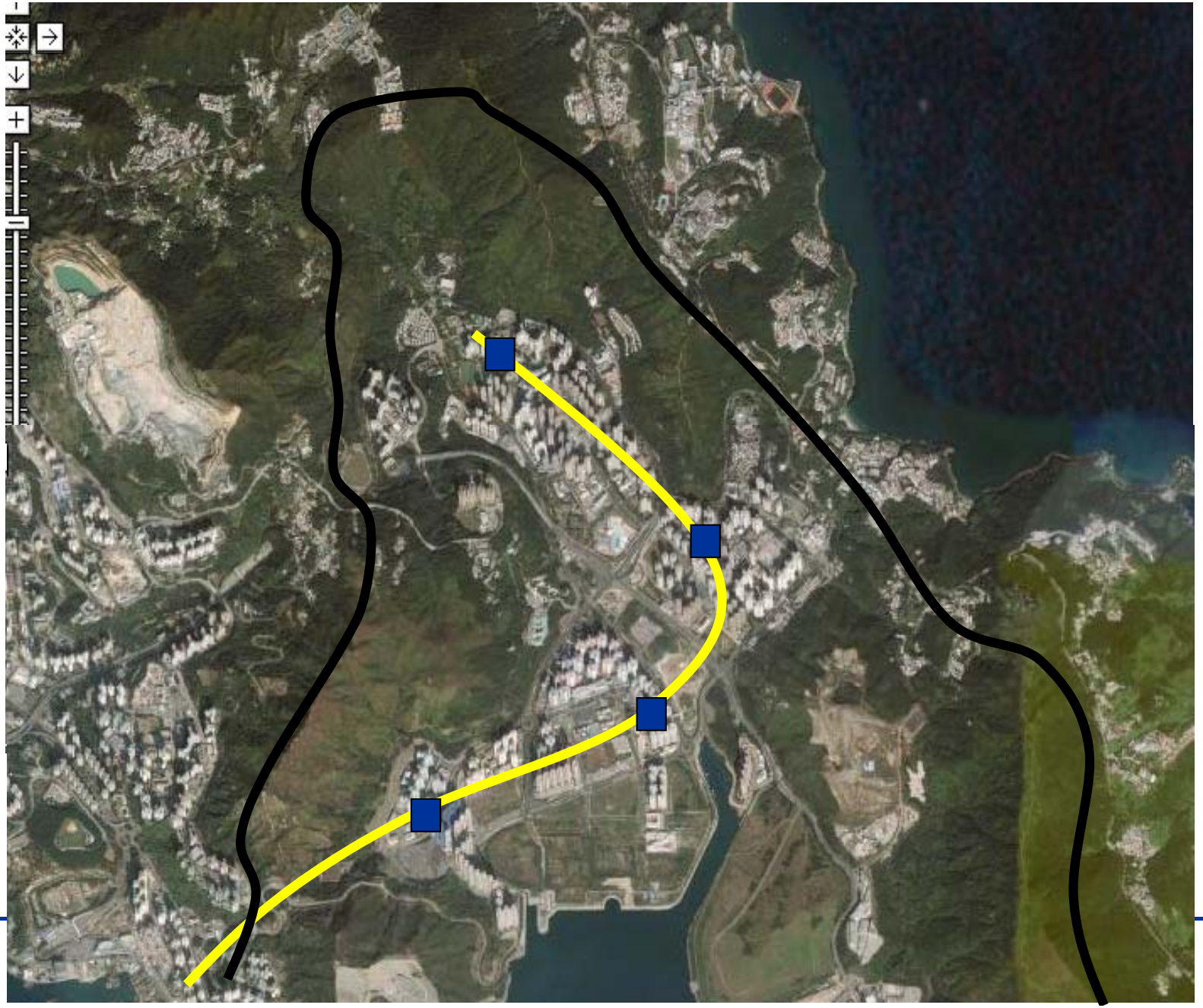
Public Transport in Hong Kong

- Public Transport in HK involves a multi-modal network
  - Railways (MTR, West Rail, East Rail, LRT)
  - Franchised Buses (over 600 routes)
  - Red and green Minibuses (hundreds of routes)
  - Taxi, ferries, tram, peak Tram
- All modes are financially sustainable without direct government subsidy, so far.

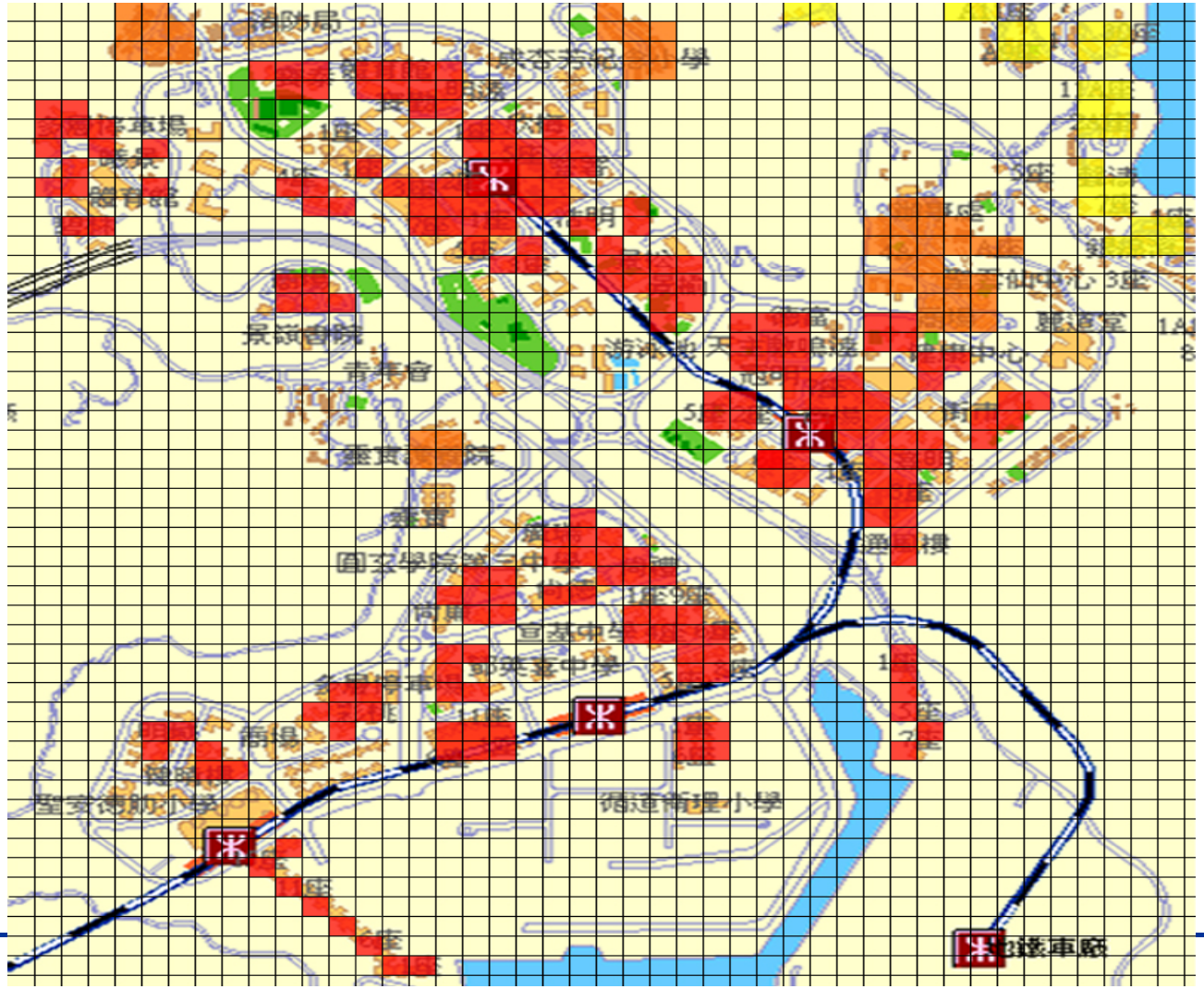
Policy on Land Development

- Scarcity of land and expanding population form a catalyst for high density development sustaining over the years
- Developments of the existing central business districts around the Victoria Harbor generate tremendous converging traffic demand
- High-density residential estates, or new towns, built around railway stations form large passenger bases to support mass transit railways and their financial sustainability

