CASE STUDY

Yoyogi 3-chome, Shibuya, Tokyo, Japan

1. INTRODUCTION
2. CHARACTER
3. BACKGROUND
4. ZONING ANALYSIS
5. APPENDIX

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DATE
02/15/2021

Source: Apple Maps
2.1] FIGURE-GROUND RELATIONS

Same neighborhood, different ‘block’ patterns

Public housing constructed after WWII has more open space compared to building coverage.

Private homes with more compact building footprints and they are densely located to each other.

Building footprints follow non-orthogonal street networks.

2.2] BUILDING-STREET RELATIONS

Building-street relations along main streets (boulevards)

- Building heights: 4-storey buildings to 15-storey high-rise buildings
- Uses: commercial, residential, mixed uses
- Street widths: approx. 15 meters (around 50 feet) including sidewalk and roadways
- Buildings closer to CBD tend to be taller

Source: Google Earth
Building-street relations along narrow streets
- Building heights: 1-storey to 8-storey buildings
- Uses: residential, mixed uses
- Street widths: approx. 3.5 meters (around 11.5 feet)

Main Streets
- High vehicular volume, higher speed limit (40 km/h)
- Protected sidewalks for pedestrian, but bike lane located on the roadway
- Mixed mid-to-high-rise facades facing street (commercial, office, tall apartments)

Narrow Street - Active Uses
- Limited vehicular volume, lower speed limit (~20 km/h)
- Pedestrian lanes on the road
- Vegetation between road and buildings (on private land)
- Active ground floor uses (shops, stores, amenities, housing, small offices)

Narrow Street - Residential
- Limited vehicular volume
- No road markings
- Limited vegetation
- Surrounded by primarily houses and apartments
The development of transit in this area in the early 20th century makes Yoyogi a dense residential area. Today Yoyogi 3-chome is well connected by transit:
- 4 rail stations (opening year)
  - Yoyogi Station (1906)
  - Shinjuku Station (1915)
  - South Shinjuku Station (1927)
  - Sangubashi Station (1927)
- 9 bus stations
  - All located on main streets

North to Yoyogi, Shinjuku’s redevelopment started in the 1960s and the former site of Yodobashi water purification plant now sits the new CBD.

While other parts of the Yoyogi neighborhood experienced redevelopment because of their proximity to transit, the Yoyogi 3-chome has remained largely unchanged for more than 40 years as a residential area.

### Household by Housing Type (2015)

The majority of households in our study area are living in multi-family houses.

### Single Family House

Although located in the Shibuya ward of Tokyo, Yoyogi is more close to the Shinjuku station area, the busiest transit hub in the world.

Before 1889, our study area was formerly Yoyogi Village, which was incorporated under several town and village jurisdictions until finally merged into today’s Tokyo city in 1932.

The neighborhood is near to two large municipal parks; Yoyogi Park and Shinjuku Gyoen. Part of today’s Yoyogi park once served as an aircraft test field and parade ground, later occupied by “Washington Heights,” a U.S. Military housing complex between 1945 and 1964. It was returned to the Japanese government and transformed to the 1964 Tokyo Olympics village. The Shinjuku Gyoen, as a former royal garden, wasn’t open to the public until 1949.

Standardized zoning rules nationally, different distribution at the local level

- Zoning in Japan is controlled at the national level under the 1968 City Planning Act, which designated “City Planning Areas.” This national policy was established in response to emerging issues of urbanization post-WWII.
- Main features of the 1968 City Planning Act include: (i) effective land-use control, (ii) functional city planning areas, (iii) delegation of power to local governments.

