Sustainable Development by “TOD Garden City”

15 July 2022

Masafumi Ota 太田雅文
Fellow, Senior Researcher,
Tokyu Research Institute Inc. 株式会社東急総合研究所
CATALISANDO FUTUROS URBANOS SUSTENTÁVEIS

SÃO PAULO, BRASIL
16-20 DE SETEMBRO DE 2019
Migration patterns

- Using cellphone positioning data to detect the main origins and destinations of migrants in China.


Source: Xianwen Wang, et al, Tracing the Largest...
TRANSIT: Evolution to Mixed Use Community
Self-introduction

1984 Master of Engineering, Univ. of Tokyo
1984 join Tokyu Corporation, Transport Division
1987 Tokyu Research Institute Inc.
1992～1995 The Bartlett School of Planning, University College London, Ph.D
1995 Transport Division, Tokyu Corporation
2010 Tokyu Station Retail Inc.
2013 Urban Development Unit, Tokyu Corporation
2019 Tokyu Architects and Engineers Inc.
2020 Tokyu Research Institute
Typical TOD

Railway / Public Transport

Surrounding Area

Area of High Density

Station

TOD in JAPAN:
The Business Model of Private Railways: “Ensen” and “Den-en-toshi”

Garden City = “Den-en-toshi”

“Ensen” Center

Railway Station

Station

Station

Station
Business structure of private railways

- Transport
- Real estate
- Services for living
Proportion of transport business, 2021FY

Source: Fiscal Reports
**Ebenezer Howard**
1850 - 1928
Proposed Garden City

**Eiichi Shibusawa**
1840 - 1931
Imported Garden City

**Ichizo Kobayashi**
1873 - 1957
Carried out Garden City

---

**TOD**
Transit-Oriented Development:
Town planning/management
Taken initiative by
Public transport

---

Den-en-choufu around 1930
Town planning/management around a railway station
TOD in general

Railway, Public Transport

Surrounding area

High density

station

TOD in JAPAN:

A Business Model of Private Railways, “Ensen” Garden City

Garden City

“Ensen” Railway Centre
The Garden City by Howard by “tomorrow” in 1898
London: poly-centric structure

- Business Centre
- Residential Suburbs
- Conurbation
- Satellite town
- Green Belt
- Railways • Roads
- Decentralisation

■ pleasant environment
■ self-containment
TOD by private railways

Concept of “Ensen” area: area around railway lines

Life style of living in suburbs and commute to the centre by railways: “the Garden City”
Structure of a private railway company’s territory “Ensen”

- Residential Suburbs
- Transport Demand at a Radial Direction i.e. Commuting or Weekend shopping
- Private Railway Line
- Sub-Centre

Business Expansion by In-migration into the Territory and Creation of a Railway-oriented Life Style
Major railway opening:

Tokaido Line 1872
Tohoku, Takasaki Line 1883
Chuo Line 1889
Soubu Line 1894
Toban Line 1896
Tobu Isesaki Line 1899
Keikyu Line 1901
Tokyu Tamagawa Line 1907
Yamate Line 1909
Keisei Line 1912
Keio Line 1913
Keihin Tohoku Line 1914
Tobu Tojo Line 1914
Seibu Ikebukuro Line 1915
Tokyu Ikegami Line 1922
Tokyu Mekama Line 1923
Tokyu Toyoko Line 1926
Sotetsu Line 1926
Seibu Shinjuku Line 1927
Odakyu Line 1927
Yokosuka Line 1930
Keio Inokashira Line 1933
Tokyu Den-en-toshi Line 1966
Keio Sagamihara Line 1971
Odakyu Tama Line 1974
Sotetsu Izumino Line 1976
Tokyu Shin-tamagawa Line 1977

Number of cars owned (Tokyo Metropolitan Area)

出典: 一般財団法人自動車検査登録情報協会

Ten-fold increase for 50 years (1968 ~ 2018)
<table>
<thead>
<tr>
<th>Year</th>
<th>Seibu</th>
<th>Keio</th>
<th>Odakyu</th>
<th>Tokyu, MM</th>
<th>Keikyu</th>
<th>Keisei, Hokusou</th>
<th>Sotetsu</th>
<th>JR, Rinkai</th>
<th>Undergrounds, Toyo, Saitama, TX</th>
</tr>
</thead>
</table>
### National railways

