Past Present and Future Models of Transit Oriented Development

‘From International Theory to Asian Practice HK, Mainland GBA and Asia’

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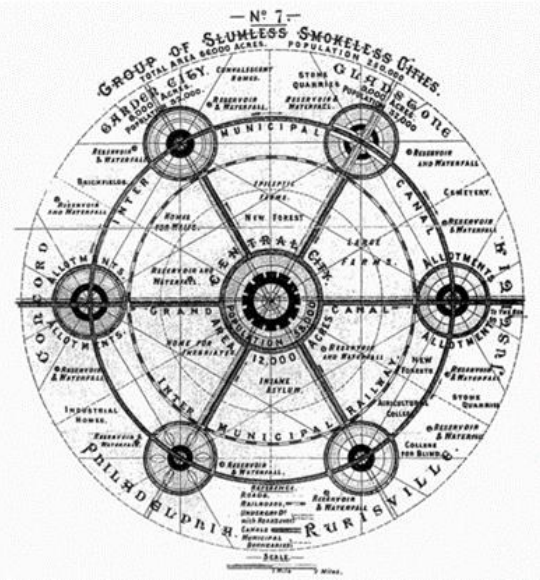
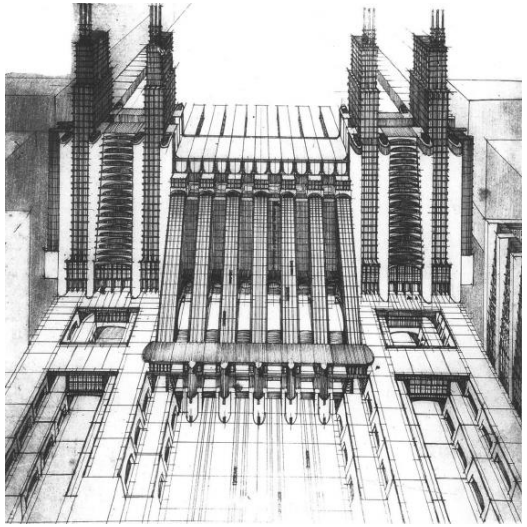
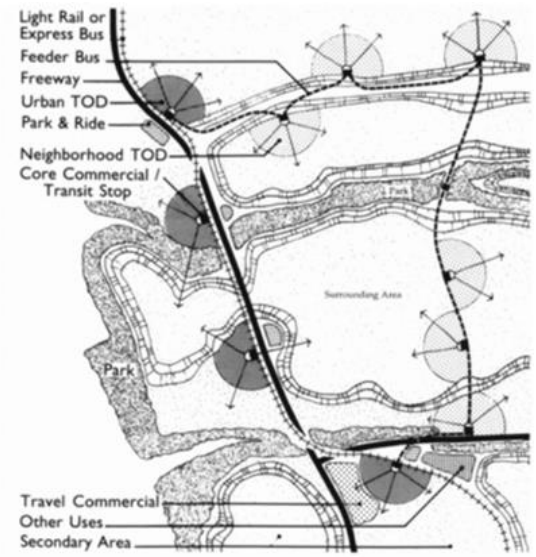
Historical Models of Rail TOD (Europe / USA)
Garden City, Sant'Elia, Corbu / Peter Calthorpe's TOD Theory