Efforts towards decentralization and participatory planning

- ‘District Planning System’ was introduced in 1980, allowing municipal governments to develop city plans according to comprehensive plans.
- ‘Special districts’ introduced in 1992, requiring upper floors of buildings in all commercial districts to be reserved for residential uses.
- The concept of hierarchical master plans was established in 1992 (city, regional municipality, and prefecture levels).
Land use zones in Shibuya Ward, Tokyo

<table>
<thead>
<tr>
<th>Land Use Zones</th>
<th>Building Coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category I exclusively low-rise residential zone</td>
<td>60%</td>
</tr>
<tr>
<td>Category II exclusively low-rise residential zone</td>
<td>60%</td>
</tr>
<tr>
<td>Category I mid/high-rise oriented residential zone</td>
<td>60%</td>
</tr>
<tr>
<td>Category II mid/high-rise oriented residential zone</td>
<td>60%</td>
</tr>
<tr>
<td>Category I residential zone</td>
<td>60%</td>
</tr>
<tr>
<td>Quasi residential zone</td>
<td>60%</td>
</tr>
<tr>
<td>Neighborhood commercial zone</td>
<td>80%</td>
</tr>
<tr>
<td>Commercial zone</td>
<td>80%</td>
</tr>
<tr>
<td>Quasi-industrial zone</td>
<td>80%</td>
</tr>
</tbody>
</table>

Height limit:
- Category I exclusively low-rise residential zone: 10m
- Category II exclusively low-rise residential zone: 15m

Source: Shibuya City City Planning Division City Planning Section (2020).

SUMMARY OF ZONING REGULATIONS

(See Appendix for supporting research)

<table>
<thead>
<tr>
<th>1 ZONING DISTRICTS</th>
<th>Category II mid/high-rise oriented residential zone</th>
<th>Category II residential zone</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 LAND USE</td>
<td>Residential</td>
<td>Residential</td>
</tr>
<tr>
<td>3 FAR</td>
<td>300%</td>
<td>400%</td>
</tr>
<tr>
<td>4 SITE COVERAGE</td>
<td>60%</td>
<td>60%</td>
</tr>
<tr>
<td>5 SETBACKS</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>6 HEIGHT</td>
<td>Max: 30m</td>
<td>Max: 40m</td>
</tr>
</tbody>
</table>

NOTES:
- Permitted land uses in each zoning district
- Maximum permitted Floor Area Ratio
- Maximum permitted site coverage
- No setback requirements
- Maximum height controls

OTHER NOTABLE ZONING REGULATIONS

<table>
<thead>
<tr>
<th>7 SLANT PLANE</th>
<th>YES</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 SHADOW RESTRICTION</td>
<td>YES</td>
<td>YES</td>
</tr>
</tbody>
</table>

Slant Plane defines the building envelope based on the road, the adjacent lot, and the lot on the north side, providing ventilation access and ease of oppression to the surrounding area.

Limiting maximum hours of shadow on neighboring lots and adjacent areas.
12 Zoning Districts

Control of Building Uses by Land Use Zones

Strict Zoning Districts & Liberal Land Use
The 12 zoning districts in Japan were developed based on the level of nuisance from residential to commercial to industrial zones. With the ‘maximum allowable nuisance’ approach, low nuisance uses are allowed in other zones. As a result, mixed uses can be found across zones.

As-of-right System of Permitting
A discretionary review process is unnecessary if a project complies with all applicable zoning regulations.

Category II mid/high-rise oriented residential zone
Designed for medium to high rise residential buildings. Permitted buildings include hospitals, university buildings, shops and office buildings.

<table>
<thead>
<tr>
<th>Zoning district</th>
<th>Land use</th>
<th>FAR</th>
<th>Site coverage</th>
<th>Setback</th>
<th>Height</th>
<th>Slant plane</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category II mid/high-rise oriented</td>
<td>Residential</td>
<td>300%</td>
<td>60%</td>
<td>N/A</td>
<td>Max: 30m</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Maximum Floor Area Ratio of 300 (%)
30m Category 3 height area (maximum height + slant plane control)

Shadow restrictions:
- Maximum of 4 hours of shadows allowed within 10 meters from site boundary
- Maximum of 2.5 hours of shadows allowed within 5 meters from site boundary

Shibuya’s Shadow Restriction diagram

The boundary line on the opposite side of the front road or the boundary line of the adjacent land.
(Source: Shibuya City Office, 2018, redraw by author)

For zoning other than “exclusively low-rise residential,” shadow restrictions are measured at the 4m elevation, because most of the ground floor are used for shops or garages.
(Source: Shibuya City Office, n.d.)
**Case Study:** Yoyogi 3-chome, Shibuya, Tokyo  
**Section:** 4) Zoning Analysis  
**Title:** 4.3) Zoning Explained

### Category II mid/high-rise oriented residential zone

Designated for medium to high rise residential buildings. Permitted buildings include hospitals, university buildings, shops and office buildings.

