



スマートシティ ～都市・建築のサステナブルな未来をめざして  
'Smart City' aiming for a Sustainable Future of the Cities and the Architecture

February 18th, 2021 日建設計 都市デザイングループプリンシパル 田中 爾  
Wataru TANAKA, Principal, Urban and Landscape Design Group, NIKKEN SEKKEI LTD

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日建設計グループのスマートシティ・ソリューション  
Smart City Solutions by Nikken Sekkei Group

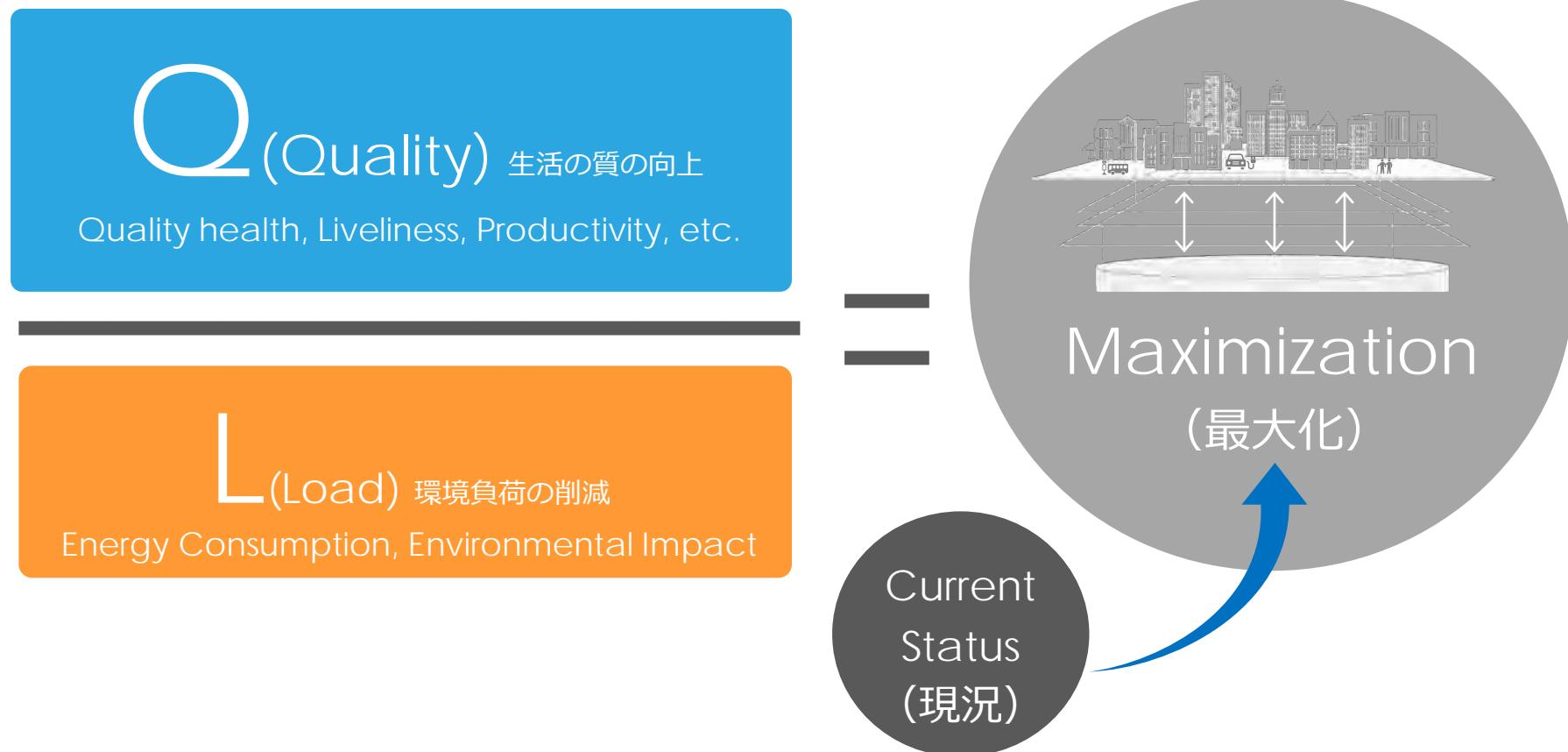
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# スマートシティの狙い ：都市と建築のサステナブルな未来づくり

Smart City aiming for a Sustainable Future of the Cities and the Architecture

Solving various problems of architecture, cities and environment,  
aiming to maximize Q (quality improvement) / L (load reduction).