Example: TKO new town



Example: TKO new town



The total development area of TKO is about 10.05 km², with a population of around 350,000. The average density is 35,000 per km²

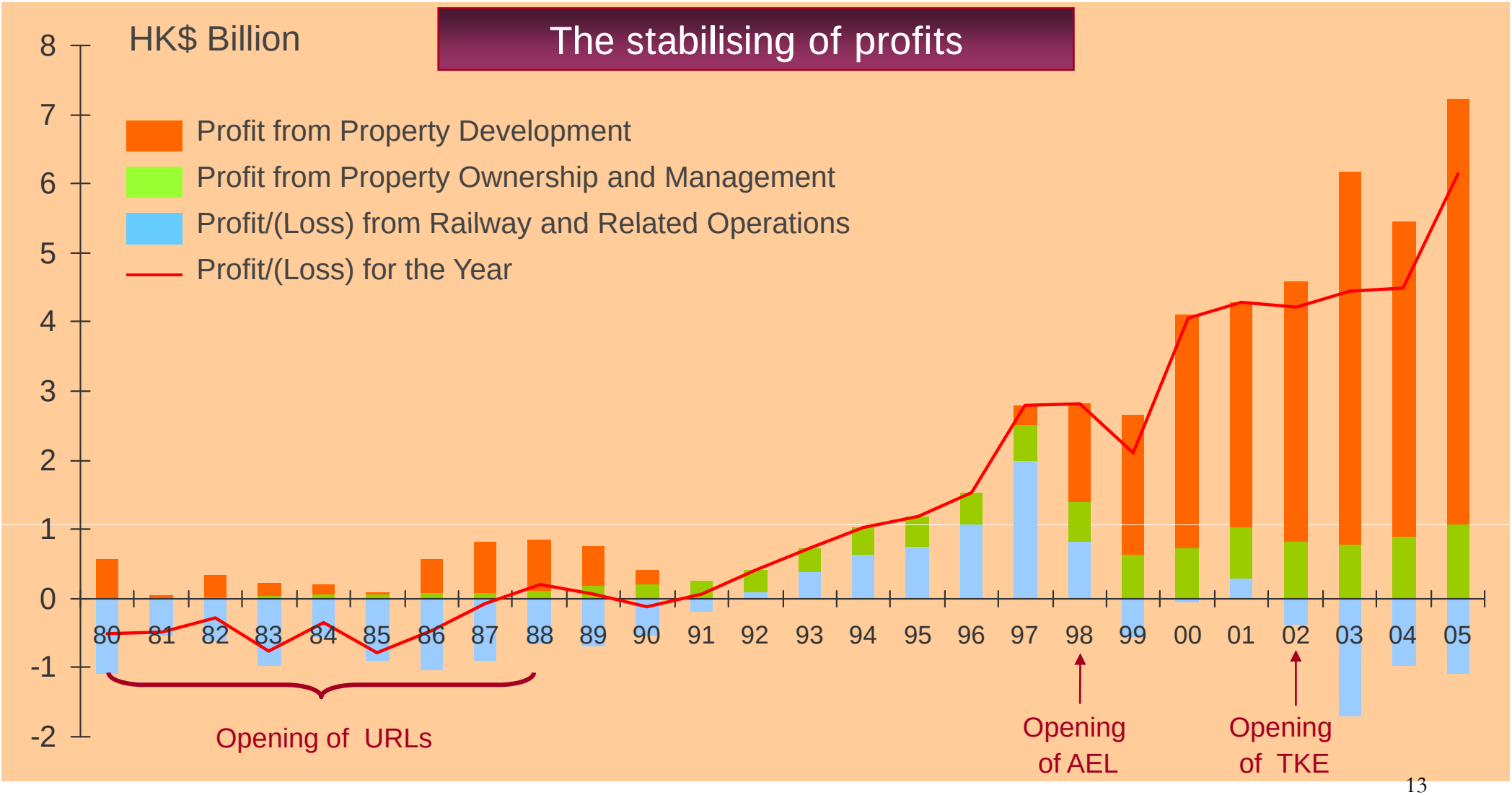
Policy of Transit Service Coordination and Protection (1980's)

- First White paper on Internal transport policy in 1979
  - Mass Transit Railway (MTR) constructed; Kowloon Canton Railway (KCR) expanded to support the development of new towns
  - Both railways operate in prudent commercial principles.
- The transport policy gave priority to rail, thus prohibited direct competition from other modes
- This policy assured sufficient traffic demand for mass transit railways, hence the huge investment would be paid back within reasonable time
- This policy allowed the creation of a win-win situation. The government can thus rely on the private sector to provide for services according to the user-pay principle without subsidy

Policy of Service Rationalization and Consolidation (2000's)

- In 1999, the government outlined future transport strategies
  - (1) better integration of transport and land use, (2) better use of railway as the backbone, (3) better use of ITS, etc.
- One objective was to increase rail-based PT journeys from 33% to 40% ~ 50% in 2016. Plans for bus service consolidation were strongly objected.
- This policy were not welcome and resisted at every step of the way.
- In the end, once a public transport service is offered, it is extremely difficult to consolidate its service. This is an important lesson to be learned

The Significance of Property as a Means of Financing Railway Infrastructure



Government's Benefit from the "R+P" Model

Land Premium	HK$75.8B
IPO Proceeds	HK$10.5B
Cash Dividends	HK$ 2.3B
Market Cap (25/04/2007)	HK$107.6B
LESS: Initial Gov't Injection	- HK$32.2B
Total	= HK$164B

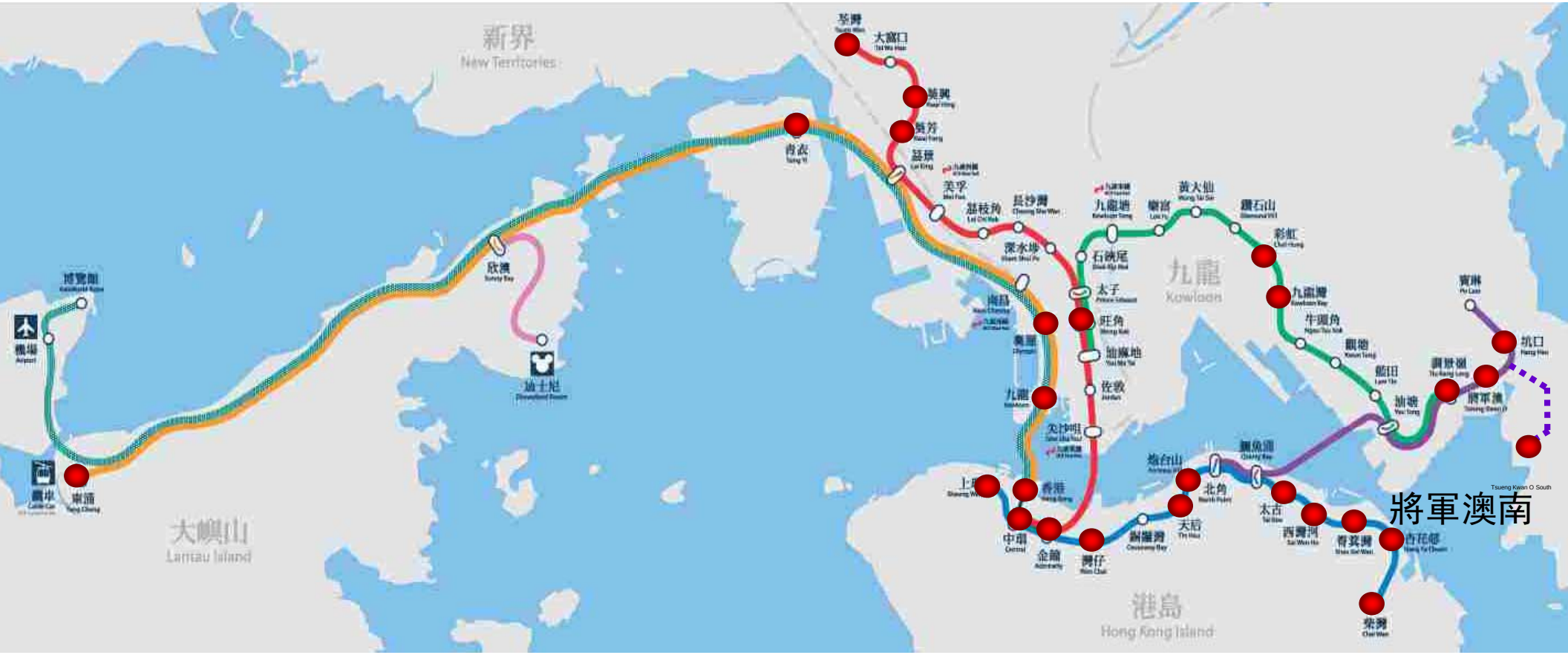
The Characteristics of MTRC's "R+P" model