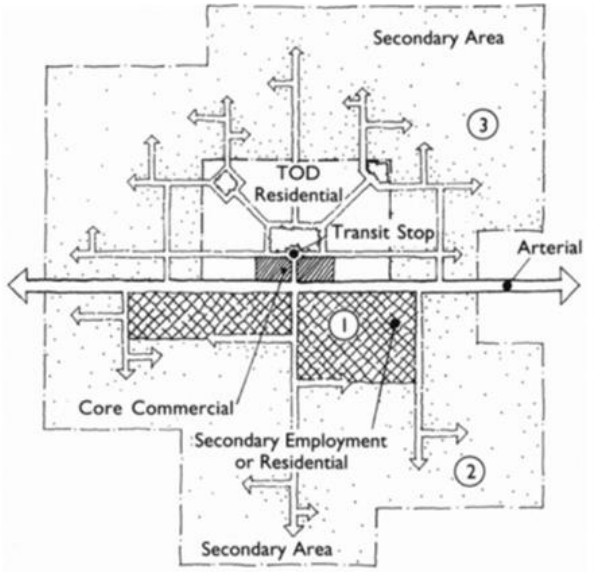


Garden City model,
Ebenezer Howard, 1898



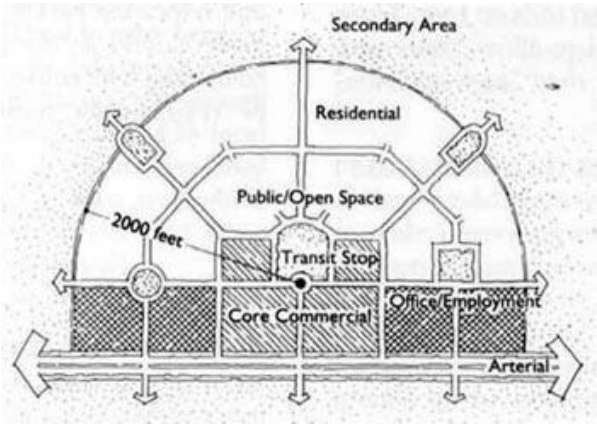
Station for airplanes, trains with funiculars,
and elevators on three street levels,
La Citta Nuova, Antonio Sant'Elia, 1914.

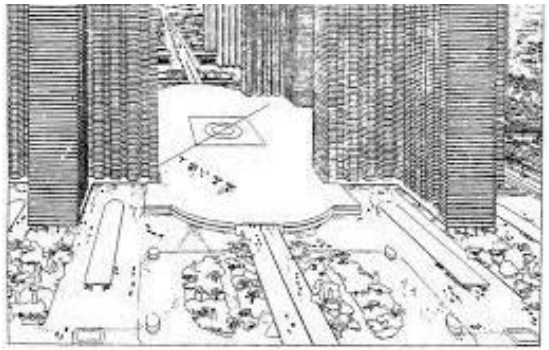




Transit Oriented Development
term was codified in late 1980s

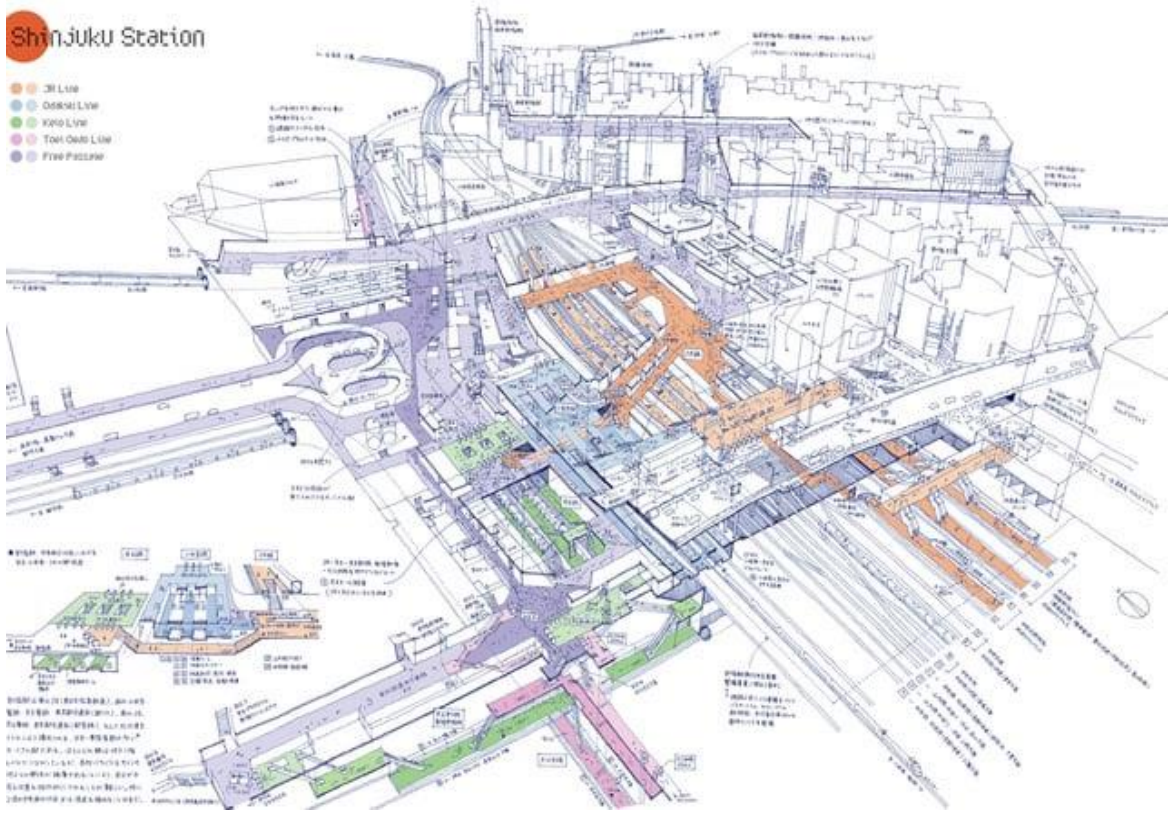
The Next American Metropolis
Peter Calthorpe, 1993



