

6 TOKYO

CASE STUDY

**Yoyogi 3-chome, Shibuya,
Tokyo, Japan**
代々木三丁目, 渋谷区, 東京都, 日本

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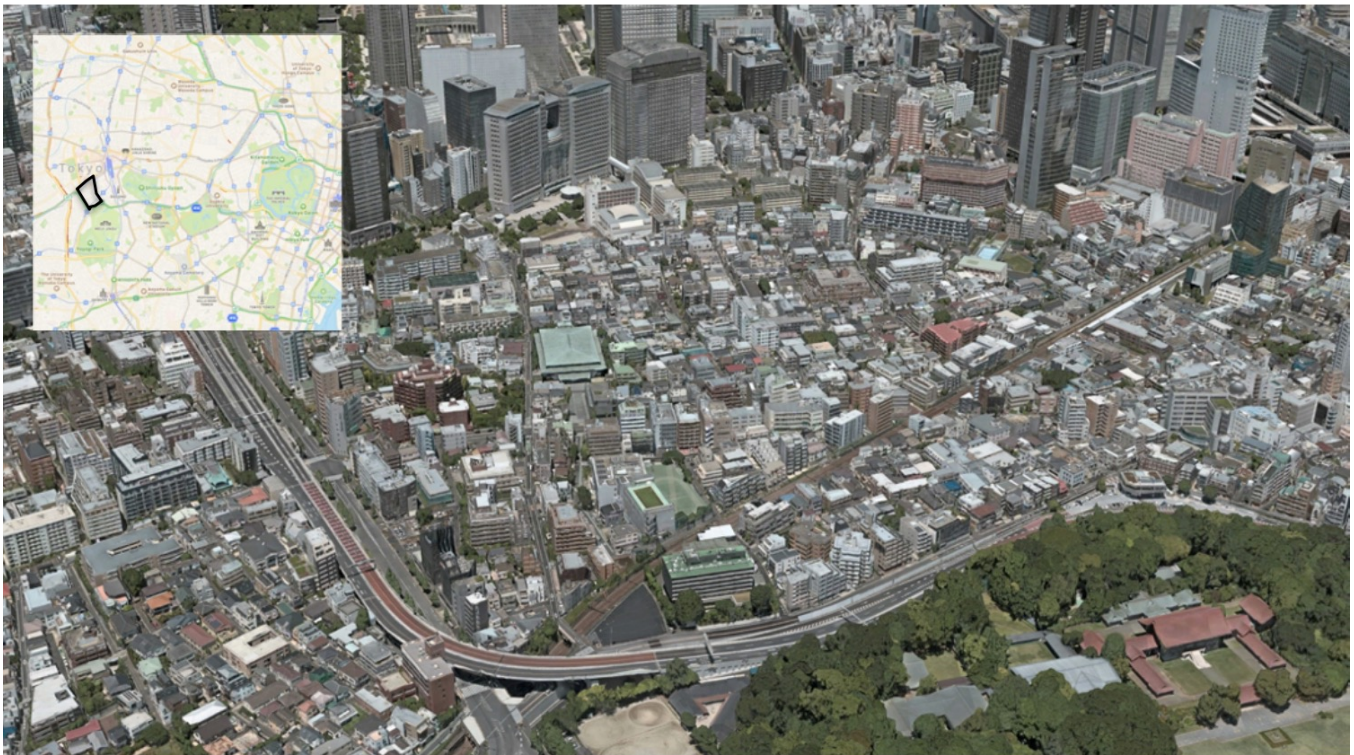
1. INTRODUCTION
2. CHARACTER
3. BACKGROUND
4. ZONING ANALYSIS
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TEAM