- MTRC is financially self-sustained, requiring no capital investment, subsidies to operations and loan backing required from the government
- MTRC coordinates the planning, construction and management of both railway and property
- MTRC controls the development rights of all rail-related land until the completion of property construction

The Financing Mechanism of MTRC's "R+P" Model

- Government grant '***Land Development Right***' of sites comprehensively planned by MTR on new railways.
- MTR pays land premium to Government on '**Greenfield – No Railway**' basis.
- MTR builds railway and develops property in partnership with Property Developers.
- Property value goes up with railway.
- MTR benefits from the value enhancement which is used to build new railways.

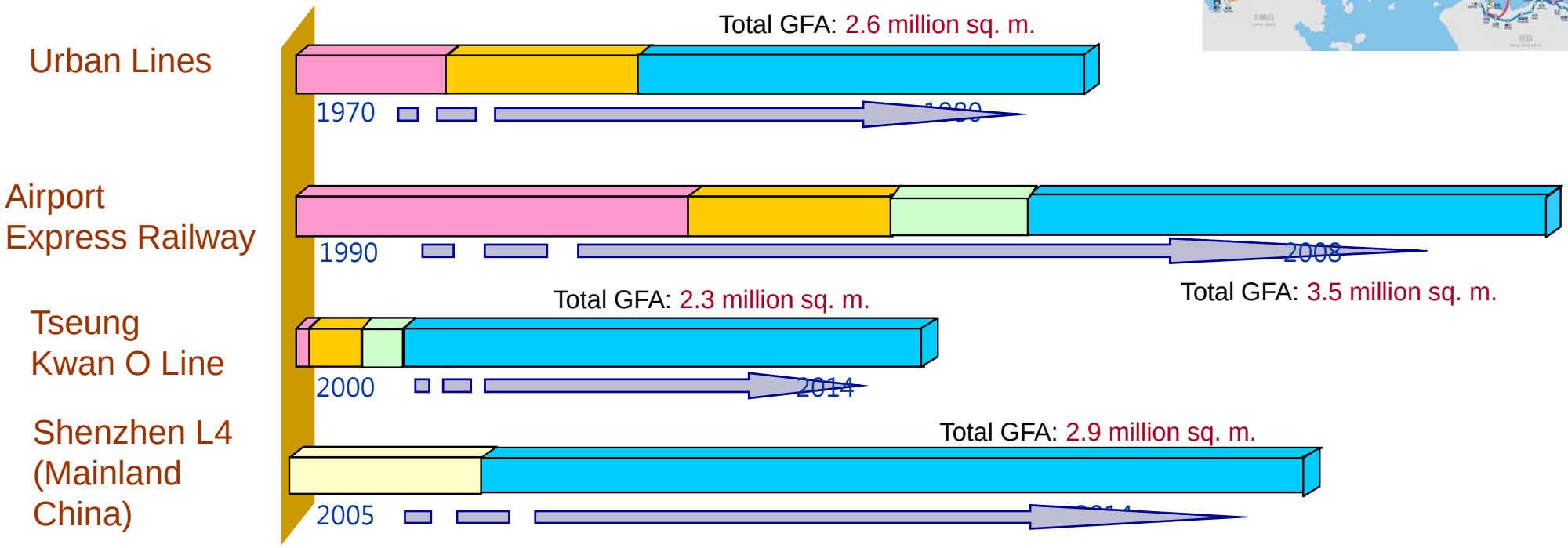
An Overview of "R+P" Developments



Route Length: 91km and 53 stations
Daily patronage: about 2.5 million

- MTRC's property developments at 26 stations along rail lines

An Overview of "R+P" Developments

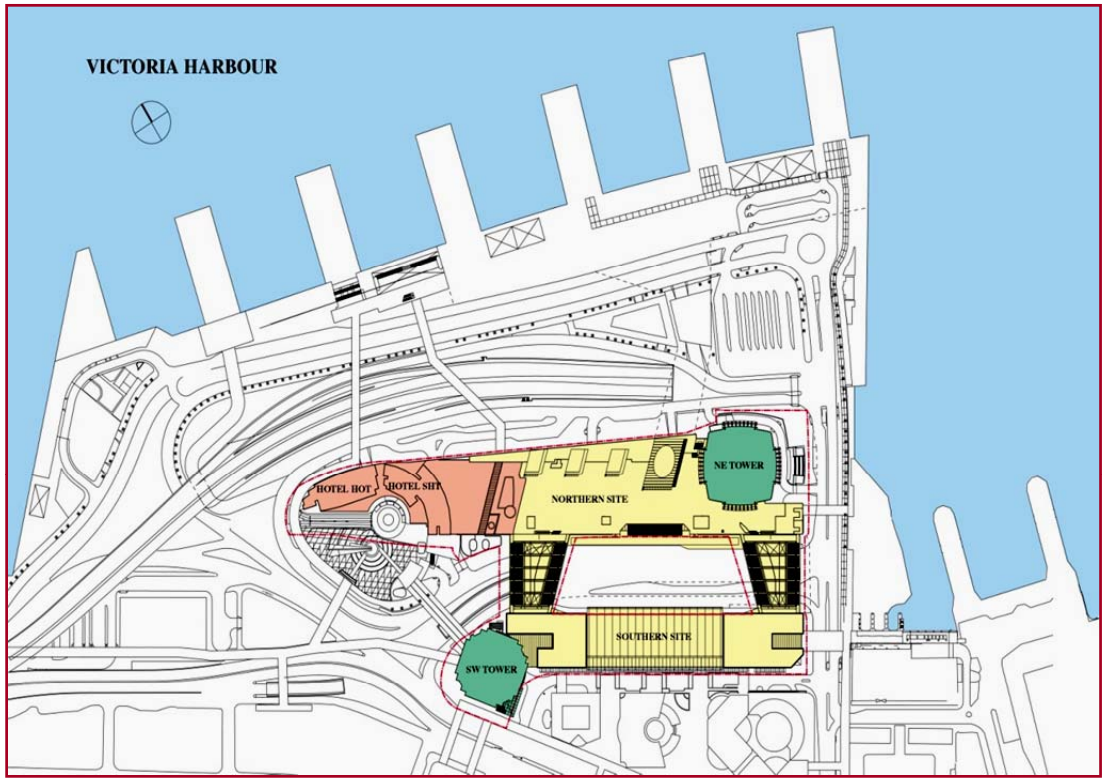


	Office (sm)	*Retail (sm)*	*Others (sm)*	*Residential (flats)*	*Total GFA*
Urban Lines	234,898	299,363	-	31,366	11.3 M sq m
Airport Railway	611,968	307,880	294,722	28,565	
TKO Line	5,000	100,814	58,130	30,414	
Shenzhen L4	← 290,000 (commercial use) →			26,000	