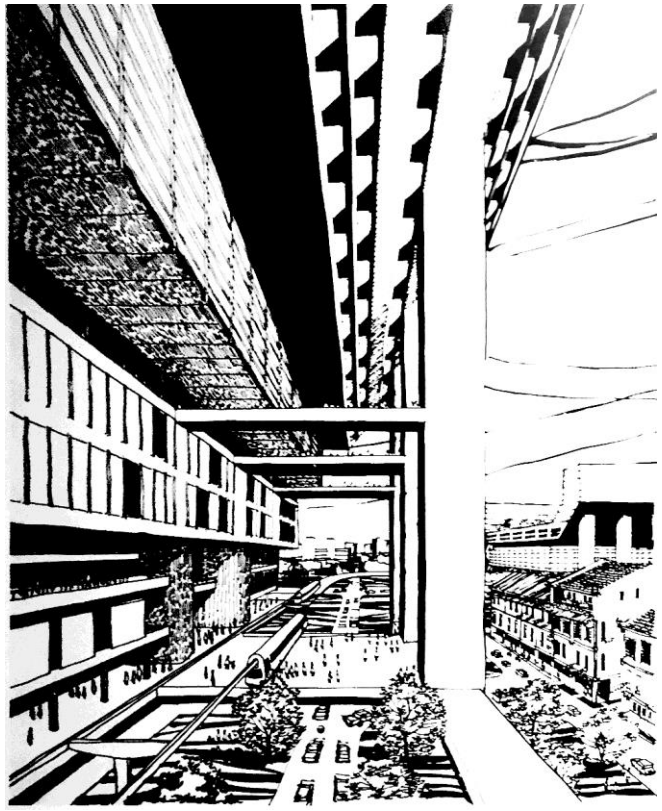


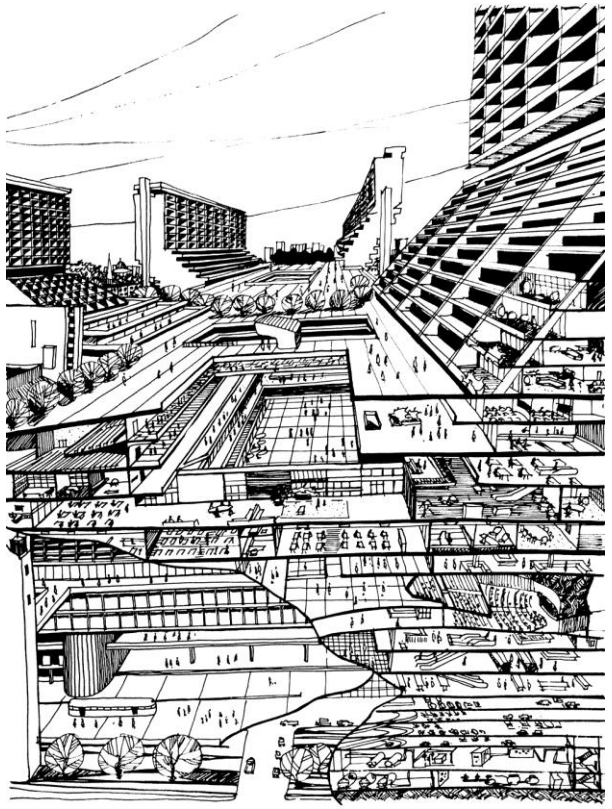
Station Square, with adjoining airport
Ville Contemporaine
Le Corbusier, 1922

Historical Models of TOD (Asia – Japan, Singapore, HK)