<table>
<thead>
<tr>
<th>Year</th>
<th>Route</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>Tokyo - Shohibashi</td>
</tr>
<tr>
<td>1990</td>
<td>Mikawashima - Nippori</td>
</tr>
<tr>
<td>1980</td>
<td>Tokyo teleport</td>
</tr>
<tr>
<td>1970</td>
<td>Tokyo - Omiya</td>
</tr>
<tr>
<td>1960</td>
<td>Tokyo - Omiya</td>
</tr>
<tr>
<td>1950</td>
<td>Tokyo - Omiya</td>
</tr>
<tr>
<td>1940</td>
<td>Tokyo - Omiya</td>
</tr>
<tr>
<td>1930</td>
<td>Tokyo - Omiya</td>
</tr>
<tr>
<td>1920</td>
<td>Tokyo - Omiya</td>
</tr>
<tr>
<td>1910</td>
<td>Tokyo - Omiya</td>
</tr>
<tr>
<td>1900</td>
<td>Tokyo - Omiya</td>
</tr>
<tr>
<td>1890</td>
<td>Tokyo - Omiya</td>
</tr>
</tbody>
</table>

### Private railways

<table>
<thead>
<tr>
<th>Year</th>
<th>Route</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>Kitano - Goeryoma, Shibuya - Kichijoji</td>
</tr>
<tr>
<td>1990</td>
<td>Takadanobaba - Higashi - Marayama, Kodaira - Hagymaya, Hanno - Agano</td>
</tr>
<tr>
<td>1980</td>
<td>Fuchu - Higashi Nachijoji</td>
</tr>
<tr>
<td>1970</td>
<td>Shii Ohashi - Sagamiono - Katase Enoshima</td>
</tr>
<tr>
<td>1960</td>
<td>Shimbataki, Shibuya - Takashima, Omachi - Futakotamagawaen, Tamagawa - Mizonokuchi</td>
</tr>
<tr>
<td>1950</td>
<td>southwest - Shingawa, koawa - Yokohama, Kaganecho, Uraga, Kanawawa - hak - Koi - Shonan - zushi</td>
</tr>
<tr>
<td>1940</td>
<td>Funabashi - Nara, Nishi-yokohama - Atsugi</td>
</tr>
<tr>
<td>1930</td>
<td>Tokyo - Omiya</td>
</tr>
<tr>
<td>1920</td>
<td>Tokyo - Omiya</td>
</tr>
<tr>
<td>1910</td>
<td>Tokyo - Omiya</td>
</tr>
<tr>
<td>1900</td>
<td>Tokyo - Omiya</td>
</tr>
<tr>
<td>1890</td>
<td>Tokyo - Omiya</td>
</tr>
</tbody>
</table>

### New Town access railways

<table>
<thead>
<tr>
<th>Year</th>
<th>Route</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>Keio-tamagawa - Tama-centre</td>
</tr>
<tr>
<td>1990</td>
<td>Kotake-mukaihara - Shinsakuradai</td>
</tr>
<tr>
<td>1980</td>
<td>Tama-centre Hashimoto</td>
</tr>
<tr>
<td>1970</td>
<td>Tama-centre Karakida</td>
</tr>
<tr>
<td>1960</td>
<td>Tama-centre - Hashimoto</td>
</tr>
<tr>
<td>1950</td>
<td>Tama-centre - Hashimoto</td>
</tr>
<tr>
<td>1940</td>
<td>Tama-centre - Hashimoto</td>
</tr>
<tr>
<td>1930</td>
<td>Tama-centre - Hashimoto</td>
</tr>
<tr>
<td>1920</td>
<td>Tama-centre - Hashimoto</td>
</tr>
<tr>
<td>1910</td>
<td>Tama-centre - Hashimoto</td>
</tr>
<tr>
<td>1900</td>
<td>Tama-centre - Hashimoto</td>
</tr>
<tr>
<td>1890</td>
<td>Tama-centre - Hashimoto</td>
</tr>
</tbody>
</table>