Typical "R+P" Project:
Airport Express – Hong Kong Station

5.7 ha site area
416,000 sq. m total floor area

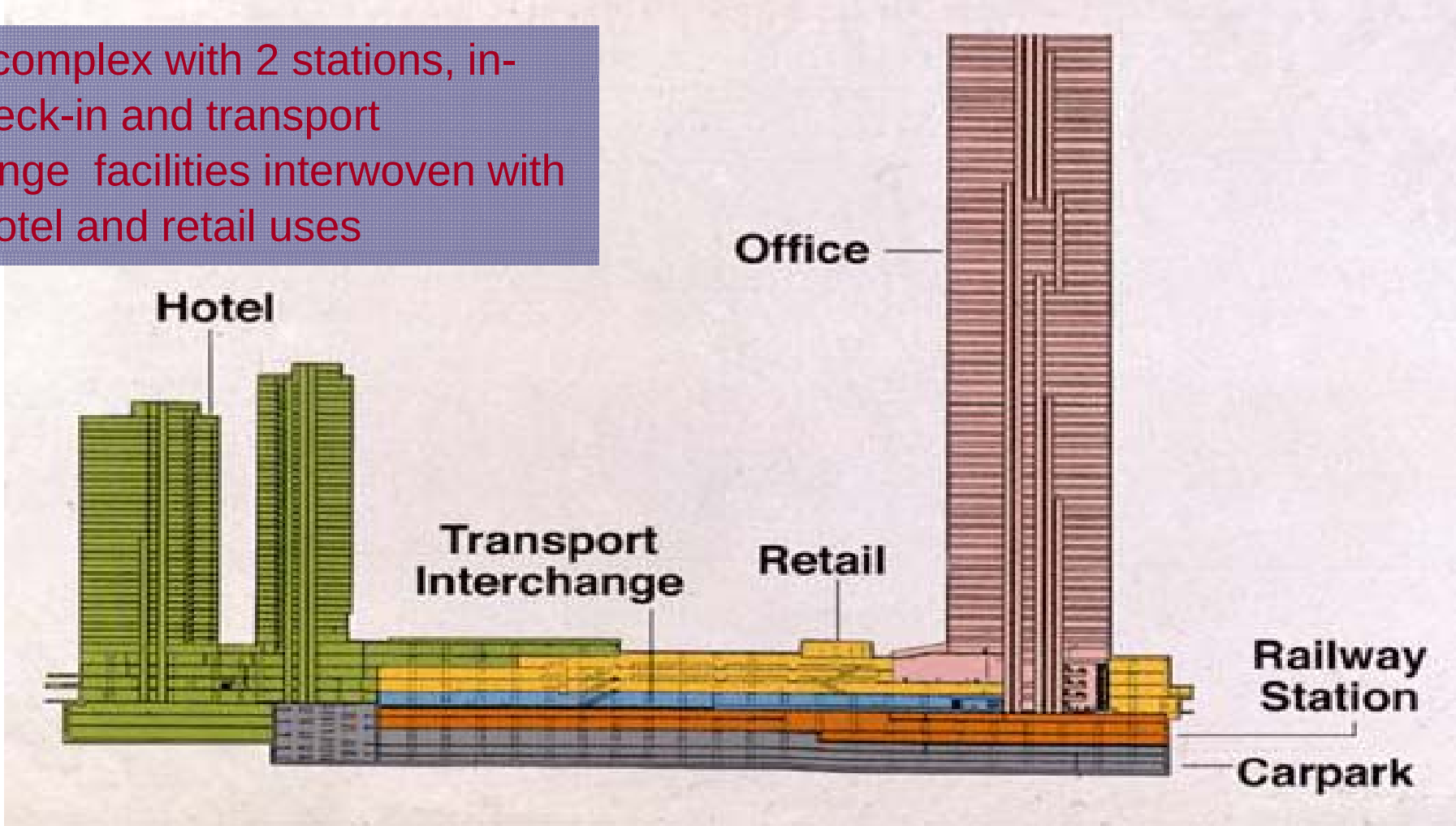
2 office towers of 254,000 sq. m
60,000 sq. m retail area
2 deluxe hotel and suites hotel complexes
Transport interchange
Extensive public and private open space



Successful extension of CBD with this new International Finance Centre

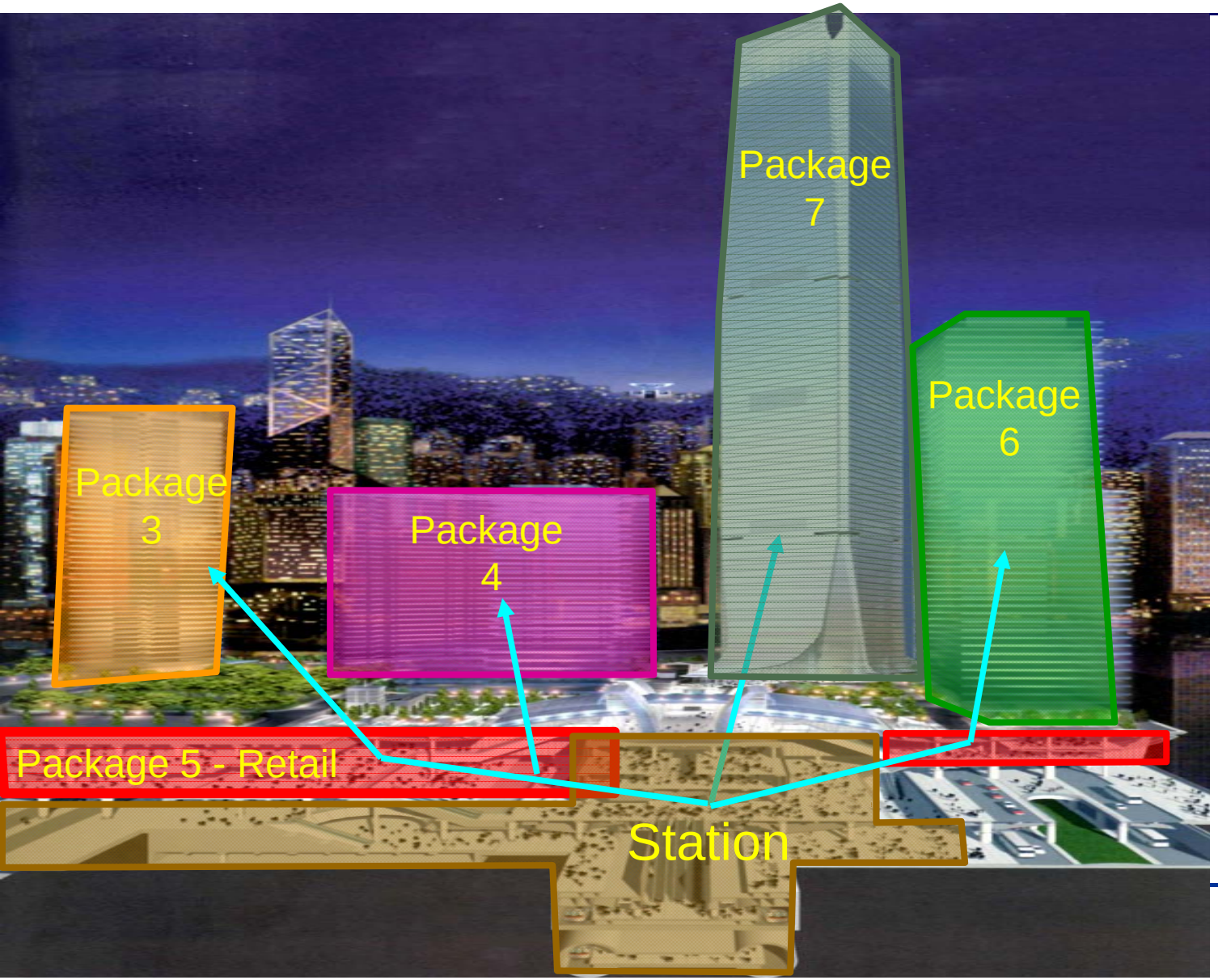
Hong Kong Station – Property and Rail are fully integrated

- A large complex with 2 stations, in-town check-in and transport interchange facilities interwoven with office, hotel and retail uses



Hong Kong Station

Sizable Comprehensive Development: Airport Express - Kowloon Station



Integration

- Horizontal
- Vertical
- Functional

13.5 ha Site Area

1.09 million sq.m Floor Area

16 residential towers and 2 mixed use towers (hotel / serviced apartment / residential)

