



**NEW YORK CITY  
UPPER WEST SIDE**



**PORTLAND  
PEARL DISTRICT**



**PARIS  
RIVE GAUCHE**



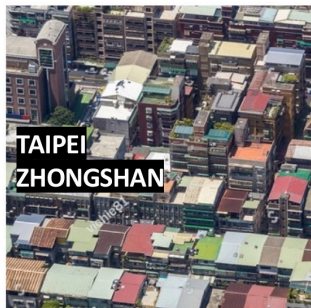
**MIAMI  
BRICKELL**



**SEOUL  
GEUMHO-DONG**



**TOKYO  
SHINJUKU**



**TAIPEI  
ZHONGSHAN**



**HONG KONG  
NORTH POINT**



**SHANGHAI  
GUBEI**

## **INTERNATIONAL CASE STUDIES IN RESIDENTIAL ZONING**

SPRING 2021

PRACTICUM: RESIDENTIAL PLANNING IN GLOBAL CITIES | PLANA6121 COLUMBIA GSAPP

INSTRUCTOR: KATE DUNHAM





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## COURSE OVERVIEW

As the world's urban population grows towards six and a half billion by 2050, cities all over the world are resorting to the mass-production of residential super-blocks to address new urban housing demands. But is this model appropriate for all cities, regardless of their environmental, social, political and economic differences? This seminar provides students with a hands-on opportunity to understand how planning code regulations - specifically residential codes - shape the design and functioning of neighborhoods in our rapidly urbanizing age. In this course students explore case studies from around the world, learn about different planning models and have a chance to develop their own ideas of how to use zoning as a tool to better address the challenges facing cities today. This seminar offers a multi-disciplinary approach to thinking about zoning and gives students from different related fields, such as planning, urban design, architecture and real estate, an opportunity to work collaboratively and holistically as they think about the complex planning challenges ahead in our urbanizing world.

### DRIVING QUESTIONS:

How has zoning shaped the neighborhoods we live in ?

What are the planning challenges ahead in the 'urban age' ?

What should the planning goals be to address them ?

What are the zoning tools that can help achieve those goals ?

### CASE STUDY SELECTION CRITERIA:

#### CENTRAL LOCATION

Located in or near the downtown area of a large city

#### MEDIUM TO HIGH DENSITY

Multi-story, multi-unit housing typologies

#### IDENTIFIABLE CHARACTERISTICS

Distinctive identifiable neighborhoods  
Replicable development models

#### UNDERLYING ZONING REGULATIONS

Common categories of bulk and land use regulations

#### AVAILABILITY & ACCESSIBILITY OF INFORMATION

Government zoning regulations are available on-line



# NINE INTERNATIONAL CASE STUDIES IN RESIDENTIAL ZONING

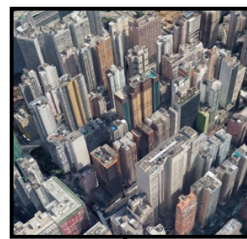
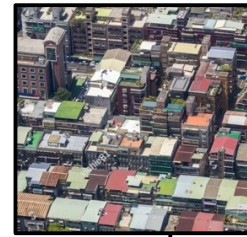
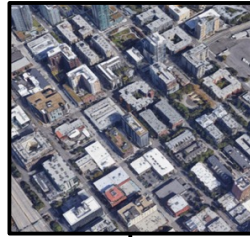
## INSTRUCTOR-PROVIDED CASE STUDIES:

A. NEW YORK CITY, UPPER WEST SIDE

B. SHANGHAI, GUBEI

## 2021 STUDENT CASE STUDY TEAMS :

1. PORTLAND, PEARL DISTRICT      Joey Xu and Vicky Zhou
2. MIAMI, BRICKELL      Mariana Hinojosa and Juan Moreno
3. PARIS, RIVE GAUCHE      Jin Jong Kim and Yuan Qin
4. HONG KONG, NORTH POINT      Mengqi Cao and Zixuan Zha
5. TAIPEI, ZHONGSHAN      Jiuyu Wang and Hui Lu
6. TOKYO, SHINJUKU      Hanzhang Yang and Priska Marianne
7. SEOUL, GEUMHO-DONG 3-GA      Soyeon Kim and Yiyi Jiang



