Shinagawa Smart City Studio
2019/12/26 Final Presentation  Fujie, Nishii, Todesco, Tokimaru

1 適地の背景

Background Information of the Site

Minato City Masterplan
港区まちづくりマスタープラン
This area is positioned as one of the center cores of Minato City.
Shinagawa Station is expected to be a new international gateway.

Land Use Regulation 土地利用規制
A large area is designated as quasi-industrial districts.
In the port area, commercial buildings unrelated to port activities is prohibited.

Machizukuri Guideline for Shinagawa
品川駅・田町駅周辺まちづくりガイドライン
- future visions
  - International business city
  - Cultural city with people abroad
  - Environmental friendly city

The height of the buildings is advised to be under 50 meter because of the wind route. As for the buildings over 50 meters, the distance between buildings is suggested to be wide.
Outline of the Studio in UTokyo

Participants in the project: Plan • Policy Suggestion (UTokyo) / Urban Design (Georgia Tech) / Landscape design / Data Analysis (NIES)

Coordinating these actors is one of the roles of the UTokyo Studio. This studio aims to facilitate interaction among and within teams, enabling a comprehensive design process.

Concept

① Take advantage of the situation unique to Shinagawa
品川独自の状況をいかす
(Location, History, Infrastructure, Network...)
② Values generally required in urban development
都市開発で一般的に求められること
Social Justice
Resilience
Environment climate change

Proposal

Translation” into urban space is required:
Walkable city, fair access to open space, public transportation, etc.

Proposal 1

Social Justice • ①
Resilience • ②
Evacuatability,
Inland floods prevention, etc.

Proposal 2

Current Analysis

Future Forecasts

• City planning guideline
• Land use
(current situation / regulation)
• Population / Number of workers
• Stakeholders
(Land or building owners)
• Height of buildings

Spatial Plan for the Entire District

Redevelopment Area (with options)

Takanawa Gateway Station
Canal

Shinagawa Station

Options:
0, 1, 2, ...

Options:
0, 1, 2, ...

Options:
0, 1, 2, ...

Options:
0, 1, 2, ...

Environmental Simulation

Trade-off

Development specifications

FAR • Height • Pop. • Workers

Which Options?

Proposal 3

Plans for Redevelopment Area

Based on analysis by NIES, UTokyo offers comprehensive judgment

What kind of intervention is possible?

Proposal 2

Policy for 4 redevelopment areas

4 つの再開発地区の方針

Public land such as sewage plant
Areas inside the redevelopment sites

What will happen without significant intervention?

Proposal 1

Structural Proposal for Planning area

広域 / 全体の骨格の提案

Public spaces such as waterways and passageways
Areas outside the redevelopment sites
### Site Analysis on Land Use and Ownership

#### Land Use 土地利用
- Governmental use (purple)
  - university, meat market
- Commercial use (orange)
  - focus around Shinagawa station
- Residential use (yellow)
  - increasing along the canal
- Industrial and logistic use (blue)
  - focus on the eastern island

#### Height of the buildings 建物高さ
- Many high apartment buildings located on the whole area (31F-)
- High office buildings located on east and south of Shinagawa station
- Floor area satisfaction ratio in public-owned areas are low
- Opportunities for redevelopment

#### Risk of disasters 災害リスク
- In the whole area, risk of Tsunami is not high. Risk of liquefaction is comparatively high
- Concerns of damage about infrastructure

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#### Owners of office buildings ビル所有者
- NTT group owns many buildings
- NTTグループが多くのビルを所有
- Their smart technologies may be available
- NTT等のスマート技術が利用できる可能性

#### Tokyo Central Meat Market 食肉市場
- The only meat market in Tokyo
- Lots of buildings
- Center building is 17 years old (9 floors)
- Other buildings are over 25 years old (refrigerator, slaughter, facility etc.)
- Potential for relocation 移転の可能性

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#### Stakeholders ステークホルダー
- Shinagawa Pier 品川埠頭
  - Domestic Bulk cargo (paper, car, used paper)
  - No regular schedule 定期船無
  - 76 regular ships per month (Korea, China, etc)
- Tokyo University of Marine Science and Technology 東京海洋大
  - Paths to Marine Science and Technology
  - Positive to get financial help for redevelopment from private organizations
- Campus Masterplan (2015)

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#### Tsunami inundation 津波浸水
- Hazard map by Minato Ward
**Vision of the Planning Area**

**Our concept**

**What is Smart City?**

- City
  - technology
  - Energy
  - Resilience
  - Comfort
  - Economy
  - Mobility
  - Convenience

**Our concept**

- Shinagawa becomes a new gate
- Axis of Time: Tradition × Innovation
  - A place known both for its historical and contemporary relevance as a hub, Shinagawa is the gateway to different worlds. Connected to Haneda Airport and the upcoming Linear Train, promoting a scenery that combines the traditional Edo-era post-town and the cutting-edge smart transformation happening in Japan.

**Axis of Geology: Connection between Land and Sea**

- Embraced by the Musashino Plateau to the west and Tokyo Bay to the east, the region was increased to accommodate docks and canals on the coast. These transformations made Shinagawa a unique hub: it connects land, sky, and sea.