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DATE

02/15/2021



Source: Apple Maps

CASE STUDY

Yoyogi 3-chome, Shibuya, Tokyo

SECTION

1] CASE STUDY INTRODUCTION

TITLE

1.1] LOCATION AND OVERVIEW

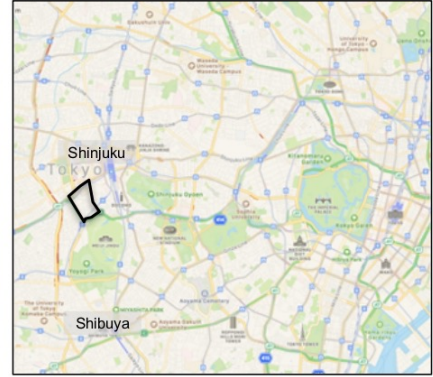
STUDY AREA



NEIGHBORHOOD



CITY



Source: Apple Maps, Google Earth

CASE STUDY

Yoyogi 3-chome, Shibuya, Tokyo

SECTION

1] CASE STUDY INTRODUCTION

TITLE

1.2] FOCUS AREA



Source: Google Earth



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



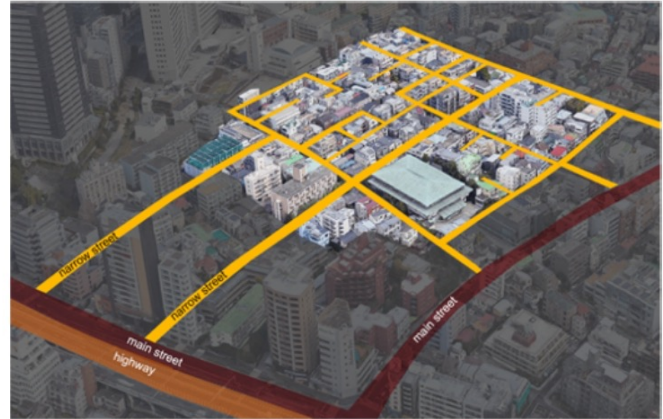
Source: Google Earth

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



200m



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)



200m

**Main Streets**

- High vehicular volume, higher speed limit (40 kmh)
- 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 kmh)
- 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

Source: Google Earth



Source: Geospatial Information Authority of Japan.

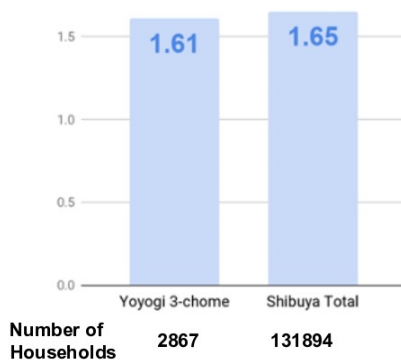
The development of transit in this area in the early 20th century makes Yoyogi a dense residential area. Today Yoyogi 3-chome is **well connected by transit**:

- **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

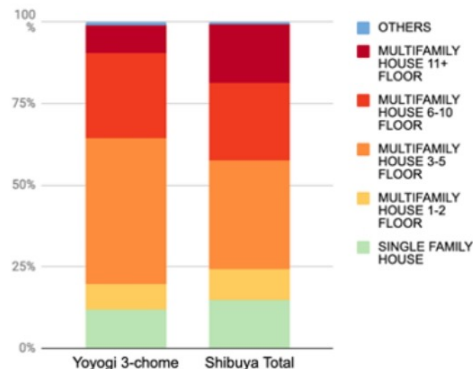
North to Yoyogi, Shinjuku's redevelopment started in the 1960s and the former site of Yodobashi water purification plant now sits the new CBD.

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.

Average Size of Household (2015)



Household by Housing Type (2015)



Single Family House



Source: CENTURY 21. (2021).

Multi-Family House



3 stories

Source: LIFULL HOME. (2021a).



6 stories

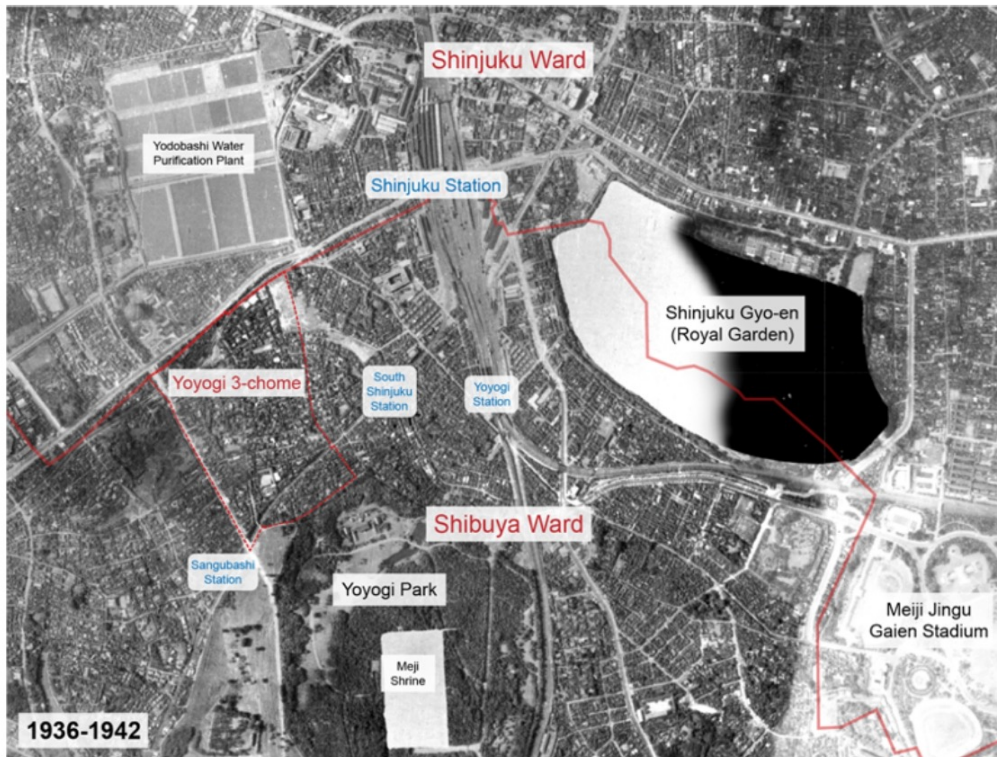
Source: LIFULL HOME. (2021b).