### Underground railways

<table>
<thead>
<tr>
<th>Year</th>
<th>Route</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>Tokyo - Omiya</td>
</tr>
<tr>
<td>1990</td>
<td>Tokyo - Omiya</td>
</tr>
<tr>
<td>1980</td>
<td>Tokyo - Omiya</td>
</tr>
<tr>
<td>1970</td>
<td>Tokyo - Omiya</td>
</tr>
<tr>
<td>1960</td>
<td>Tokyo - Omiya</td>
</tr>
<tr>
<td>1950</td>
<td>Tokyo - Omiya</td>
</tr>
<tr>
<td>1940</td>
<td>Tokyo - Omiya</td>
</tr>
<tr>
<td>1930</td>
<td>Tokyo - Omiya</td>
</tr>
<tr>
<td>1920</td>
<td>Tokyo - Omiya</td>
</tr>
<tr>
<td>1910</td>
<td>Tokyo - Omiya</td>
</tr>
<tr>
<td>1900</td>
<td>Tokyo - Omiya</td>
</tr>
<tr>
<td>1890</td>
<td>Tokyo - Omiya</td>
</tr>
</tbody>
</table>
Number of cars per household

- Saitama Pref.
- Chiba Pref.
- Kanagawa Pref.
- Tokyo Metropolitan Government Area

出典：一般財団法人自動車検査登録情報協会
国勢調査（3年前のもの）
1953 Prospectus for development of the south-west of Tokyo
1966 Den-en-toshi Line, Mizonokuchi - Nagatsuta
1977 Shin-tamagawa Line
1982 Tama-Plaza Shopping Centre
1984 Den-en-toshi Line, to Chuo-Rinkan
1986 Tokyu Cable TV
1993 Aobadai Tokyu Department store
2009 Oimachi Line, to Mizonokuchi
2010 Tama-Plaza Terrace
2019 Minamimachida Grandberry Park

58 development corporations
3,213ha
Prospectus for development of the south-west of Tokyo : 1953.1.19

• Tokyo will reach deadlock, if the population growth at current pace.
• Transfer the population of Tokyo to the newly developed area of 2 thousand ha.
• It needs transport like railways or expressway to Zama or Atsugi from Tamagawa via Eda and Tsuruma.
• The area will be promoted by developing at least ten “Garden Cities” along Atsugi-Oyama Street.
Prospectus for development of the south-west of Tokyo
Land re-adjustment method

【Before readjustment】

Mr. B → Mr. A → Mr. C → Mr. D → Mr. E → Mr. F

Land replotting

Reduction of site area

【After readjustment】

Mr. B → Mr. A → Mr. C

Public land
(land for road, park, school)

Reserve
(land to be sold for development work expense)
Land re-adjustment method

• The method is a way of property development, the TOD developer do not buy whole land of the area, but progress projects under partnership with landlords by organizing development corporations.

• This results in “communication platform” between the TOD developer and landlords even after the development; i.e. transforming land use from rural to urban.

• This is essential infrastructure in the phase of “management” after “development”.

Land Readjustment Project (aerial photos)

【 Before readjustment 】

【 After readjustment 】
Tama Garden City: around 1970
Yokohama City Underground Railway
Blue Line Shin-yokohama – Azamino 1993
Land re-adjustment projects of Tama Garden City

1st Block
- 野川第一
- 有馬第一
- 土橋
- 宮崎
- 梶ヶ谷第一
- 有馬第二
- 小台
- 神木
- 北山田第一
- 犬蔵
- 荏田第一
- 元石川第一
- 市ヶ尾第一
- 下市ヶ尾第一
- 元石川第二
- 元石川大場
- 嵯峨山第一
- 嵯峨山第二
- 早野
- 元石川第三
- 小黒
- 市ヶ尾川和
- 市ヶ尾第二
- 荏子田
- 保木
- 池尻
- 富士塚
- 泉田向
- 黒須田
- 大場第一
- 赤田
- 大場第二
- 大場第三
- 関耕地
- 恩田第一
- 恩田第二
- 下谷本西八朔
- 恩田第三
- 下谷本第二
- 恩田第四
- 西八朔第二
- 上谷本第一
- 成合
- 上谷本第二
- 奈良恩田
- 上谷本第三
- 恩田第五
- 鴨志田第二
- 上恩田
- 小川第一
- 大和市北部第一
- 小川第二
- 下長津田
- 南中野南部
- 南中野南部
- 南中野南部
- 南中野南部
- 三保天神前
- 大和市北部
- 大和市松の久保
Area of land re-adjustment development corporations in business (ha)