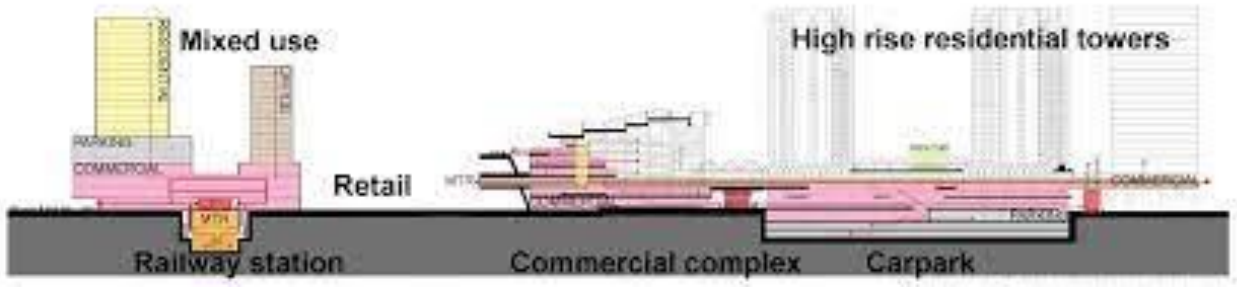
Shinjuku Station built 1885
200 exits, 51 platforms
World's busiest station
Average daily passenger 2,704,703 (2022)
TOD developments since 1960s
Drawing by Tomoyuki Tanaka

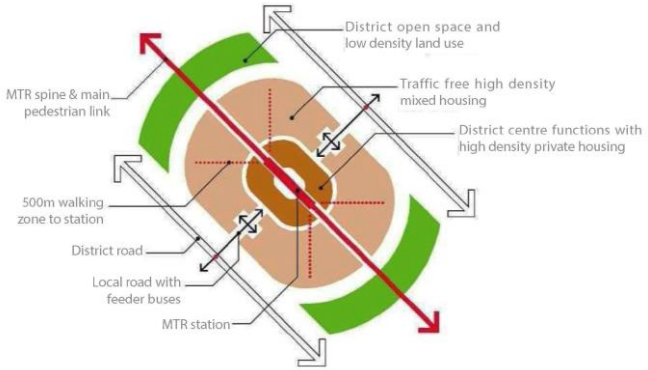




SPUR's 1966 Proposal for an Asian Future City
William Lim, Tay Kheng Soon, Koh Seow Chuan, Chew Weng Kong, Chan Sau Yan
(Source: SPUR 65-67)
Singapore MRT opened in 1987

TOD Now: HK ‘R+P’ Model Dominant – Downtown & Newtown





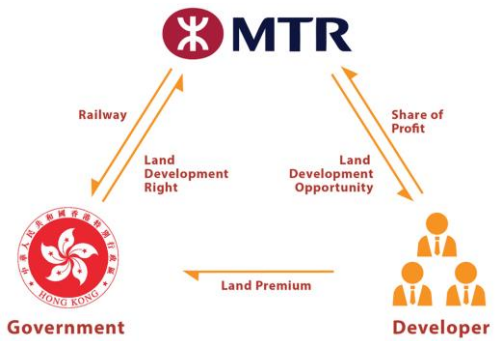
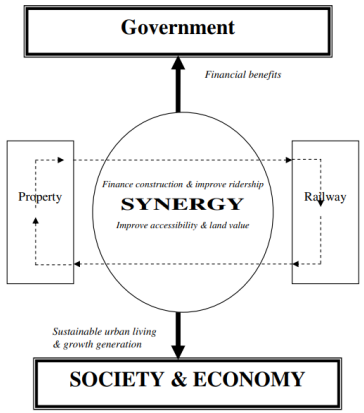
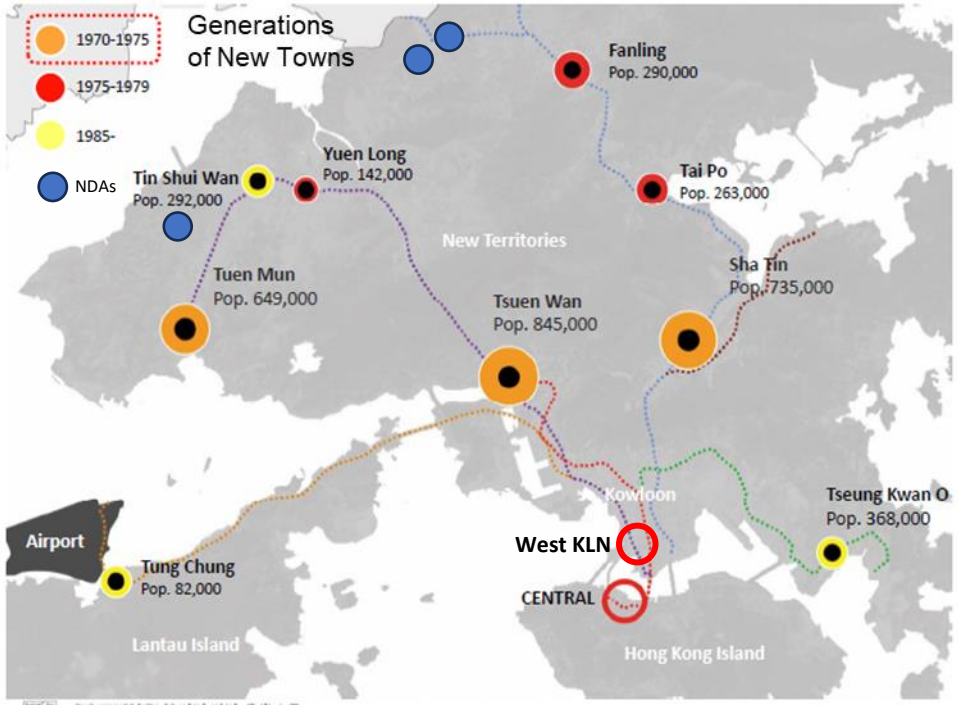