14 stories

Source: Prime corporation. (n.d.).

The majority of households in our study area are living in multifamily houses.



Source: Geospatial Information Authority of Japan

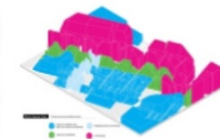
Although located in the Shibuya ward of Tokyo, Yoyogi is more close to the Shinjuku station area, the busiest transit hub in the world.

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 Gyo-en. 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 to 1964. It was returned to the Japanese government and transformed to the 1964 Tokyo Olympics village. The Shinjuku Gyo-en, 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.



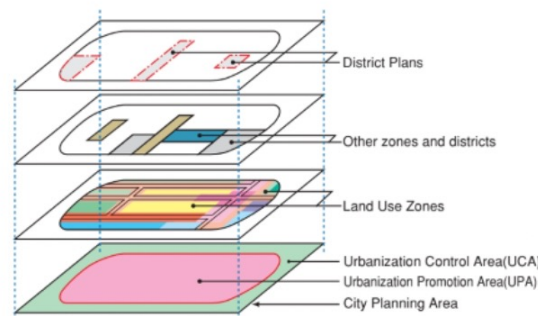
Zoning and Max. Building Volume.
Source: [Gollway et al.](#), (n.d.)



Actual Land Use in a Tokyo neighborhood.
Source: [Gollway et al.](#), (n.d.)

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).



Up: Types of Land Use Zones in Japan.

Down: Land Use Planning System Concept in Japanese Cities.

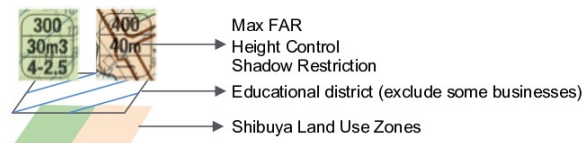
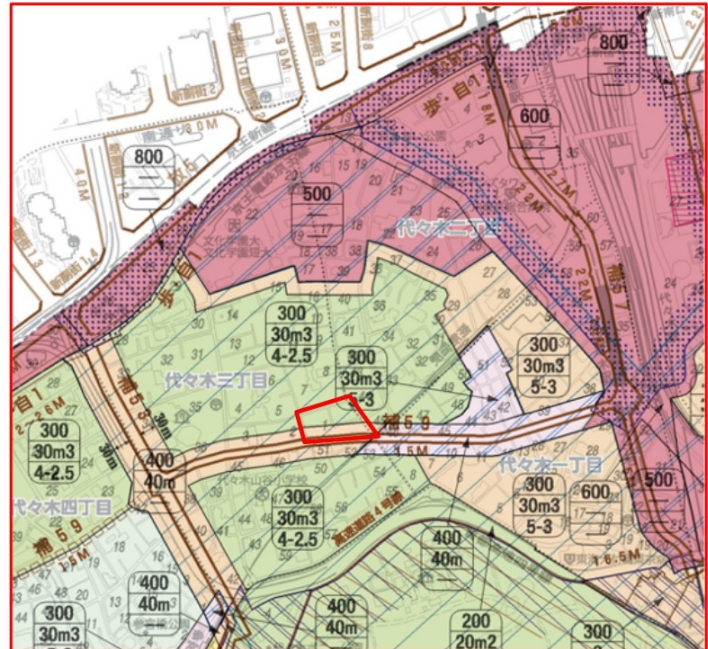
Source: City Planning Division, City and Regional Development Bureau, Ministry of Land. (2003).