- 1st Block
- 2nd Block
- 3rd Block
- 4th Block

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Block</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd Block</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3rd Block</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th Block</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Population growth of the Tokyo Metropolitan Area

TMA: Tokyo, Kanagawa, Saitama, Chiba

Fivefold Increase for 90 years
Tama-Plaza : around 1965
Tama-Plaza : around 2010
North-south axis station

Sakaigawa River

Park

Comerce

Station

North-south axis
Minamimachida Project

Rt. 16

Den-en-toshi Line

North gate

South gate

Tsuruma Park

Grandberry Mall
渋谷

Shibuya Hikarie
Shibuya Scramble Square
Shibuya Stream
Shibuya FUKURAS
Sakuragaokaguchi Area*

*City Planning proposal has been submitted for Sakuragaoka Area
Shibuya in 1960: a sub-centre terminal
New Year Count-down : the Global SHIBUYA
Railway project: mutual direct services between Fukutoshin Line and Toyoko Line
Scheme to progress TOD projects of Urban Regeneration/Terminal

Communication Platform

Academics <-> Local Community
Government <-> Private Sector
Shibuya HIKARIE: opened in April 2012

- **Land**: 9,640 m²
- **Floorspace**: 144 thousand m²
  - **Commerce**: 32 thousand m²
  - **Office**: 50 thousand m²
  - **Culture**: 24 thousand m²
  - **Others**: 38 thousand m²
- **34F above ground, 4F underground**
- **Height**: 182.5 m

※ **Bunkakaikan**
- **Land**: 5,103 m²
- **Floorspace**: 30 thousand m²
“Urban Core”
Railway passengers naturally go into the department store after getting off trains. In order to encourage passengers to get off, the new building and town needs to be more attractive.
Shibuya Stream: opened in September 2018

- Land: 7,110 m²
- Floorspace: 118 thousand m²
- Commerce
- Office
- Hotel
- Hall
- 35F underground 4F
- Height: 179.9m
Shibuya Stream

① Shibuya river from Inaribashi Bridge

② Plaza next to Konnobashi Bridge

Plaza next to Konnobashi Bridge
Shibuya Scramble Square

Land: 15,300 m²
Floorspace:
  East tower 181 thousand m²
  Total 276 thousand m²
47F, underground 7F
Height 230m (East Tower)
Open: East tower November 2019
  Central · West 2027
Usage: Office, Commerce,
  Observatory, Industry-University Exchange, etc.
A Café at an underground plaza
Futako-tamagawa RISE

Office

<table>
<thead>
<tr>
<th>1st stage leasehold</th>
<th>20 thousand m²</th>
<th>Standard floor</th>
<th>1.9 thousand m²</th>
</tr>
</thead>
<tbody>
<tr>
<td>2nd stage leasehold</td>
<td>87 thousand m²</td>
<td>Standard floor</td>
<td>2.4 thousand m²</td>
</tr>
</tbody>
</table>

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Commerce

<table>
<thead>
<tr>
<th>Town Front, River Front</th>
<th>27 thousand m²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Station Market</td>
<td>4.6 thousand m²</td>
</tr>
<tr>
<td>Terrace Market</td>
<td>11 thousand m²</td>
</tr>
</tbody>
</table>

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |

Residence

| 5 buildings (High-rise 3, Low-rise 2) | Number of residents 1,033 |
**Overall Layout**

- Futako-Tamagawa Park
- Futako-Tamagawa RISE

**Scale of Development**

<table>
<thead>
<tr>
<th></th>
<th>First Phase</th>
<th>Railway District</th>
<th>Second Phase</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Block I-a</td>
<td>Block I-b</td>
<td>Block II-b</td>
</tr>
<tr>
<td>Construction Area</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Floor Area</td>
<td>17,200m²</td>
<td>106,700m²</td>
<td>9,400m²</td>
</tr>
<tr>
<td>Intended Use</td>
<td>Stores</td>
<td>Stores, Offices, Parking Lots, Bicycle Parking Lots</td>
<td>Stores, Residences, Parking Lots, Bicycle Parking Lots</td>
</tr>
</tbody>
</table>
Futako-Tamagawa RISE