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<th>Setback</th>
<th>Height</th>
<th>Slant plane</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category II mid/high-rise oriented residential zone</td>
<td>Residential</td>
<td>300%</td>
<td>60%</td>
<td>N/A</td>
<td>Max. 30m</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**Slant Plane (Height Control)**

The boundary line on the opposite side of the front road or the boundary line of the adjacent land.

(Source: Shibuya City Office, 2016, redraw by author)

**Shadow restrictions**

Under Category II mid/high-rise oriented residential zone, slant plane requirements and shadow restrictions shape the building form to ensure unobstructed space for light and ventilation between buildings. In this example, building height is controlled indirectly through the slant plane regulations, resulting in an angled facade on the south side. For the north facing facade, the application of both slant plane and shadow restrictions results in the sloped north-facing facade for the building portion above 10 meters (highlighted in yellow dashed lines).

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### Category II residential zone

This zone is designated to mainly protect the residential environment. The permitted buildings include shops, offices and hotel buildings as well as buildings with a karaoke box.

<table>
<thead>
<tr>
<th>Zoning district</th>
<th>Land use</th>
<th>FAR</th>
<th>Site coverage</th>
<th>Setback</th>
<th>Height</th>
<th>Slant plane</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category II residential zone</td>
<td>Residential</td>
<td>400%</td>
<td>60%</td>
<td>N/A</td>
<td>40m</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**Height Control (Direct)**

Category II residential zone has a set of simpler requirements. First, building height controlled directly by maximum height of 40m instead of through slant plane requirements. Second, this land use zone doesn’t designate shadow restrictions. This results in north-facing flat building facade, rather than sloped or angled facade above certain heights.

(Source: Google Maps, Google Earth  
Source: Shibuya City Office (2018))
Pros

- Mix of uses in most zoning districts. Using maximum allowable nuisance approach to zoning; less restrictive than typical zoning regulations that exclusively allow specific uses. This approach allows for more housing supply, connectivity between people who live and work as well as lively neighborhoods.

- Ensuring sunlight access by combining prescriptive zoning and performance-based zoning approaches. The prescriptive slant plane regulations ensure predictability of shadow effects while the performance-based sunlight control regulations give the flexibility to the built form.

- Zoning rules guided at the national level but local governments have planning power to create special district zones. This makes enforcement of zoning effective and efficient while allowing municipalities some flexibility to a certain extent.

Cons

- National zoning code lacks the flexibility to local context. Zoning and land use system didn’t respond to unique local characteristics, but to a broader national interest.

- Zoning doesn’t consider aspects of affordable housing. No affordable housing requirements in the zoning text and map.

- No minimum FAR requirements promote sprawl. The current zoning in Shibuya and other areas in Tokyo doesn’t exclude the low-rise single family housing even within walking distance from transit hubs.

- Open Spaces and Green Areas are not part of land zoning in cities. No land use reserved for parks or open spaces in urban areas.

Recommendations

1. Integrate land use categories for parks, green corridors, and open space into zoning to promote environmental sustainability and community wellbeing.

2. Create FAR incentive programs within walking distance from transit stations to enhance compact growth and prevent sprawl.

3. Include affordable housing requirements in residential zoning up for a more inclusive neighborhood.

5A] APPENDIX - BIBLIOGRAPHY

1] CASE STUDY INTRODUCTION


2] CHARACTER


3] BACKGROUND


5B] APPENDIX


Practice: Residential Planning in Global Cities | Columbia GSSP - PLAN4621 2021 | Kate Dunham