Land use zones in Shibuya Ward, Tokyo

Land Use Zones	Building Coverage
Category I exclusively low-rise residential zone	60%
Category II exclusively low-rise residential zone	60%
Category I mid/high-rise oriented residential zone	60%
Category II mid/high-rise oriented residential zone	60%
Category I residential zone	60%
Category II residential zone	60%
Quasi-residential zone	60%
Neighborhood commercial zone	80%
Commercial zone	80%
Quasi-industrial zone	80%

Height limit:
 Category I exclusively low-rise residential zone: 10m
 Category II exclusively low-rise residential zone: 12m



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

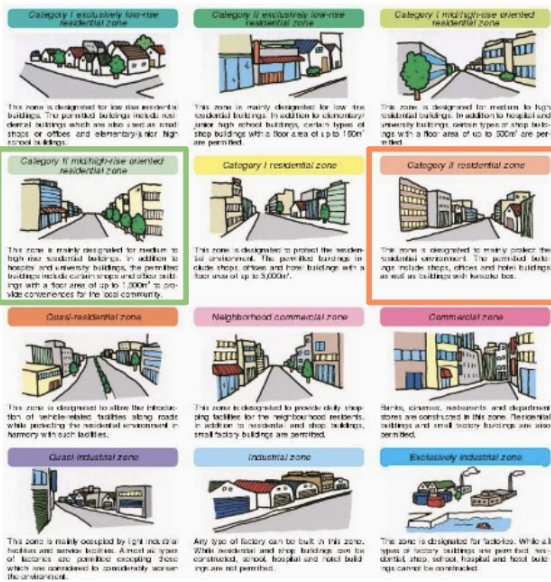


SUMMARY OF ZONING REGULATIONS (See Appendix for supporting research)

NOTES:

1	ZONING DISTRICTS	Category II mid/high-rise oriented residential zone	Category II residential zone	
2	LAND USE	Residential	Residential	Permitted land uses in each zoning district
3	FAR	300%	400%	Maximum permitted Floor Area Ratio
4	SITE COVERAGE	60%	60%	Maximum permitted site coverage
5	SETBACKS	-	-	No setback requirements
6	HEIGHT	Max: 30m	Max: 40m	Maximum height controls
OTHER NOTABLE ZONING REGULATIONS				
7	SLANT PLANE	YES	N/A	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.
8	SHADOW RESTRICTION	YES	YES	Limiting maximum hours of shadow on neighboring lots and adjacent areas.

12 Zoning Districts



Control of Building Uses by Land Use Zones

Examples of buildings	Category I exclusively low-rise residential zone	Category II exclusively low-rise residential zone	Category I mid/high-rise oriented residential zone	Category II mid/high-rise oriented residential zone	Category I residential zone	Category II residential zone	Quasi-residential zone	Neighborhood commercial zone	Commercial zone	Quasi-industrial zone	Industrial zone	Exclusively industrial zone
Houses, Houses with other small scale function (store, office, etc.), Kindergartens, Schools (Elementary, Junior High, Senior High), Gyms, Temples, Churches, Clinics, Hospitals, Universities												
Stores (mainly selling daily commodities), Restaurants with floor space of 150m ² max. on the first or second floor (including 1)												
Stores/Restaurants with floor space of 500m ² max. on the first or second floor (including 1)												
Stores/Restaurants not specified above (including 1)												
Offices, etc. not specified above												
Habitable houses (including 1)												
Theaters, Movie theaters (including 1)												
cin Theaters, Movie theaters, Stores, Restaurants, Amusement facilities and so on, with more than 10,000m ² of floor area												
Bathhouses with private rooms												
Independent garage with floor space of 500m ² max. on the first or second floor												
Factories with strong possibility of danger or environmental degradation												
Factory with strong possibility of danger or environmental degradation												

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.

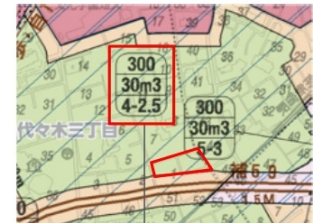
As-of-right System of Permitting

A discretionary review process is unnecessary if a project complies with all applicable zoning regulations.