A 102-storey Landmark Tower

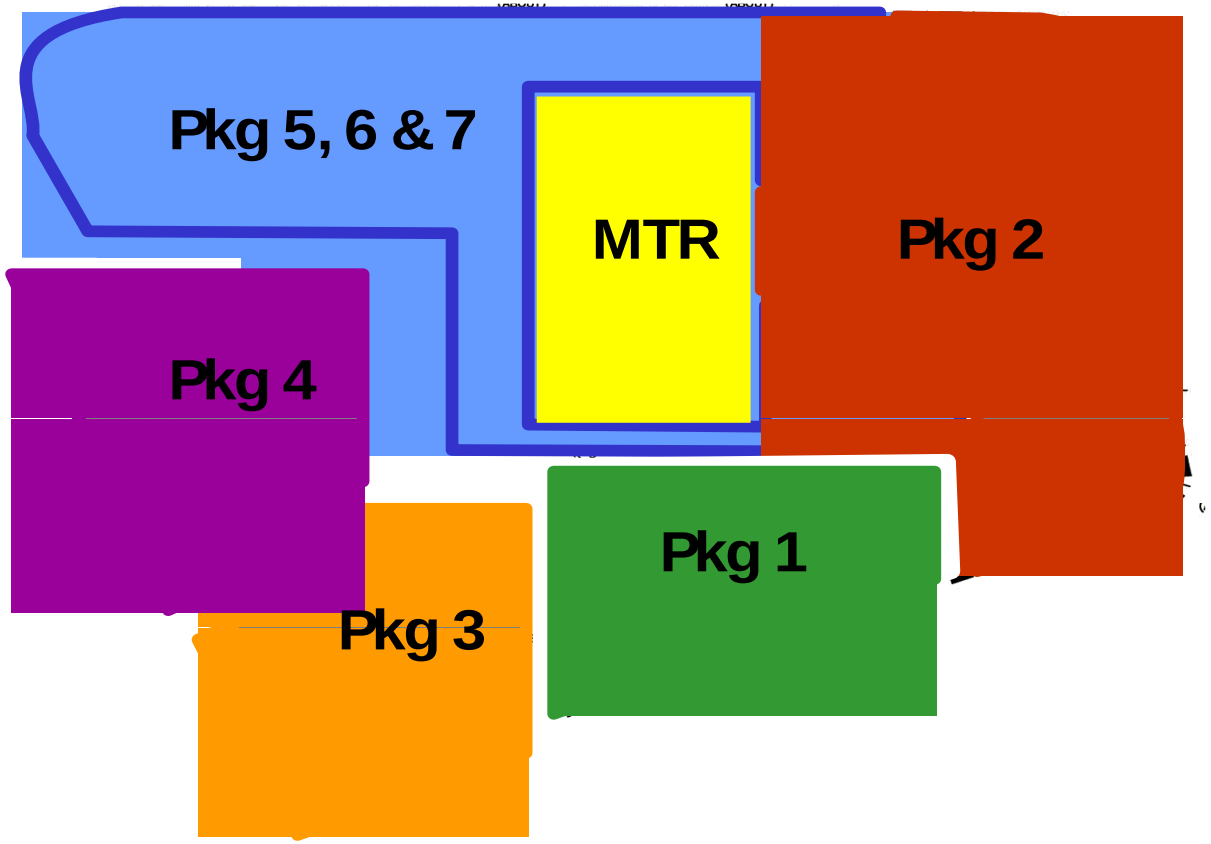
A shopping centre of 83,000 sq.m

A kindergarten

Transport interchange

Extensive public and private open space

Kowloon Station -
Creating a new Commercial + Residential community



- 13 ha development complex sitting on major railway facilities requires careful subdivision into 7 affordable packages to be implemented by a single agent as a comprehensive development

Tung Chung Station
An example of New Town Development

Tung Chung in 1992

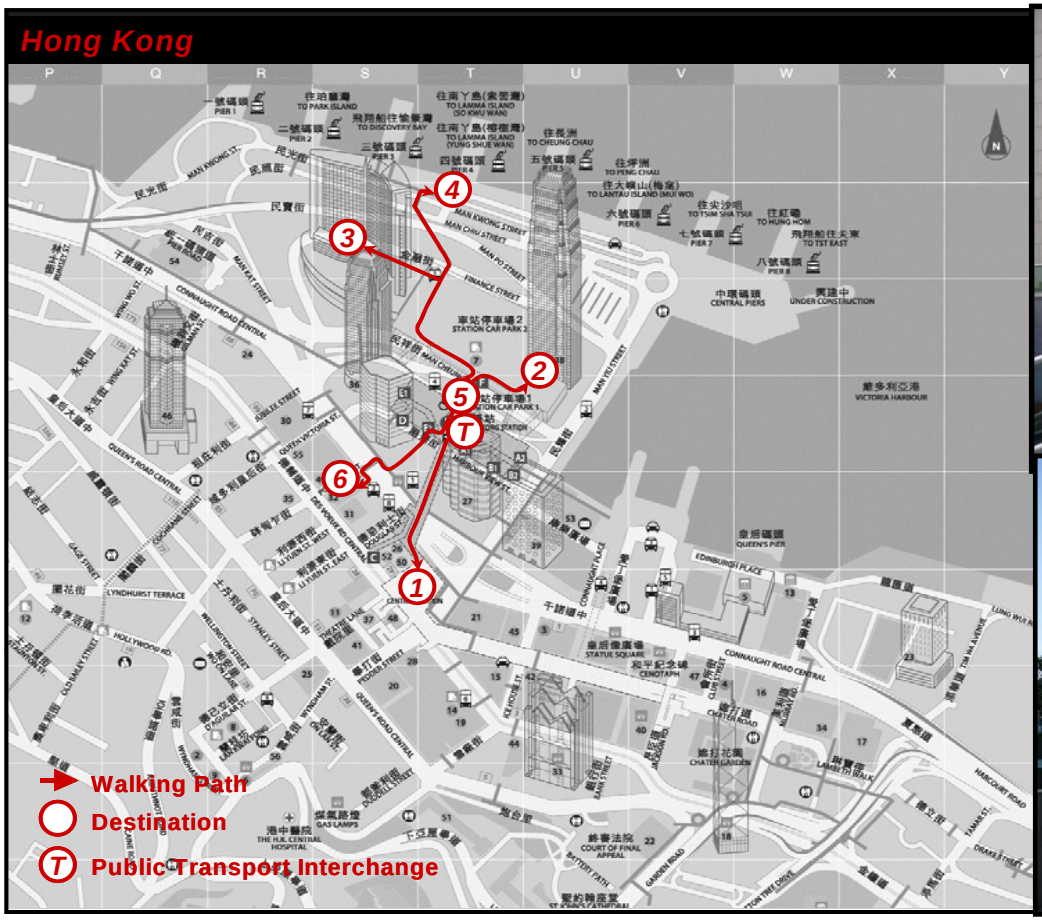
Tung Chung in 2005

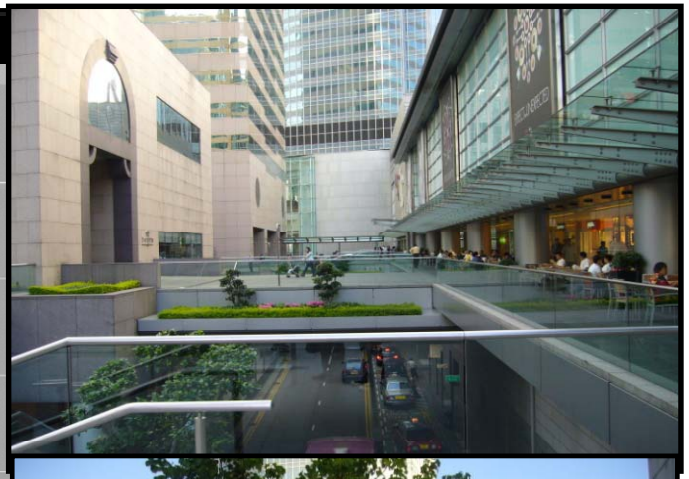
Tung Chung Station
An example of New Town Development

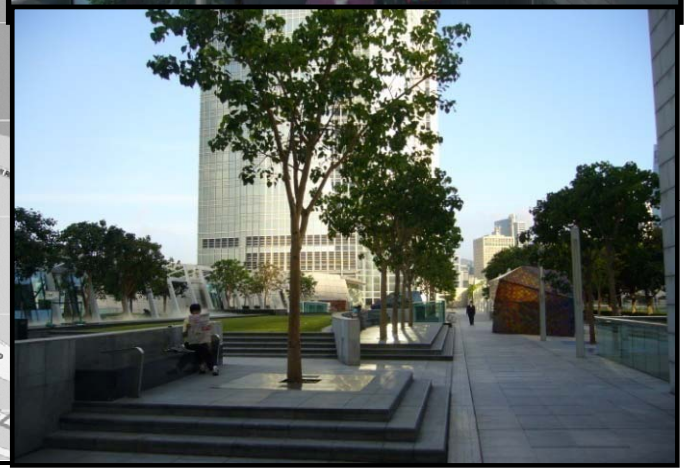
21.7 ha site area
1M sq.m total floor area

32 residential blocks
A number of low-rise housing complexes;
1 office tower of 15,000 sq.m
56,000 sq.m retail spaces
1 364-room hotel
Community facilities such as kindergartens, post office etc.
Extensive open space on both ground and podium level.