A

B

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	NEW YORK UPPER WEST SIDE	SHANGHAI GUBEI	PORTLAND PEARL DISTRICT	MIAMI BRICKELL	PARIS, RIVE GAUCHE	HONG KONG, NORTH POINT	TAIPEI ZHONGSHAN	TOKYO SHINJUKU	SEOUL GEUMHO- DONG
LAND USE	Residential + Commercial	Residential	Residential + mixed	Residential + mixed	Residential + mixed	Residential + Commercial	Residential + Commercial	Residential + mixed	Residential
FAR	3.4, 10.0	2.5	3.0, 6.0	5.0, 11.0, 18.0	2.69	8.0, 9.0	2.25, 4.0	3.0, 4.0	2.0, 2.5, 4.0
SITE COVERAGE	65 - 100%	25%	100%	80%	40 - 50%	33-37.5% for tower over base	45 - 50%	60%	50 - 60%
STREET SETBACK	Max 3m	3 - 20m	5' - 10' 1.5 - 3m	10'	NA	NA	3m	NA	0 - 1.5m
HEIGHT	75' - 210' (8-20 floors)	> 30m (10-34 floors)	65' - 100' (7 - 10 floors)	(6 - 144m) 2 - 48 floors	37m (~ 4 floors)	110-120m (35-40 floors)	(~ Max 40m) 4 floors	(30 - 40m) 3-4 floors	(~21 - 105m) 7 - 35 floors





# A NEW YORK CITY

## CASE STUDY

### NEW YORK CITY – UPPER WEST SIDE

## CONTENTS

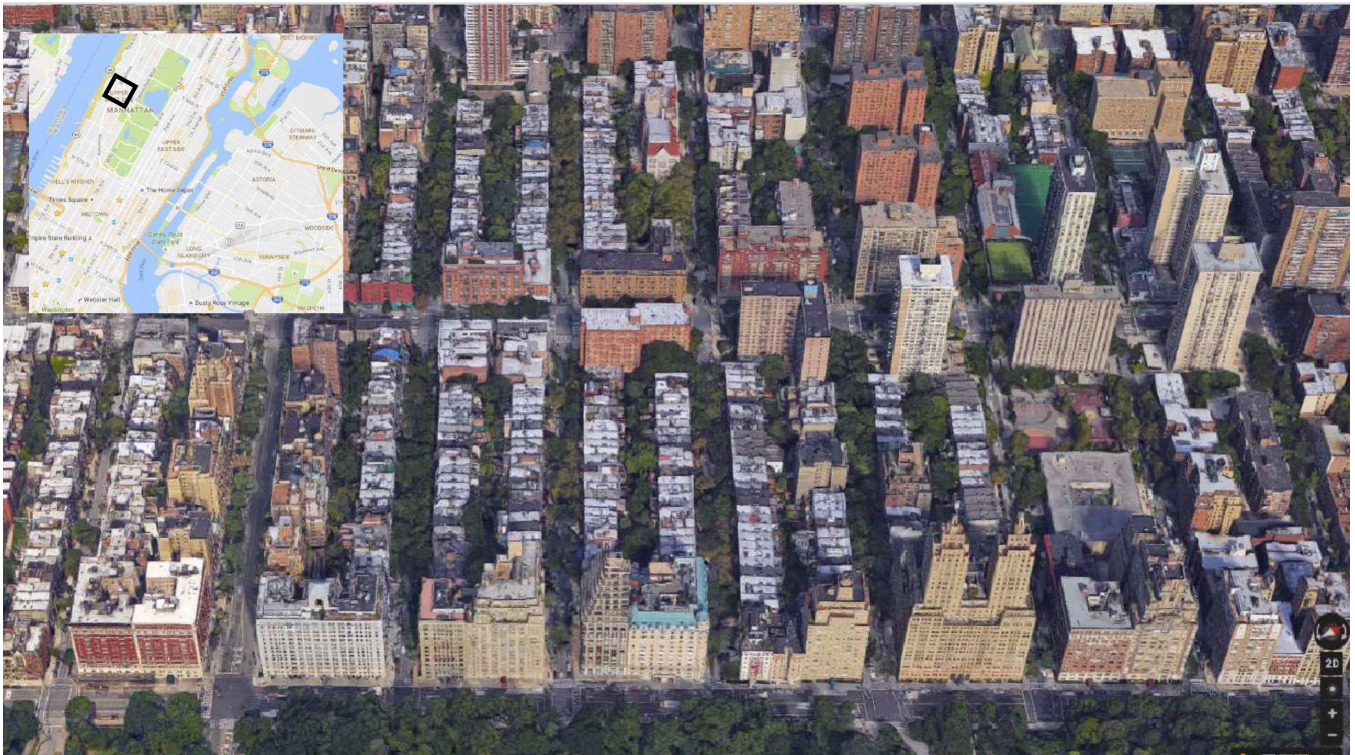
1. INTRODUCTION
2. CHARACTER
3. BACKGROUND
4. EXISTING ANALYSIS
5. ZONING ANALYSIS
6. ZONING HYBRIDS
7. APPENDIX