# Nikken Group Solutions to maximize Q/L

## 1. Building design with environmental and healthy thinking

- Zero Energy Building
- Green/Timber Building
- Well Building
- Building Management by AI



## 2. Integrating Mobility with Urban Development

- TOD maximizing Transit Usage
- Mobility Hub Design
- Slow Traffic Network
- Autonomous Vehicle City



## 3. Urban Design maximizing Green Effects

- Green Infrastructure Design
- Multi-task Public Space Planning
- Water Sensitive Urban Design



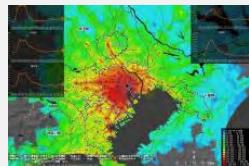
## 4. Area-wide Energy System Structuring

- District Cooling/Heating
- Locally-generated Energy Plan
- Local Smart Grid



## 5. Big Data Management to maximize Cities' Value

- Urban Value Index
- Energy Consumption Mapping
- Human Flow Simulation



## 6. Area Management

- Public Assets Utilization
- Area Activity Management
- Area Energy Management
- Building/Community Continuity



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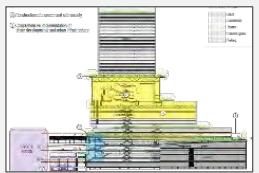
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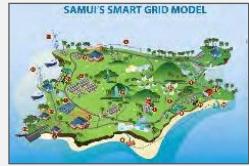
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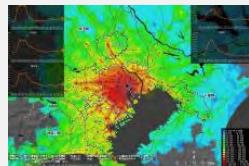
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# Integrating Mobility with Urban Development

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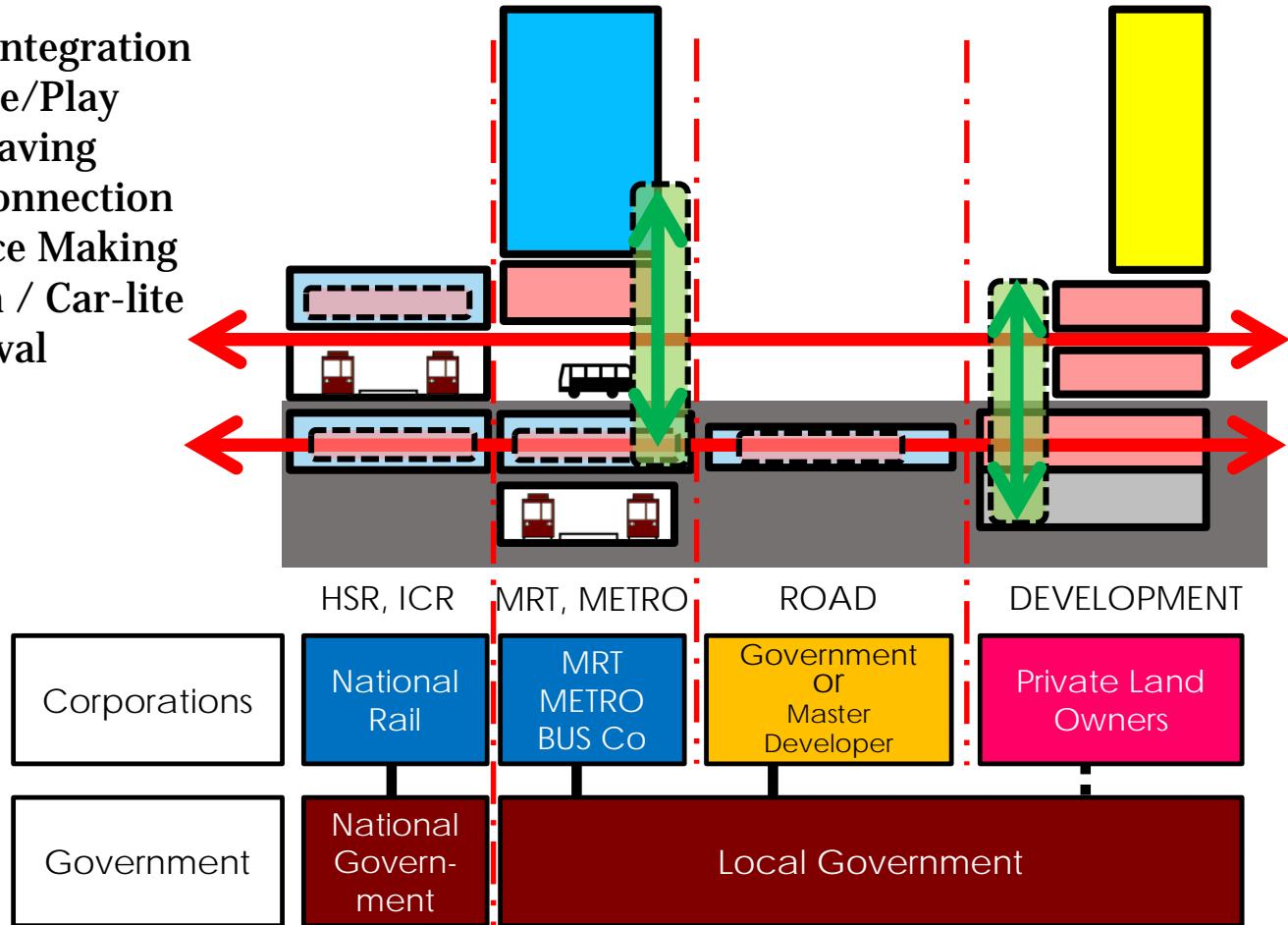
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# ターミナル等における「駅・まち一体都市デザイン」