Figure 8: Synergy of Integrated Railway and Property Development Model



Source: Tang, Chiang, Baldwin & Yeung, 2005, p25

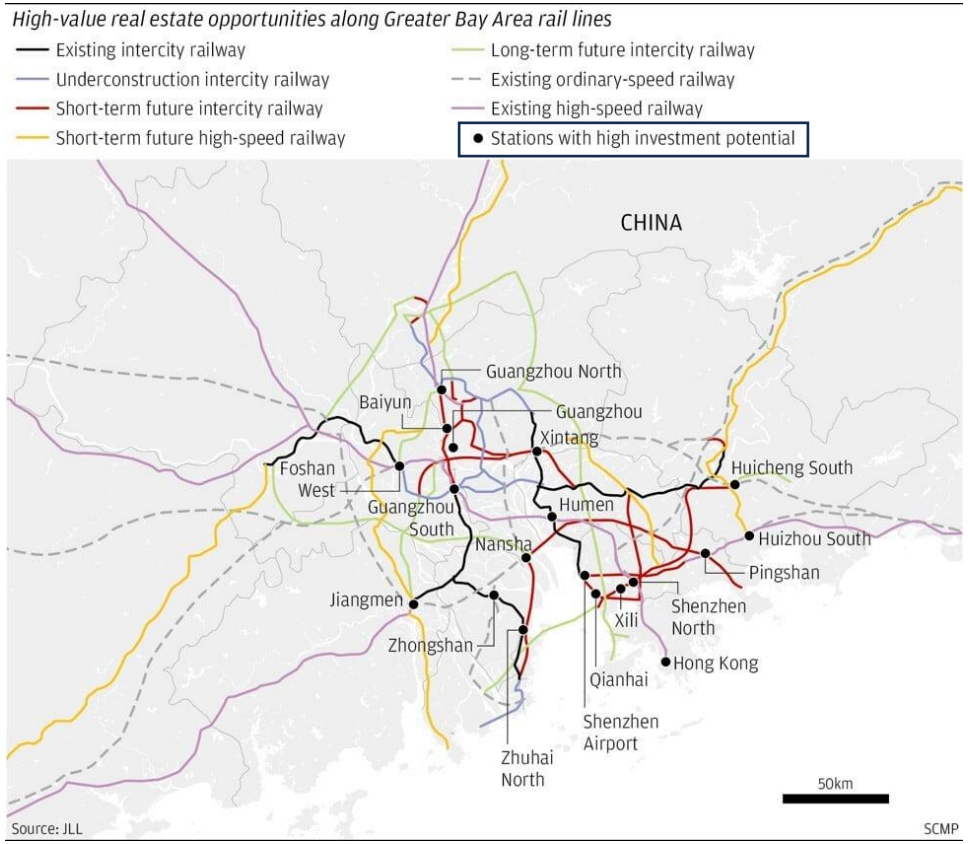
HK MTR started in 1979