## TEAM

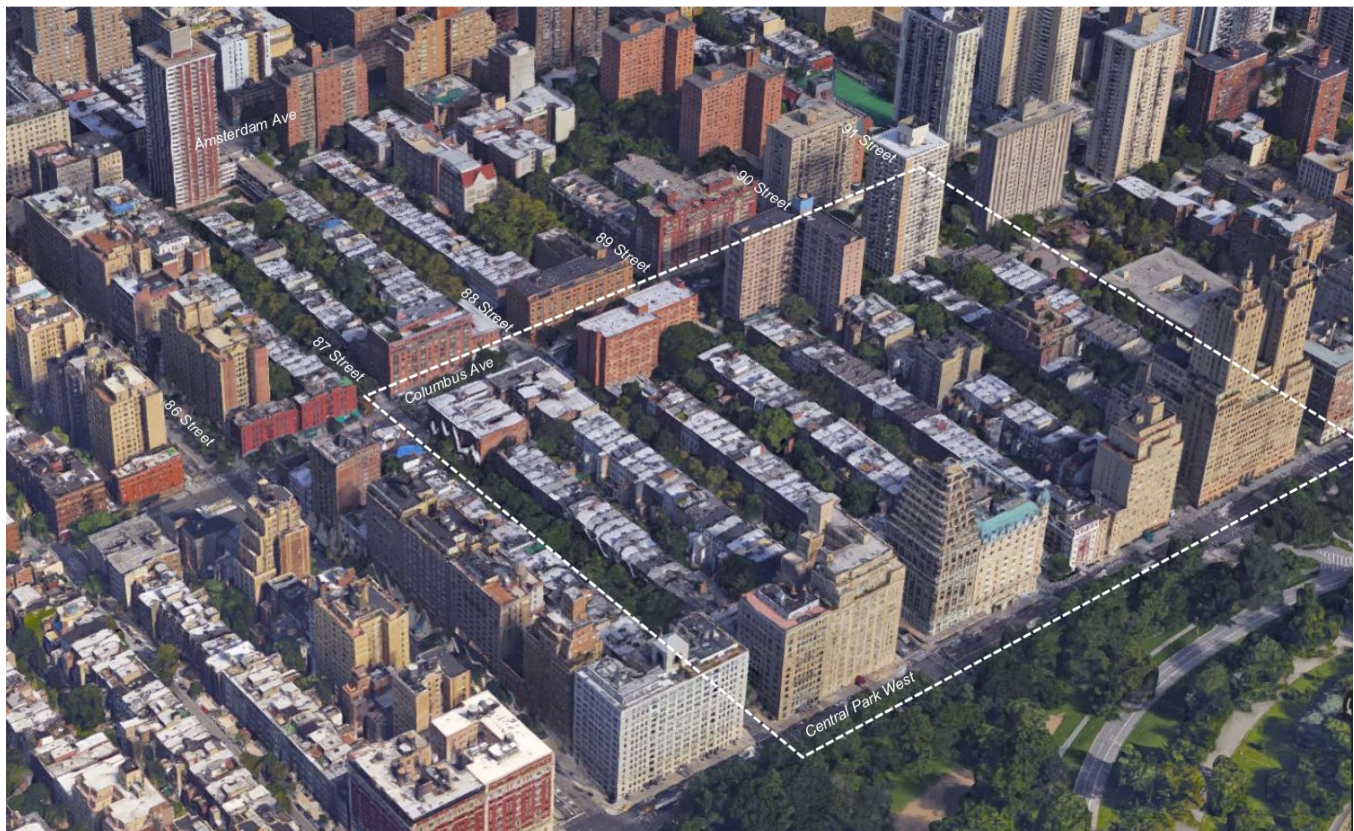
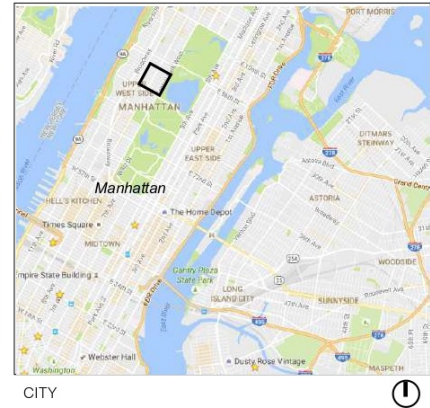
Sample Case Study