## Station Integrated Urban Design

### GOALS

- ✓ Station x Urban Realm Integration
- ✓ Mixed Use for Work/Live/Play
- ✓ Energy Saving / Space Saving
- ✓ Vibrant and Seamless Connection
- ✓ New Public Realm / Place Making
- ✓ Pedestrian Prioritization / Car-lite
- ✓ City Icon / Sense of Arrival



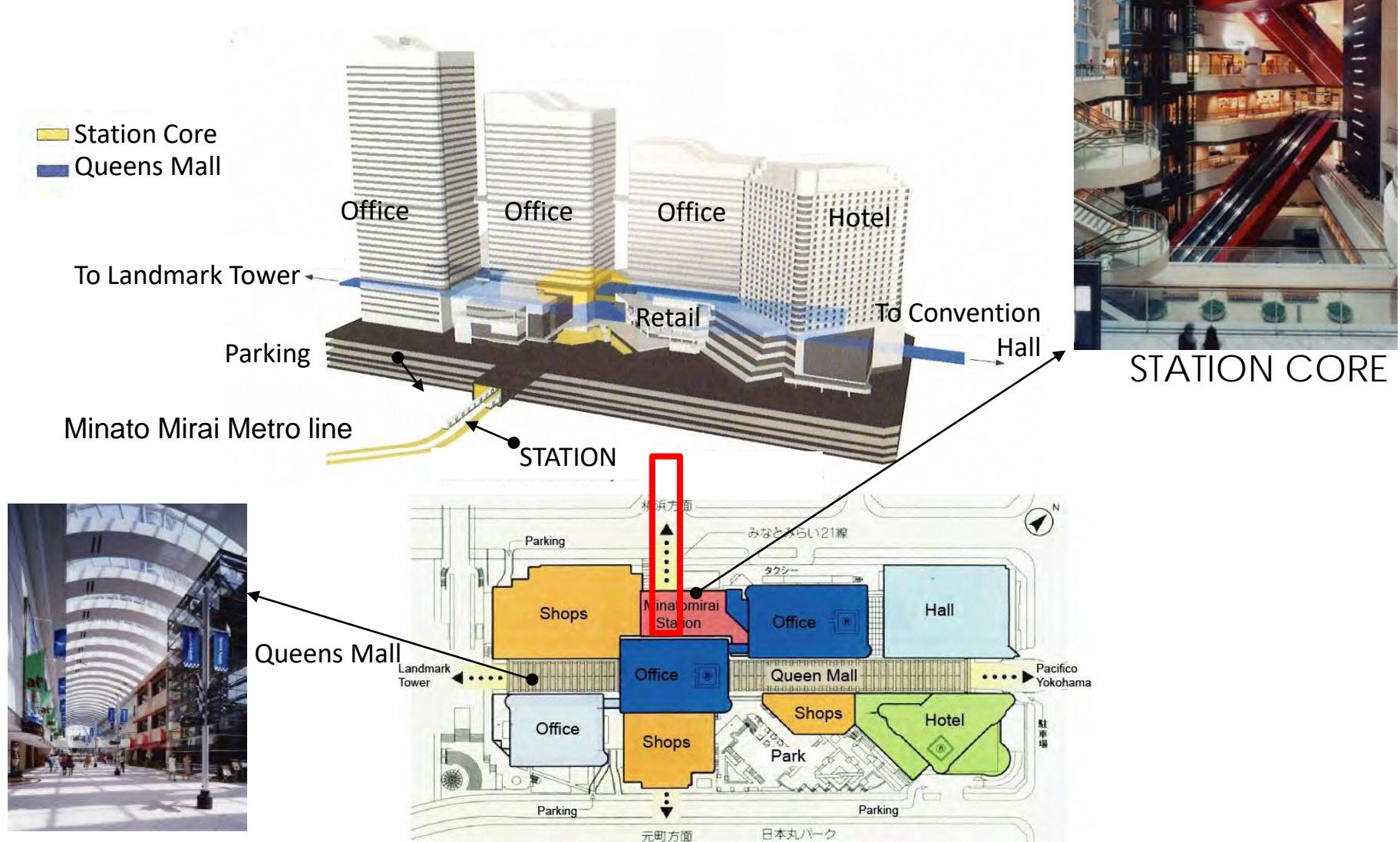
# 横浜クイーンズスクエア (1990)

Yokohama Queens Square – A Pioneer of Station Integrated Urban Design



- 496,000 sqm Private Development
- 1 Metro Station (81,000 passengers/day)
- 2 Other Stations in a walking distance (178,000 p/d)

# Station Integrated / Mixed Use / High Density / Pedestrian Prioritization



# 中国・広州国際交通ハブ（2021完成予定）

(Guangzhou 'CADRE' International Transit Hub, to be completed in 2021)