Design: Walkability Audit







Key Concepts

1. **Connectivity & Integration**
2. **Retail & Pedestrian Links**
3. **Amenities, Aesthetics, Openness**
4. **Legibility & Focus**

Pre-Place-making Station Access

Quarry Bay Station

Causeway Bay Station

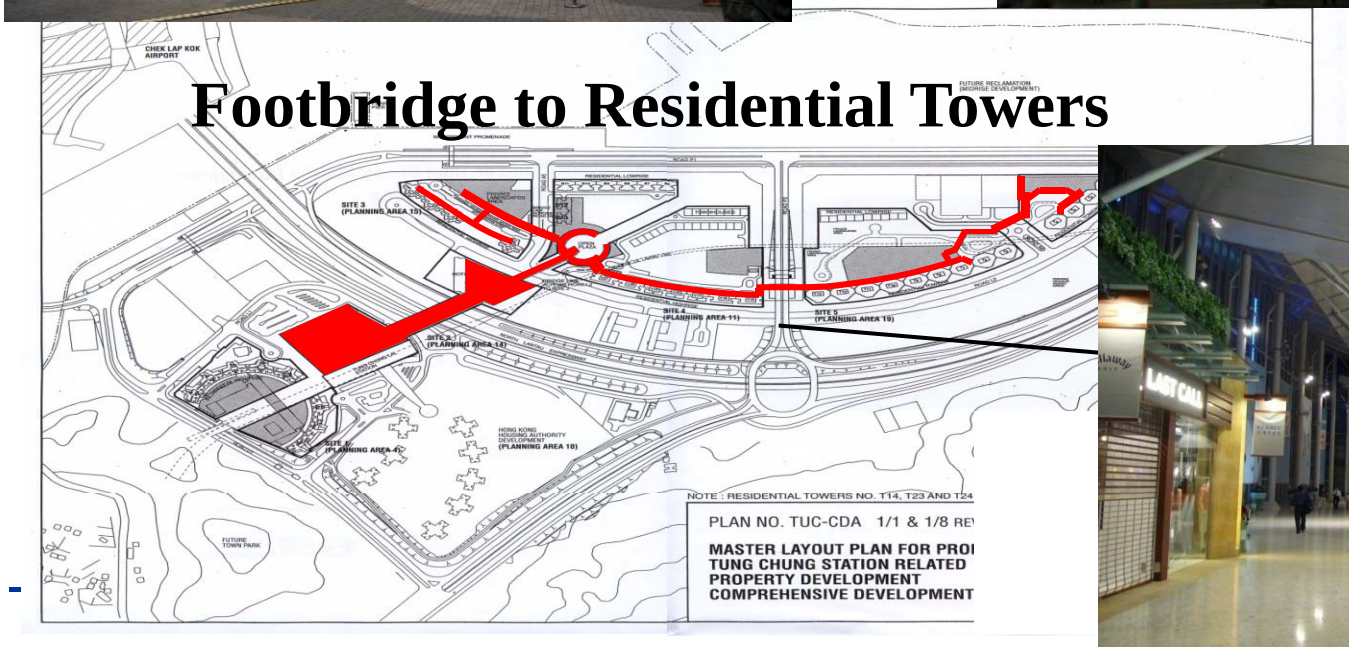
1980s-90s "Pre-Place-making" Station Access