**Social Justice / Resilience / Environment**

- In general, social justice, resilience, and environment / climate change are required for urban redevelopment.
- In addition to the concepts unique to Shinagawa, we think of many ways to adopt these three fundamental ideas to the site.

**Land use vision**

- New smart mobility route
- Green pathways

**Smart working zone**

**Smart living zone**

**Smart logistics & industry zone**

**Smart redevelopment zone**

**Main traffic route**

**Gradual redevelopment zone**

**The redevelopment of each of the four districts follow four main smart domains:**

**Smart working**

An environment that responds swiftly to change, energy efficiency, environment protection and new business models. Implementing shared offices to realize new and diverse work styles goes in that direction.

**Smart living**

Providing a comfortable, safe and convenient living environment for all people, considering special needs and demands of residents.

**Smart logistics**

Allocating the logistics functions in the southern part of the coastal area to guarantee the smooth operation that promotes comfort without any burden to everyday life (traffic, noise, delays).

**New smart mobility route**

Avoiding major traffic routes, new mobility options will be prioritized in the connection between the two stations and related areas, making Shinagawa a charming place for business and social activities.

**Green pathways**

Connecting the four zones and the promenades along the canals to create walking courses and pleasant scenarios with greenery. To improve temperature, air quality and wind currents, green paths and wind corridors between the plateau and the coast.

**Mobility policy**

**Near Future**

**Far Future**

- general vehicles not prohibited
- new mobility only
- general vehicles prohibited

"e-Palette" ©TOYOTA

Area vision by “Shinagawa Smart City pilot”, July 2019.

*“Shinagawa Smart City pilot* was designed in July 2019. Their concepts and designs (green loop, wind corridor, smart mobility, ship transport etc.) were utilized.

→ コンセプトを継承
5. Options Considered in Environmental Simulation

**a. Sewage plant** 水処理場

To run the simulation and determine the optimal redevelopment plan, we created building arrangement options for each site.

- **a1** Wooden houses and container
- **a2** Office buildings
- **a3** Large office buildings

Differences in FAR and application were for the blocks in front of the East side of Takanawa Gateway station, which should include greenery and public entertainment spaces. Suggestions range from overall domestic (a1), business office buildings (a2) and large office-mail building (a3).

**b. Meat market** 食肉市場

This region’s suggestions vary on the redevelopment of the meat market complex area, from remodeling it to fit half of the previous area (b1), leaving only its business building intact (b2) and completely reallocating the market to a different area and developing on it.

- **b1** Partial redevelopment (south)
- **b2** Meat market HQ, overall redevelopment
- **b3** Redevelopment of the whole area

D1 includes creative work spaces and shared offices meant for new forms of business, while d3 would make the area a co-working and residential area, given the new Kamatsu line would include a station in the western side. d2 is includes aspects of both approaches, including work spaces of d1, residential buildings from d3, and parks, a hotel and a cruise terminal that connects to the Tokyo Bay area.

**c. TUMST 海洋大学**

- **c1** Partial redevelopment
- **c2** Whole redevelopment

Criteria for choosing the sites

- Low FAR
- Owned by public
- Relocation may be possible

**d. Port** 品川埠頭

- **d1** Experimental area
- **d2** Hotel & Park
- **d3** Co-working & Residence
6 Proposal

Choosing options | オプションの選択

- **Minding trade-off of economic and environment**, we chose options considering whole area.
- Chosen options reflect some elements consisted for not-chosen options.
- In order to balance the trade-offs, we considered various factors such as economic and environmental aspects.

a Sewage plant | 水処理場

- **Wooden houses inheriting the tradition of Shinsengawa post town**
- **Tall and low trees increase green coverage, temperature adjustment and provide lean air**
- **Water flow from Musasihono**
- **Set up solar panels** Decrease energy consumption / Providing energy at times of emergency
- **Green infrastructures along the canal**
- **Water flows from the road to the canal**

b Meat market | 食肉市場

- **Installation of a rooftop farm** auto sufficient food during a disaster
- **Setting solar panels** Decrease energy consumption / Providing energy at times of emergency
- **Get in touch with the office to get be the way from north Restaurant area to the site**

Legend:
- **Social Justice**
- **Axis of Time**
- **Axis of Geology**
- **Environment**

Whole plan

- **Use sunlight, wind power, waste incineration, etc.** for power generation.
- **Reduce greenhouse gases and secure energy supply in the event of a disaster**
- **Set a line exclusively for smart mobility; greening the smart mobility line**
- **Widening walking path and greenery**

Port | 品川埠頭

- **Developing the Marine passenger terminal and Multiple ways of transportation**
- **Make the pavements permeable and reduce sewage load**
- **Provide the entry of general cars and provides many types of services with next-generation mobility**

University | 東京海洋大学

- **Prohibit passing traffic through lanes at both ends of the road**
- **Improving pedestrian comfort**
- **Make the pavement permeable and reduce sewage load**
- **Planting alleviates the heat island phenomenon**
- **Prohibits the entry of general cars and provides many types of services with next-generation mobility**