Use : Office, Retail, Hotel,  
Station, Bus Interchange

Floors : 46F, B4F

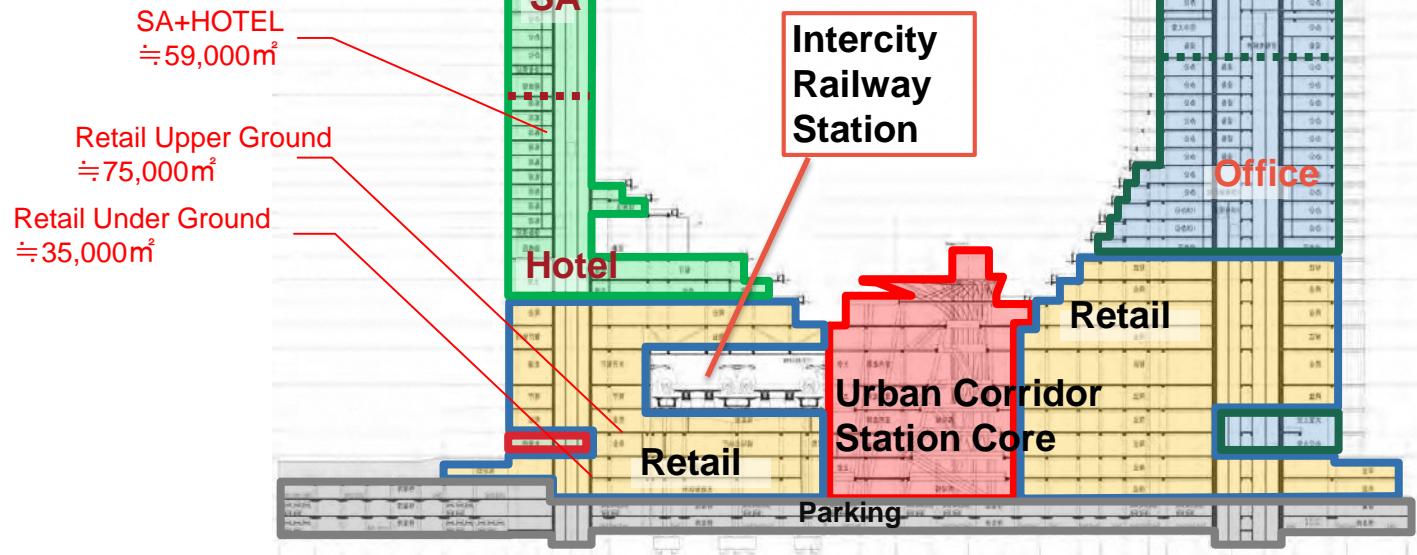
Area:Site : 39,000m<sup>2</sup>

BUA : 360,000m<sup>2</sup>

Underground : 88,000m<sup>2</sup>

# 中国・広州国際交通ハブ

## Development Program



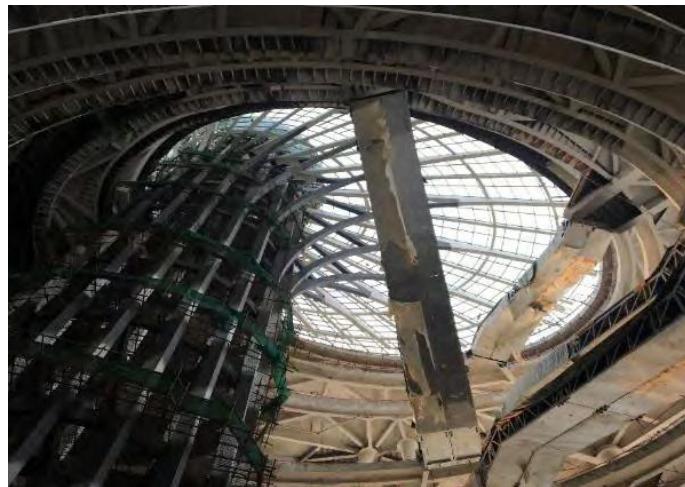
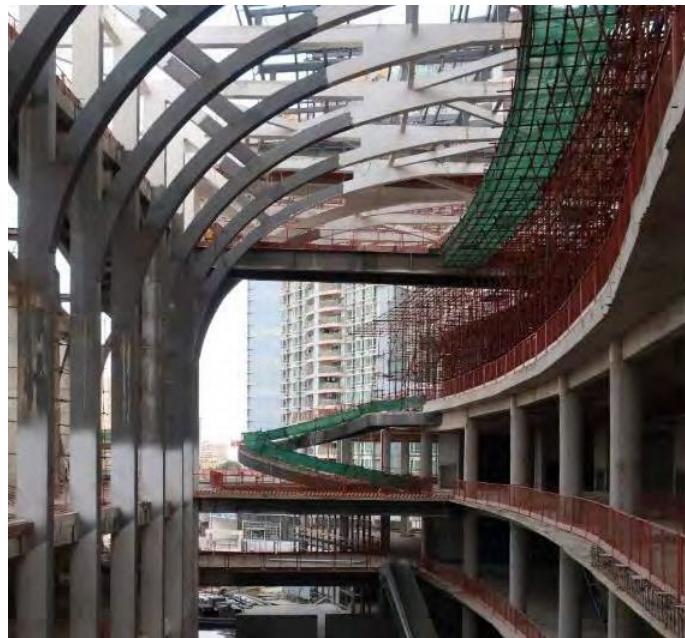
# 中国・広州国際交通ハブ