Category II mid/high-rise oriented residential zone

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

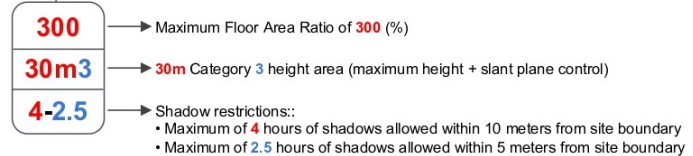
Zoning district	Land use	FAR	Site coverage	Setback	Height	Slant plane
Category II mid/high-rise oriented residential zone	Residential	300%	60%	N/A	Max: 30m	Yes



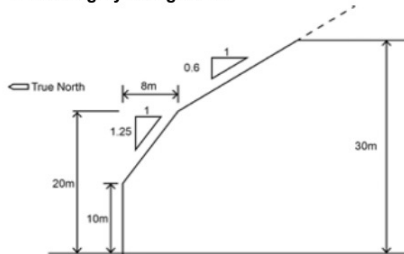
Source: Tatsuo AKASHI (2007)



Source: Google Maps, Google Earth

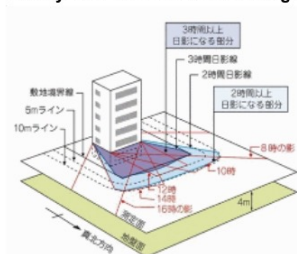


30m Category 3 height area



▲ 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)

Shibuya's Shadow Restriction diagram

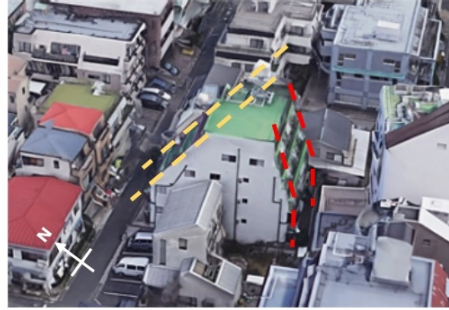
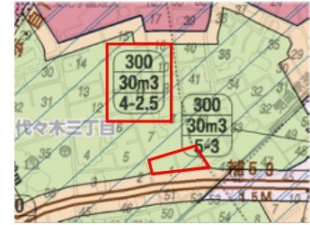


For zoning other than "exclusively low-rise residential," shadow restrictions are measured at the 4m elevation, because most of the ground floor are used for shops or garages.
(Source: Shibuya City Office, n.d.)

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.

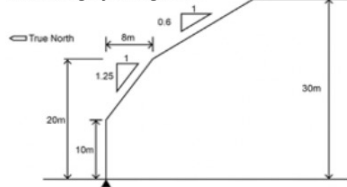
Zoning district	Land use	FAR	Site coverage	Setback	Height	Slant plane
Category II mid/high-rise oriented residential zone	Residential	300%	60%	N/A	Max: 30m	Yes



— Height Control
— Shadow Restrictions

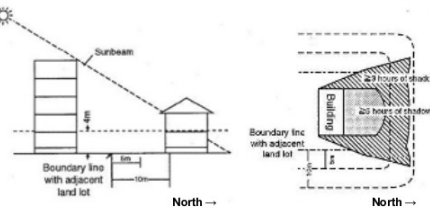
Slant Plane (Height Control)

30m Category 3 height area



▲ 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)

Shadow restrictions



Source: Tatsuo AKASHI (2007)

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).

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.

Zoning district	Land use	FAR	Site coverage	Setback	Height	Slant plane
Category II residential zone	Residential	400%	60%	N/A	40m	N/A



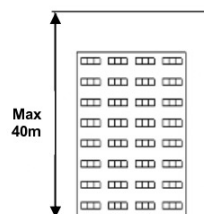
Source: Tatsuo AKASHI (2007)



— Height control



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)

CASE STUDY	SECTION	TITLE
Yoyogi 3-chome, Shibuya, Tokyo	4] ZONING ANALYSIS	4.4] EVALUATION

PROS	Cons
<ul style="list-style-type: none"> • 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 where people 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 ensures predictability of shadow effects while the performance-based sunlight control regulations gives 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. 	<ul style="list-style-type: none"> • National zoning code lacks the flexibility to local context Zoning and land use system didn't response 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 maps • No minimum FAR requirements promotes 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 use 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 upzoning for a more inclusive neighborhood.

5A] APPENDIX - BIBLIOGRAPHY

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