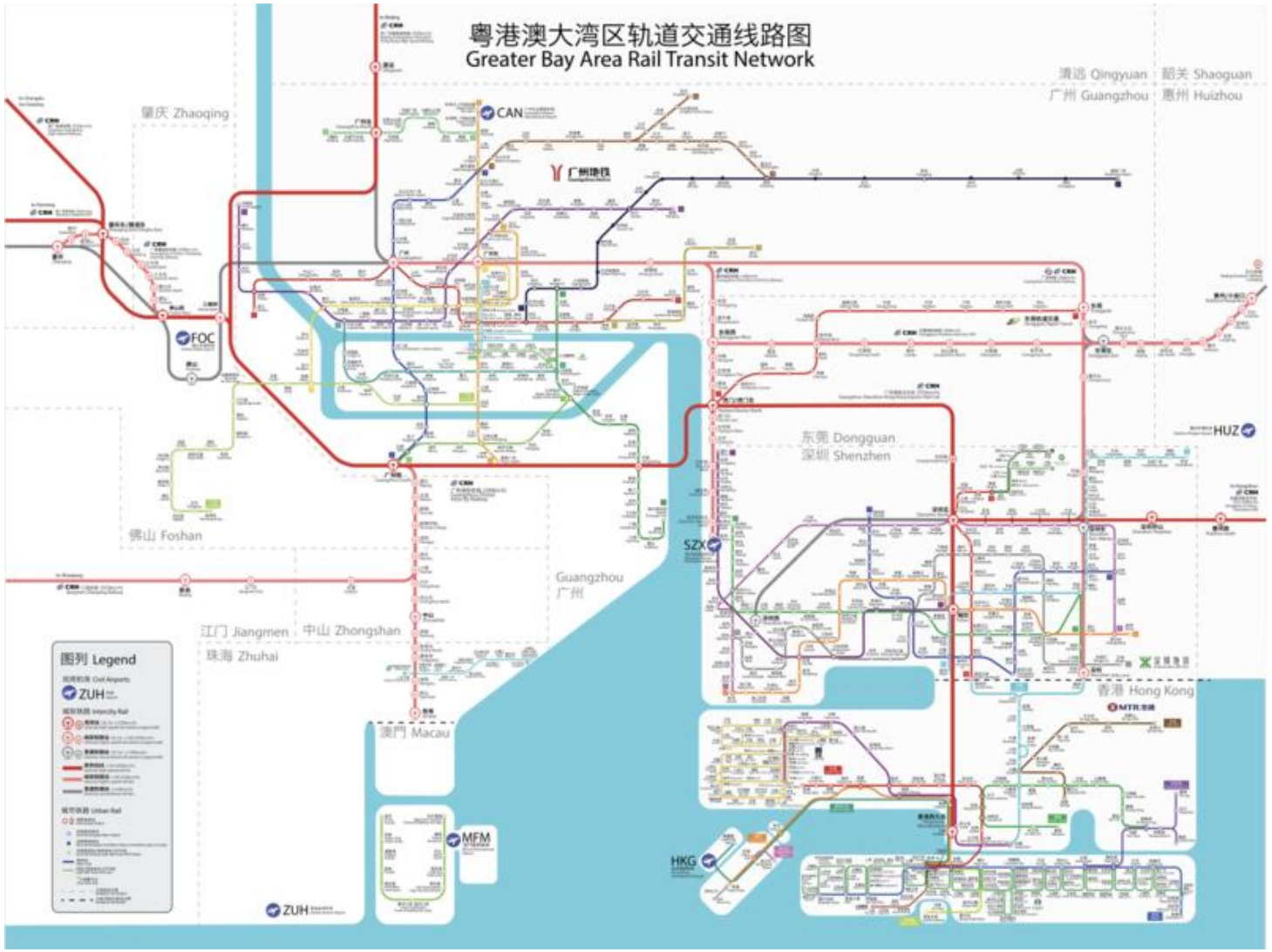
Shatin New Town 1973

Tin Shui Wai New Town 1993

TOD Now - GBA Railway Networks - HSR + Intercity + Metro



Source: JLL (2019)