## DATE

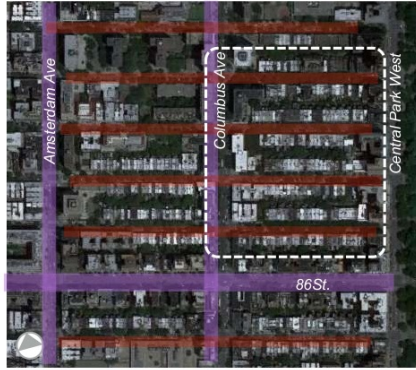
2019











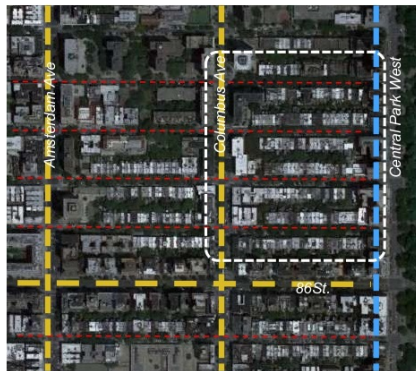
#### COMMERCIAL AVENUES

- Neighborhood commercial corridors are grouped along the larger north/south avenues with wide sidewalks
- Wide avenues serve to accommodate taller buildings and higher densities
- Commercial outer block protects residential inner blocks



#### RESIDENTIAL SIDE STREETS

- Narrow cross streets provide lower FAR and height limits allowing for townhouses and distinctive residential character



#### BUILDINGS ON CENTRAL PARK WEST

- Typically 10 to 15 story apartment buildings
- Street wall, boxy shape buildings with "wedding cake" setbacks above the a common height (about the 13<sup>th</sup>-15<sup>th</sup> floors)
- Large footprints - Large lots
- Entry lobbies (typically doorman operated) are off of Central Park West
- Ground floors accommodate doctors offices in addition to lobbies and apartments
- Buildings are older (mostly prewar)



#### BUILDINGS ON SIDE STREETS

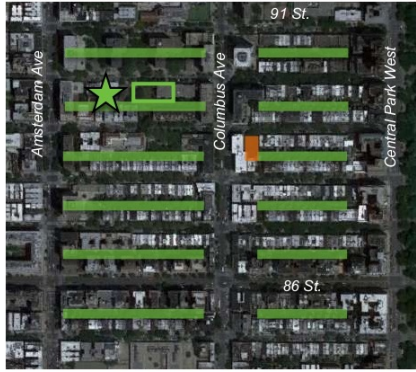
- 4 to 5 story 'brownstone' row houses
- Originally designed for single families but many are converted into multiple apartments
- Entries usually have exterior stairs (stoops)
- Row houses are set back about 8' giving each house private front space adjacent to the sidewalk. Sometimes this space is below the sidewalk level.



#### BUILDINGS ON COLUMBUS AVE.

- New apartment buildings are typically either 10 to 15 story streetwall boxy buildings or taller towers set back from the sidewalk
- Older buildings are typically 6 story tenements
- Large footprints - Large lots
- Ground floor is occupied by local retail, restaurants, banks, etc.



**1] PRIVATE BACK YARDS**

- Small private back yards ( < 600sf)
- Usually associated with the ground floor apartments

**2] SEMI-PRIVATE PARKS**

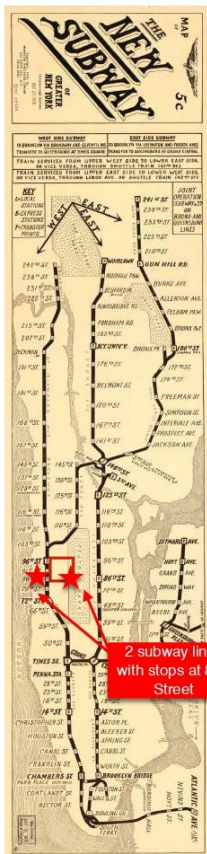
- Community Gardens on property of the Columbus Ave. residential building
- Possibly maintained by the building but open to the public ...
- Shared bike racks on the sidewalks

**3. PUBLIC PARKS & PLAYGROUNDS**

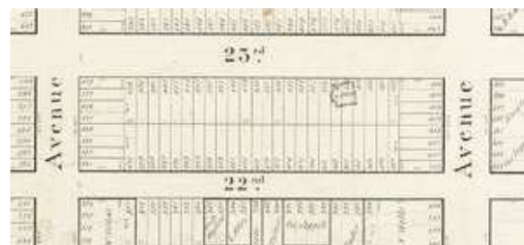
- The landscaped median down the center of Broadway provides popular outdoor seating
- Some side streets have mid-block parks with playgrounds

**SCHOOLS**

- 1 public school next to the playground
- Adjacent to the study area are a number of other public schools

**IRT SUBWAY EXPANSION**

Many of the residential apartment buildings and row houses were built as a result of the west side subway expansion at the start of the 20th century.