■ Overall Layout

■ Scale of Development

<table>
<thead>
<tr>
<th></th>
<th>First Phase</th>
<th>Railway District</th>
<th>Second Phase</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Block I-a</td>
<td>Block I-b</td>
<td>Block II-a</td>
</tr>
<tr>
<td>Construction Area</td>
<td>Approx. 8.1ha</td>
<td>Approx. 0.9ha</td>
<td>Approx. 3.1ha</td>
</tr>
<tr>
<td>Floor Area</td>
<td>17,200m²</td>
<td>106,700m²</td>
<td>9,400m²</td>
</tr>
<tr>
<td></td>
<td>133,300m²</td>
<td>5,700m²</td>
<td>157,000m²</td>
</tr>
<tr>
<td>Intended Use</td>
<td>Stores</td>
<td>Stores, Offices, Parking Lots, Bicycle Parking Lots</td>
<td>Stores, Residences, Parking Lots</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Stores, Residences, Parking Lots, Bicycle Parking Lots</td>
<td>Stores, Residences, Parking Lots, Bicycle Parking Lots</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Stores, Offices, Hotels, Movie Theaters, Fitness Centers, Studios/Performance Halls, Parking Lots, Bicycle Parking Lots</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
"Ensen" population and number of passengers of major private railways (1990 - 2015)

- Major Private Railways: Tobu, Seibu, Keisei, Keio, Odakyu, Tokyo, Keikyu, Tokyo Metro, Sotetsu, Meitetsu, Kintetsu, Nankai, Keihan, Hankyu, Hanshin, Nishitetsu
The number of passengers of major private railway companies by month – percentage on 2019 -

1/Oct/2019 Consumption tax revision

Source: Fiscal reports
Office vacancy

The Lehman Shock

https://www.e-miki.com/market/tokyo/
Before COVID-19

Commercial Facilities

"Ensen" Commercial Facilities

Commercial Facilities

Commercial Facilities

Commuting

| Center |

Residences

During COVID-19

Commercial Facilities

"Ensen" Commercial Facilities

Commercial Facilities

Commercial Facilities

Commuting

| Center |

Residences / Working from Home

After COVID-19

Sustainable Community ("Green Peas" Structure)

Sustainable

Sustainable

Sustainable

Sustainable

Sustainable

Interaction

Residences / Working from Home

| Sustainable Center |
"Green Peas" Structure

Build linear “Ensen” identities along railway lines

Develop major stations and surrounding areas

Build alliances among the three core businesses along railways, as well as with local communities and governments

Develop effective measures by classifying areas along railway lines according to the characteristics of residents, passengers, etc.

[Den-en-toshi Area] Takatsu, Miyamae, Aoba, Tsuzuki, Midori, etc.
Characteristics: An area that is currently growing but is expected to rapidly age in the future
Strategy: Make the area more convenient by using Tokyu assets to strengthen various functions around stations

[Shibuya/Yamanote Area] Shibuya, Setagaya, Meguro
Characteristics: An area with an ideal demographic balance (increase/decrease as well as migration)
Strategy: Strengthen the area’s brand value as one of the leading districts along railway lines

[Toyoko Area] Nakahara, Kohoku, Kanagawa, Nishi, Naka
Characteristics: A mature area where the population is slowly aging
Strategy: Stimulate the demand for rail by promoting the Yokohama area

[Ikegami/Tamagawa Area] Shinagawa, Ota
Characteristics: A very mature area that ought to head towards urban renewal
Strategy: Revitalize the area by attracting parents raising young children

(https://www.tokyu.co.jp/file/050328_1.pdf)
TOD, the Compact City Policy: with/after COVID 19, Disaster/Pandemic ready