## Overall Section



# 中国・広州国際交通ハブ

# Construction Site



# Our TOD Challenges in Global Scale



Chongqing



Taipei



Shanghai



Moscow

# Green Infrastructure

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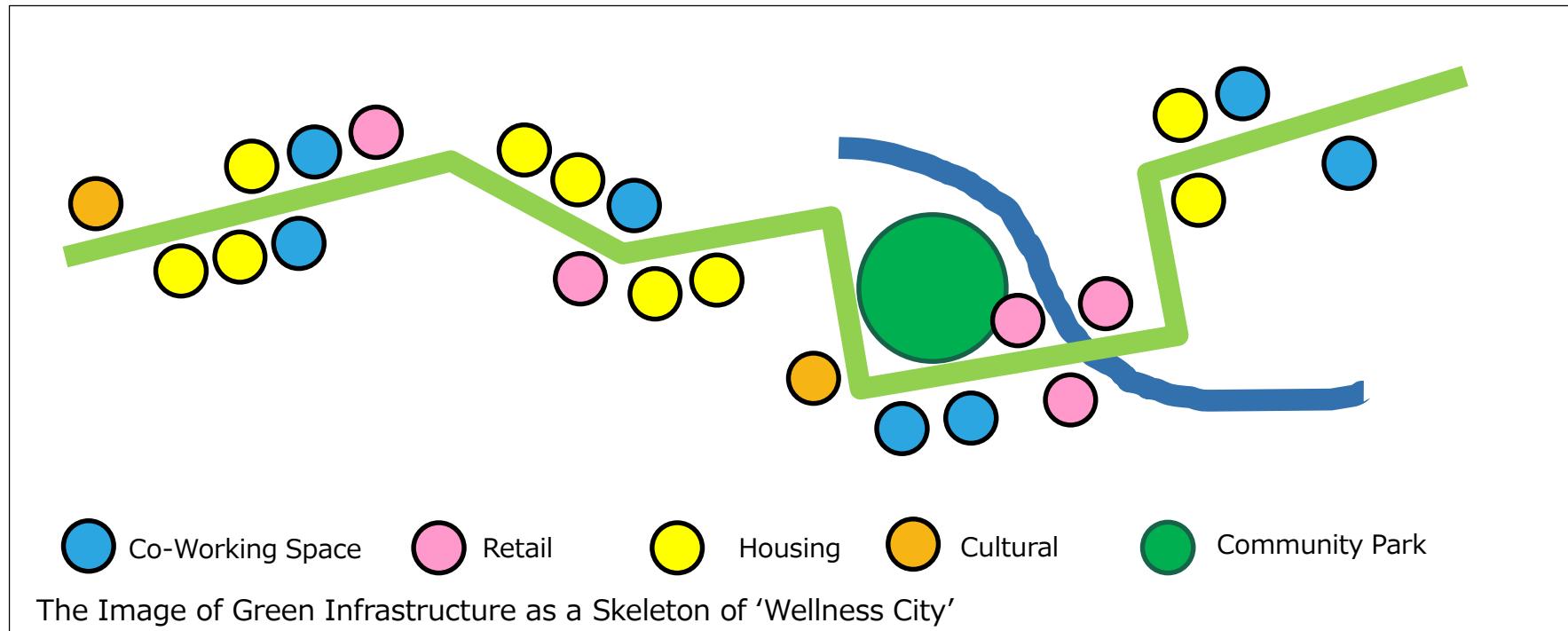
# 緊急事態宣言

Under the State of Emergency

## – 屋外活動への渴望 Longing for Open Air Activities –



# グリーンインフラがつくるウェルネスシティ 'A Wellness City' Structured by Green Infrastructure



- Transforming Gray Infrastructure to Green Infrastructure
- Creating a Chain of Public Space for Wellness Activities
- Structuring Network for Slow Traffic (Walk, Bike, Autonomous PMU)
- Introducing Smart Device for Activating Human Activities

# シンガポール レールコリドー (2016~)

Singapore Rail Corridor

- Old Malayan Railway Track
- 24km Stretch
- 10 Nodes



# Singapore Rail Corridor (2016~)

## 'LINES OF LIFE'



# Transforming Ex-Rail Track into Slow Traffic Network



# 'Platform' as a Community Hub



# 柏の葉イノベーションキャンパスとアクアテラス Kashiwa-no-ha Innovation Campus & Aqua Terrace



**BEFORE**



# AFTER







NIKKEN

EXPERIENCE, INTEGRATED