Guangdong-Hong Kong-Macau Bay Area transit network (Pearl River Delta Metro Region), including high speed, higher-speed, conventional intercity rail, in addition to metro and light rail/APM/tram services in HK, Macau, and southern-central Guangdong (2020 Source: https://en.m.wikipedia.org/wiki/File:Greater_Bay_Area_Rail_Transit_Network.png

TOD Models - Mainland GBA Models

HK Developers TOD smaller scale than Gov led TOD

By HK Developers (GBA)

Sun Hung Kai Properties Qingsheng Project, Nansha HSR + GZ Metro
(GFA 306,000 sqm, office buildings and shopping mall. Source: SHKP.com)

By Mainland Government + Rail / Metro Co JV (GBA)

Shenzhen Xili HSR Hub, 189 Ha, TOD '4.0' 2.12mil sqm
"TOD 4.0" project concept of "integrating station, city, people, and nature." (2022, Nikken Sekkei)

TOD Models - Mainland Shenzhen

Metro Rail + HSR led **Shenzhen sub-centres are generated by emerging mixed use TOD Hubs**

SZ Guangming TOD Hub
HSR + 3 Metro
Architect: Fosters + Partners

SZ North Station TOD Hub
HSR + Metro
Architect: HPP

SZ Qingshuihe Transport Hub
HSR + 3 Metro
Architect: Aedes

TOD Models - Mainland Guangzhou

Metro Rail + HSR led **China's Busiest High Speed Rail Station (average >510,000 passengers / day)**

SHKP ICC at Guangzhou South Station

Covering a gross floor area of about 9.3 million sqft, Guangzhou South Station ICC TOD) will comprise office towers, a shopping mall, hotel SA and residential units, apartments, and public transport facilities. Connections to 12 lines, including high-speed rails, inter-city and metro lines, as well as other modes. (Source: SHKP)

Surrounding developments at Guangzhou South Station

TOD Models (Asia – KL SG)

Metro Rail + HSR led **High Speed Rail between Singapore & Malaysia creates entire city districts**

Bandar KL Masterplan HSR TOD, Kuala Lumpur
Site Area: 196 Ha GFA: 16 mil sqm
Architect: SOM (2015)

Jurong Masterplan HSR TOD, Singapore
Site Area: 360 Ha GFA
Architect: KCAP / TFP (2017)

TOD Models (Mainland GBA HK SZ GZ)

Metro Rail + Air (+HSR) **Airports and Rail TODs are becoming destinations as 'Airport Cities'**