High Rise but optimising the density

Area Management
Larger Scale, using DX

Compact City
Station

Disaster vulnerable
TOD of the “New Normal” era with/after COVID 19

Large Scale Area Management
Bridging lines, railway companies

Large Scale Area Management
Bridging municipalities

Large Scale Area Management
Bridging stations, “the Green Peas” Structure

Axis: River, Road

Municipal boundary

Green field

Residence

Commerce, Office

Railway

Station

Station

Station
Sustainable Community

- Carbon neutral, Circular economy -

Scope 3, taken initiative by railway/TOD companies

Scope 1: Direct emission by fuel etc.
Scope 2: Emission by energy suppliers
Scope 3: Total emission from the whole value chain
Criteria of the “Sustainable” Town

• **Resilient community of minimizing environmental Load**
  Carbon neutrality, Disaster/pandemic ready, Circular economy, Local production/consumption

• **Guarantee moderate “Sokosoko” Quality of Life, Qol**
  Safety, Security, Health, Income, Diversity and inclusion, Solving social issues

• **Feel moderate “Sokosoko” economic growth**
  Innovation, Entrepreneurship, Social enterprise, Creative work, Mutual aid, Sharing

• **Get the most out of the first-end technology**
  Society 5.0, ICT, DX, Big data utilization, Smart city, Mobility, MaaS, Caas

• **Respect history and culture**
  Area management of axes and bases, Liberal arts, Walkable urban space

*Sokosoko = to know one has enough* by Lao-tse, a philosopher about 2,500 years ago in China
SDGs targets

1. No Poverty
2. Zero Hunger
3. Good Health and Well-Being
4. Quality Education
5. Gender Equality
6. Clean Water and Sanitation
7. Affordable and Clean Energy
8. Decent Work and Economic Growth
9. Industry, Innovation and Infrastructure
10. Reduced Inequalities
11. Sustainable Cities and Communities
12. Responsible Consumption and Production
13. Climate Action
14. Life Below Water
15. Life on Land
16. Peace, Justice and Strong Institutions
17. Partnership
Criteria of the “Sustainable” Town

- Resilient community of minimizing environmental Load
  Carbon neutrality, Disaster/pandemic ready, Circular economy, Local production/consumption

- Guarantee moderate “Sokosoko” Quality of Life, Qol
  Safety, Security, Health, Income, Diversity and inclusion, Solving social issues

- Feel moderate “Sokosoko” economic growth
  Innovation, Entrepreneurship, Social enterprise, Creative work, Mutual aid, Sharing

- Get the most out of the first-end technology
  Society 5.0, ICT, DX, Big data utilization, Smart city, Mobility, MaaS, Caas

- Respect history and culture
  Area management of axes and bases, Liberal arts, Walkable urban space

1. No Poverty
2. Zero Hunger
3. Good Health and Well-Being
4. Quality Education
5. Gender Equality
6. Clean Water and Sanitation
7. Affordable and Clean Energy
8. Decent Work and Economic Growth
9. Industry, Innovation and Infrastructure
10. Reduced Inequalities
11. Sustainable Cities and Communities
12. Responsible Consumption and Production
13. Climate Action
14. Life Below Water
15. Life on Land
16. Peace, Justice and Strong Institutions
17. Partnership
The Sustainable Den-en-toshi TOD Model
- The SDT Model -
Station up-grade

Development
Public private partnership

unify
Area Management

Station up-grade

Development
Public private partnership

unify

Internalize external impacts
Sustainable Development
Sustainable Den-en-toshi TOD Model

- From Shibuya, centres; i.e. Sangenjaya, Futakotamagawa, Mizonokuchi, Saginuma, Tama-plaza, Aobadai, Minamimachida GBP, are located on the axis.
- Can efficiently move by a railway, Den-en-toshi Line.
- Developed integrally stations with symbolic design and surrounding premises/infrastructure, including various urban functions at centres.
- Schemes of the “Area Management” are built to internalise external impacts around centres.
- “Places” of exchanging various people in the “Ensen” area produce innovations which enable make rich QoL.
- Total coordination between urban functions and mobility leads to the carbon neutral.
- Progress towards local production/consumption of energy and foods
- Progress towards design-oriented town development/management which respect history and culture.
- Schemes of i.e. CSV, e.g. Creating Shared Value, encourage partnership between local communities and companies to create value.
Other Cities, including overseas

Sustainable Garden City Model

Tama Garden City

Shibuya

Other “Ensen”s

Other “Ensen”s