Place-making & Station Access: Tung Chung Station

Station Square

Mall & Station

Footbridge to Residential Towers



Integrated Entrances

Footbridge Network

Shopping Mall above Station

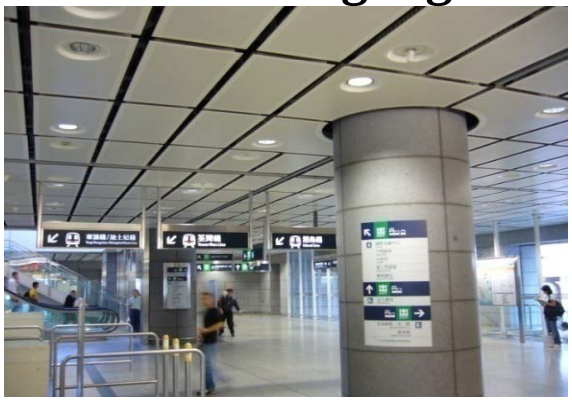
Long Footbridge

Corridor to Central

Art Space

Multiple Layers

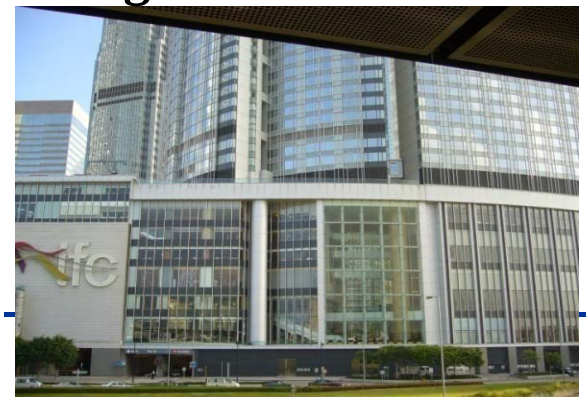
Well Placed Signage



Pedestrian Deck

Long Foot Bridge

Integrated Hotel

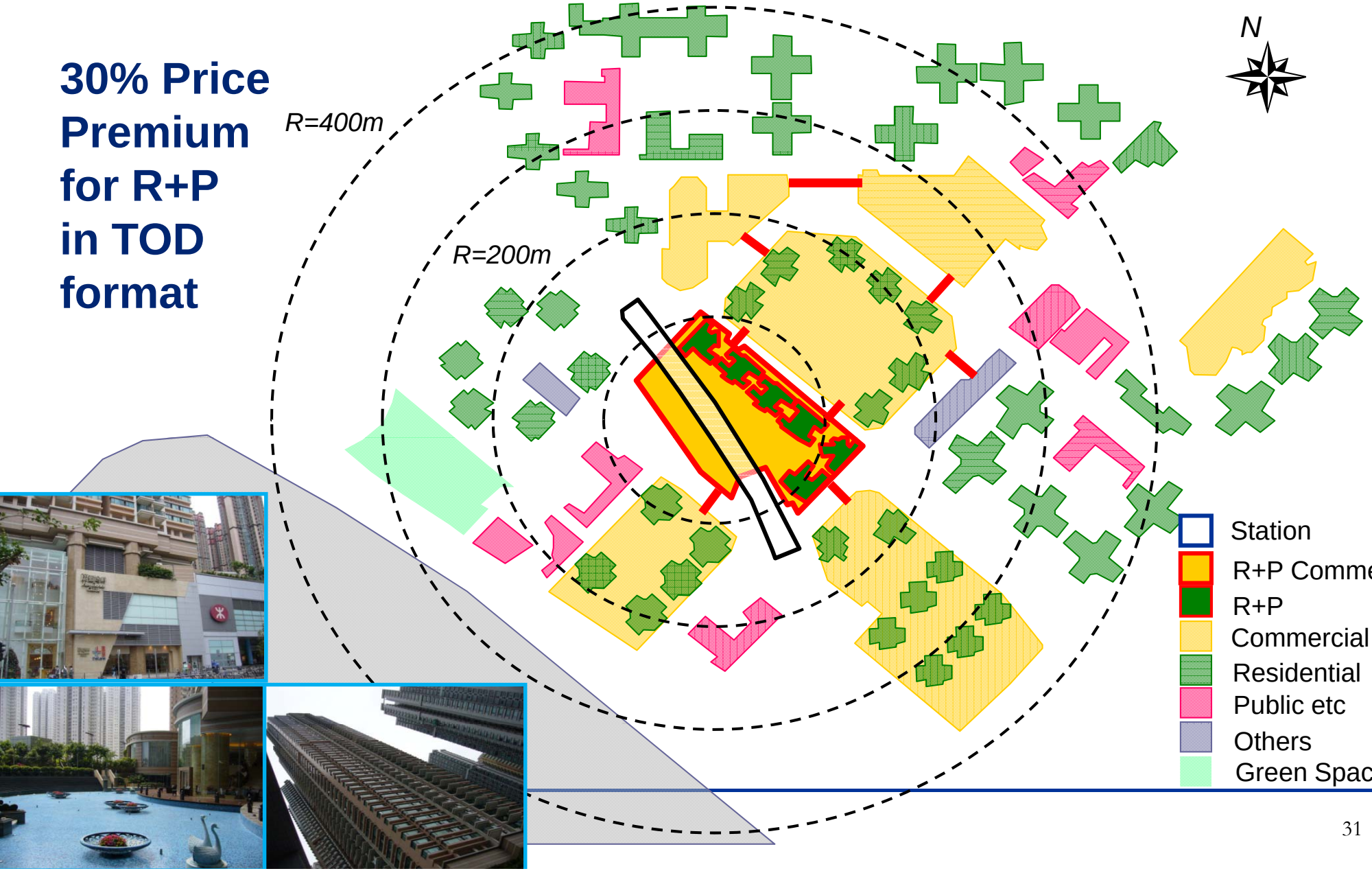


Footbridge to Harbor

Public Open Space

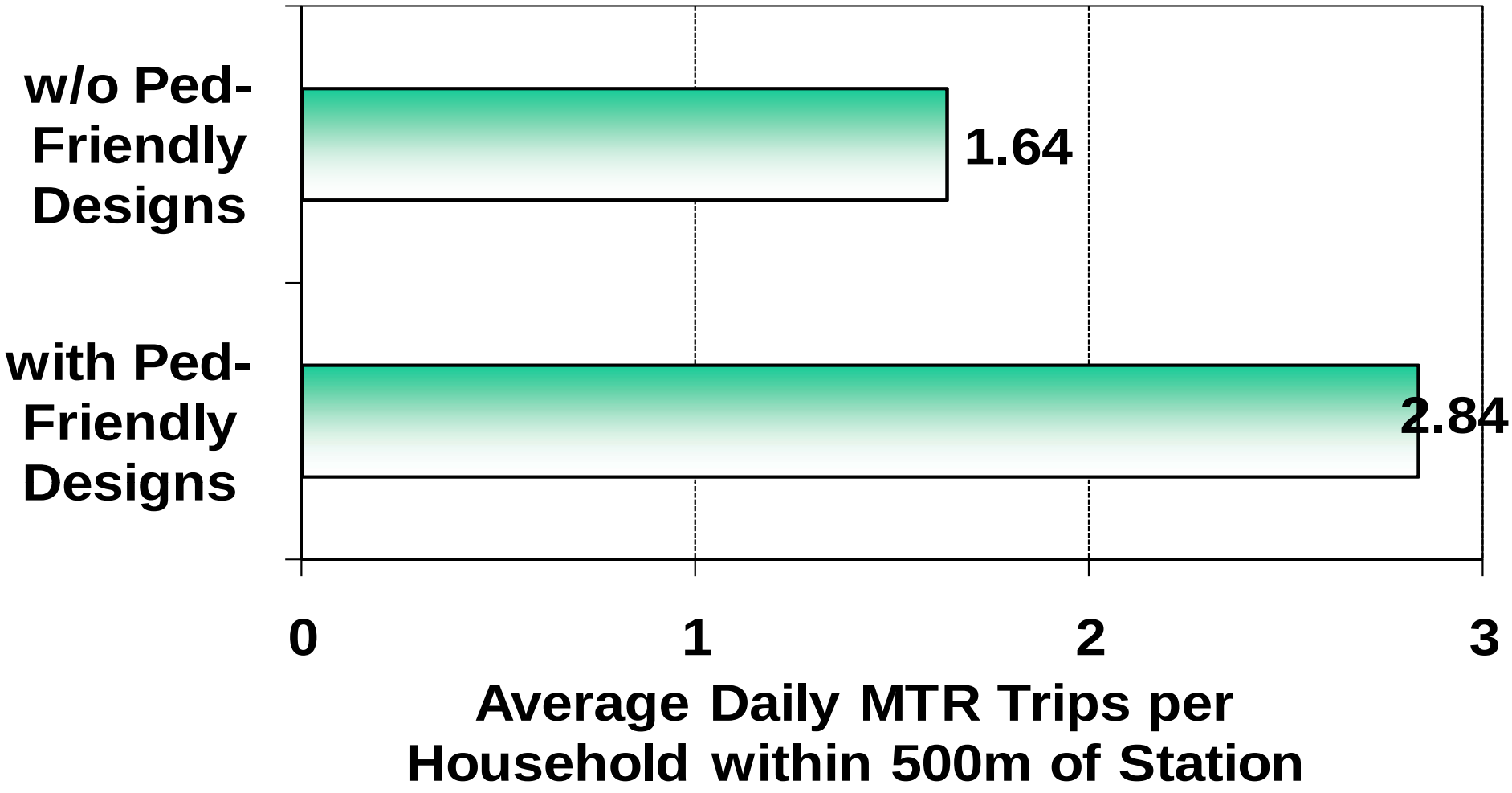
Hang Hau Station: Price Premium

30% Price Premium for R+P in TOD format



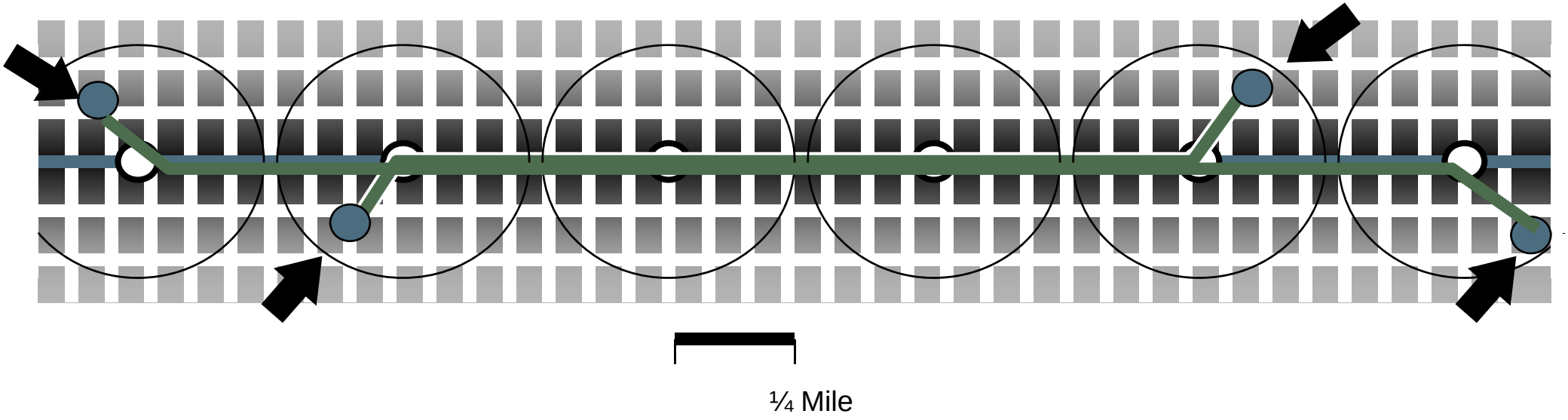
SYNERGY

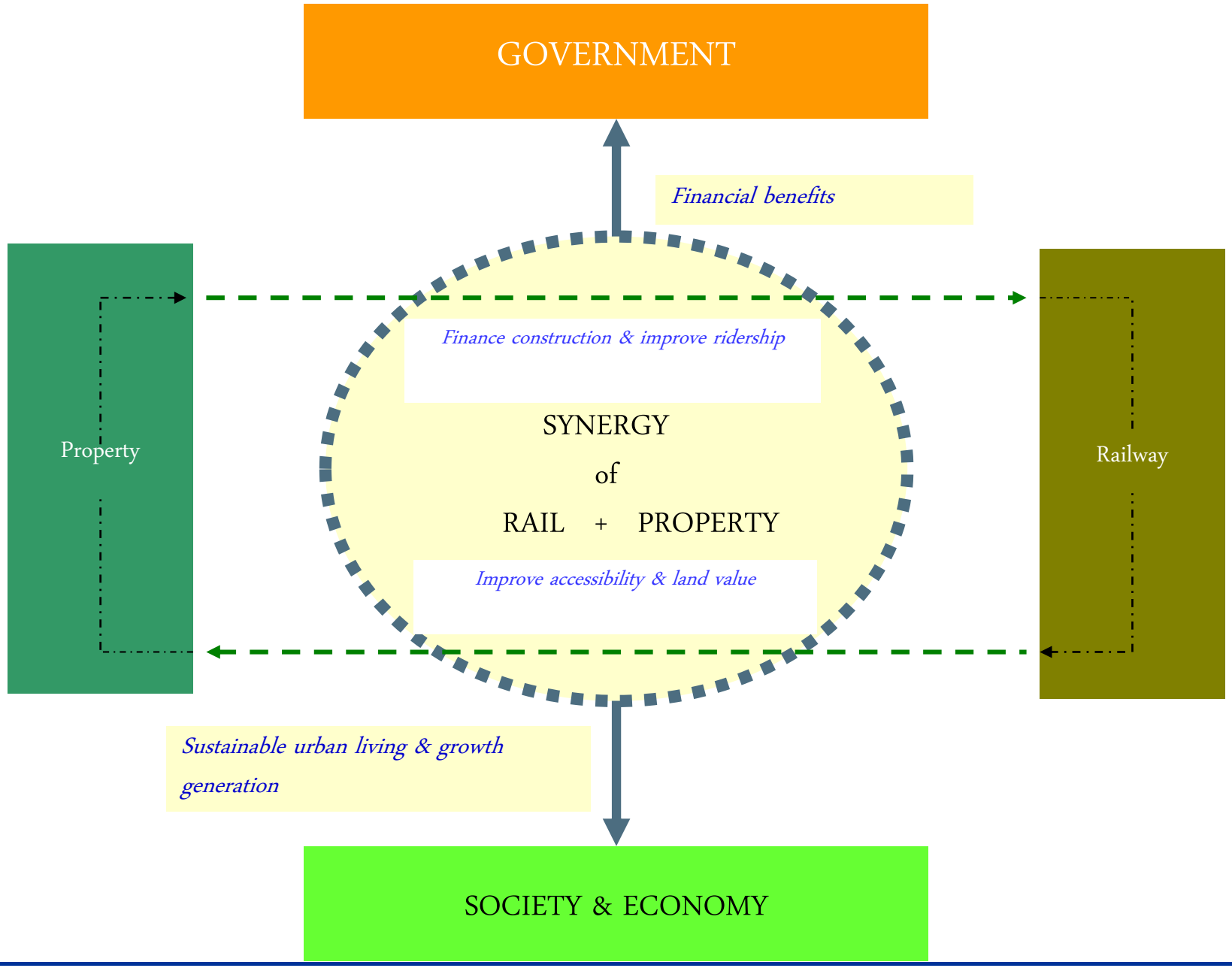
R+P + Ped-Friendly Designs = Ridership Bonus



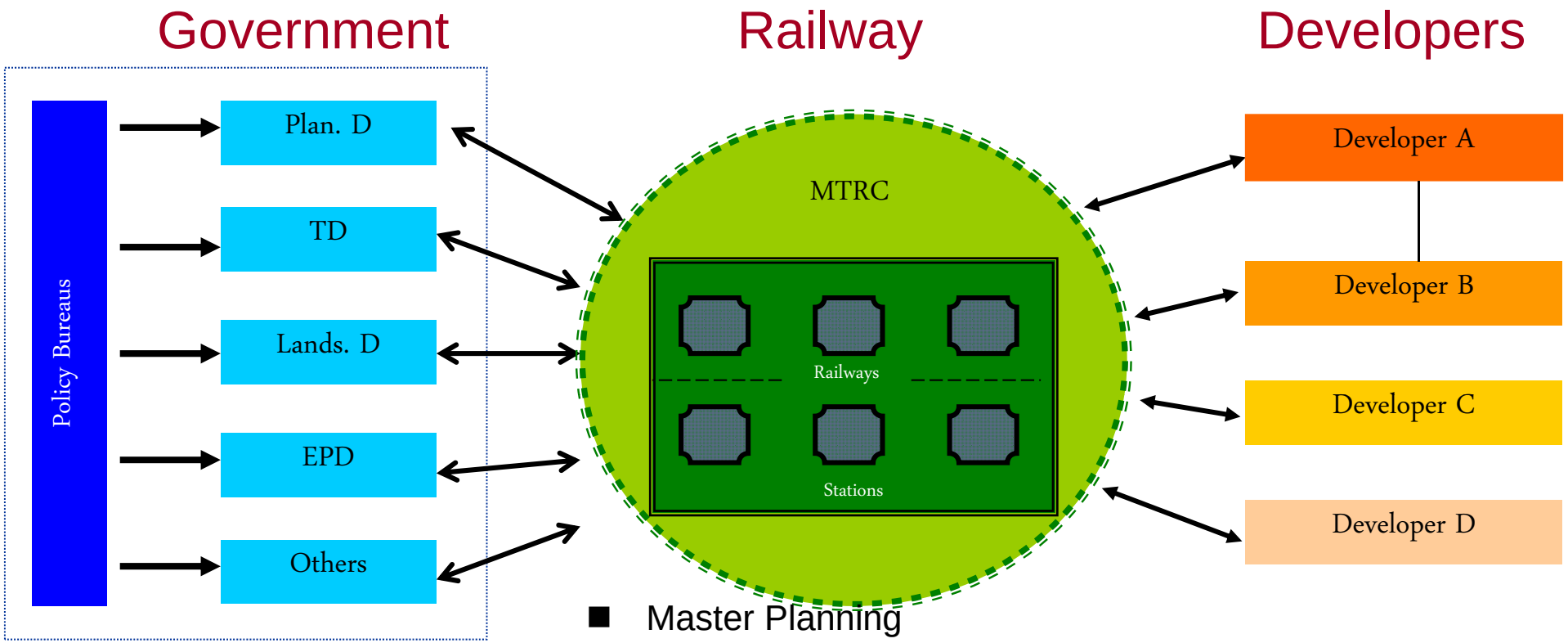
Dense, Mixed-Use Corridors

allow efficient 2-way travel flows




GOVERNMENT
Financial benefits
Property
Finance construction & improve ridership
SYNERGY
of
RAIL + PROPERTY
Improve accessibility & land value
Railway
Sustainable urban living & growth generation
SOCIETY & ECONOMY

MTRC as a "Coordinator" in the Urban Development Process



- Master Planning
- Obtaining Approval in the Statutory Planning Process
- Continuous Design Refinement with Developers

Lessons learnt and implications for Thailand

- The *urban density* of development is imperative to ensure financial sustainability of TOD.
- Defining the *hierarchy of public transit service* is important for avoiding wasteful competition, hence ensuring efficiency of the system.
- The role of Transit authority is to build the *"community"* not just build the transit line!!!
- Synergy between Transit and Real-estate should be fully exploited to *internalize the Land-use benefit* of transit (this benefit is now enjoyed solely by private developers)

Lessons learnt and implications for Thailand

- Design of integrated *Rail + Property + Pedestrian* (RPP)

- Active role of transit operator in Property Market with government support should be envisaged (still we can find the Win-Win-Win situation): MRTA should act as the RPP coordinator.

- Many cities in Thailand can still be converted to a fully workable RPP city. The future is still bright!

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WHERE IDEAS BUILD A FUTURE

Thank you

for your attentions