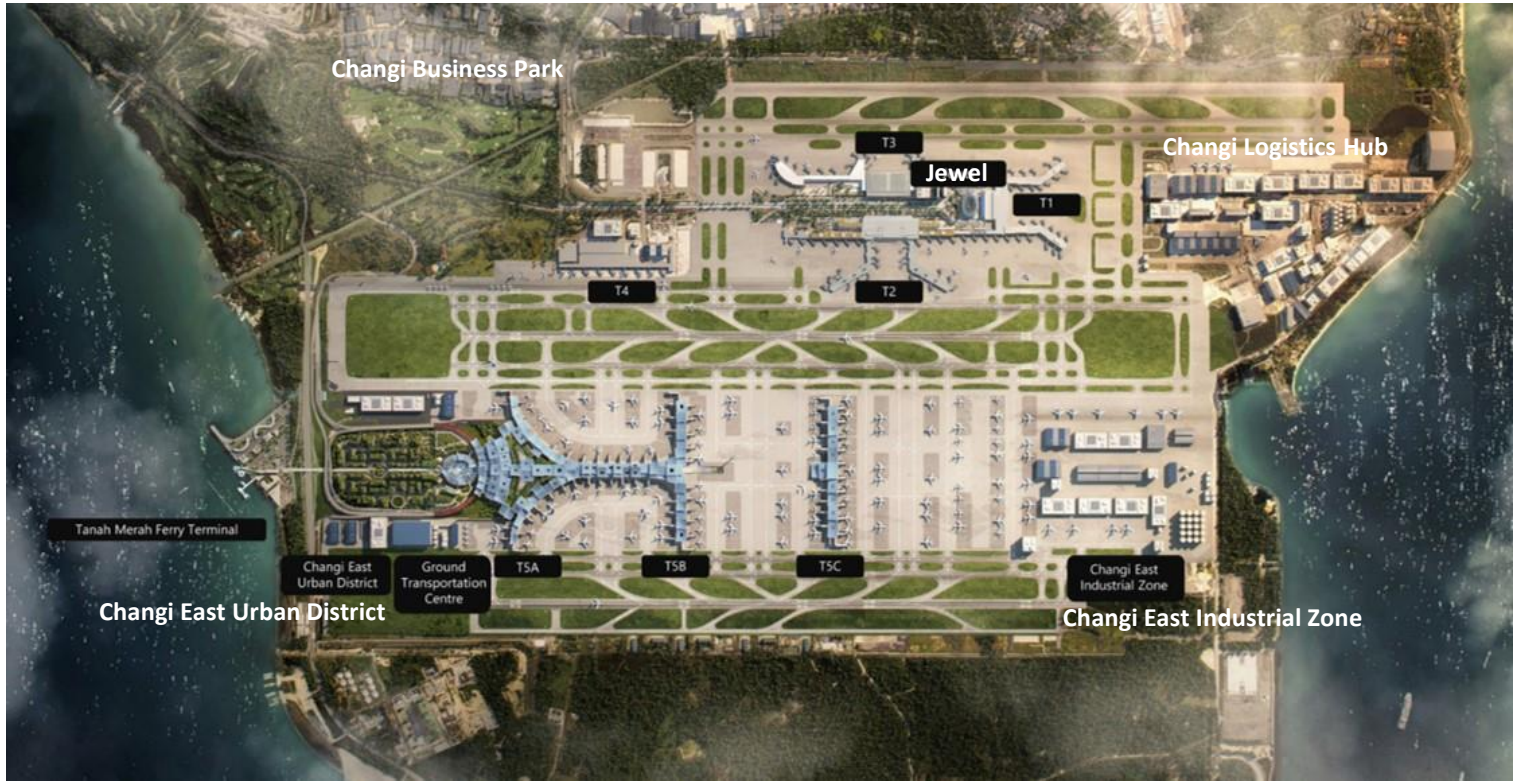
11 Skies @ T2 HKIA Sky City
350,000 sqm (under construction)
Architect: Lead8 Design

Shenzhen East Hub TOD @ T1 BaoAn Airport
200,000 sqm + 70Ha (under development)
Architect: Grimshaw

Baiyun Airport City @ T3 BaiYun Airport
1,147,000 sqm (under planning)
Architect: ZHA

TOD Models (Asia-SG Changi)

Rail + Air **Airports with Rail TODs are becoming destinations**



Changi Airport Masterplan Expansion 2030+
2 new MRT lines + 1 Airport Express (under development)
Source: CAG

Jewel @ T1 Changi Airport
GFA: 135,700 sqm 50mil visitors / year (2019)
Architect: Moshe Safdie / RSP

Jewel @ Changi has become a top global destination

HK TOD Model Now
Observations & Critique

1. MTRC R+P Model is flexible and can be adapted to commercial, residential or mixed use

2. HK's dominant TOD Model creates a certain type of uniform urban form and repetitive skyline

3. HK TOD's mostly enclosed commercial podiums above station, cuts off street life vibrancy and daylight

4. HK Newtown TOD's are mostly planned in same way, lacking diverse identities, not design quality driven

5. HK Commercial Downtown TODS with mixed use are high density, vibrant and active at all times of the day

HK TOD + Future Rail
Opportunities for HK

1. Gov Policy: *transport infrastructure-driven development through 'infrastructure first' and 'capacity creation' planning approaches* (quantitative) not enough qualitative – quality architecture vision in TODs is needed

2. Learn from successful and ambitious TOD Models to expand MTRC's R+P Model in scale and innovation

3. Open up HK TOD commercial podiums to incorporate streets and landscape at grade, better placemaking

4. HK and Shenzhen collaboration in rail development can intensify border TODs, and extend towards GBA

5. Western N-S rail link HK-KYCAI-HSK-SZ creates a development axis connecting HK and Airport to Qianhai GBA

6. Central Rail Link creates a new axis regenerate older KLN areas connecting them to NM San Tin Lok Ma Chau

7. Northern Metropolis NDAs and new E-W TOD need more diversity, design merits to compete with SZ/GBA

8. San Tin should become a major TOD Hub for Innovation and Cross Border Exchange (plan too vague now)