**STANDARD BLOCK PARCEL SIZES**

Thanks to the **1811 Commissioners' Plan** for Manhattan's street grid pattern - blocks were subdivided into standard parcel sizes for development (16' to 20' x 100'). Most of the blocks on the Upper West Side follow the same parcelization plan as this block downtown:

**BUILDING HERITAGE**

Many of the pre-war early apartment buildings of the Upper West Side were built to high standards with luxury services to attract middle and upper income residents to live uptown who would otherwise have preferred to live in a house.

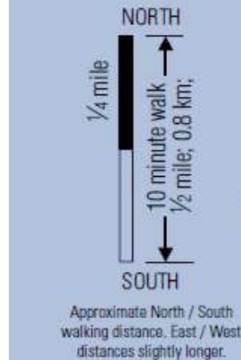






**WITHIN WALKING DISTANCE:**

- 5 Subway lines
- 6 Bus lines
- 6 Public parking garages
- Multiple CitiBike stations



#### GOOD ACCESSIBILITY

- Numerous transportation options within a 10 minute walk makes it easy to get around the city from this area.

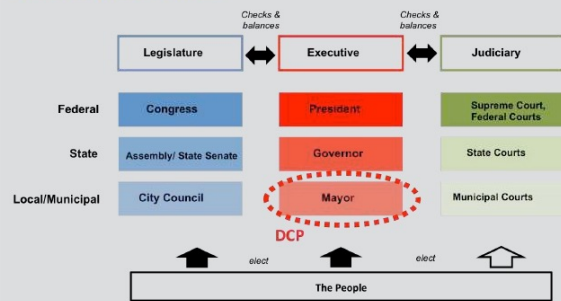
#### UPPER WEST SIDE STATISTICS:

- 99% of residents live within 1/4 mile of a subway
- Most of the population commutes to work without a car (86.5%)
- Average commute time is 30 minutes

#### SOURCES:

- SOURCE 3A: State of New York City's Housing and Neighborhoods in 2015

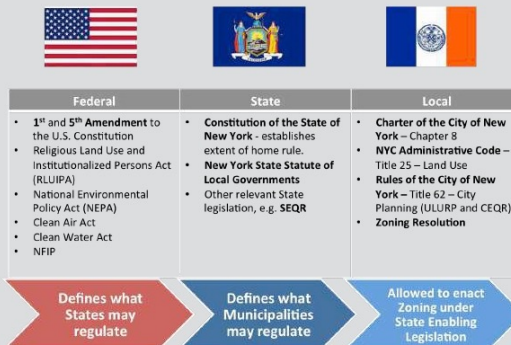
### Government Basics



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### Legal Foundations

DCP's work is governed by Federal, State and Local Law, for example



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Zoning regulations are established at the local, city, level by the Department of City Planning (NYCDP). DCP works under the mayor in conjunction with the City Council.

Zoning is enforced by other city agencies including the Buildings' Department.

Modifications to zoning regulations go through a public review process called Uniform Land Use Review Process (ULURP) which can take more than 7 months. It involves an environmental impact study, Community Board reviews and final approval by the City Council.

#### PUBLIC REVIEW

#### Public Review Process

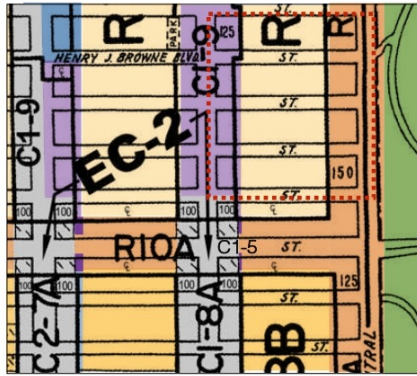


- Zoning map amendments are subject to the Uniform Land Use Review Procedure (ULURP)
- Zoning text amendments follow a similar procedure, but have concurrent community and borough president review
- CPC Special Permits require ULURP
- Variances are processed through the Board of Standards and Appeals (BSA)

#### SOURCES:

- SOURCE 5D: NYC DCP presentation by Chris Hayner 1/23/2017





25ha STUDY AREA

FOCUS BLOCK

**9 ZONING DISTRICTS:****Residential**

- R7-2:** Medium density apt. house district
- R8B:** Row house district
- R10A:** Large street wall apartment bldgs

**Commercial Overlay \***

- C1-5:** Ground commercial use to serve local needs in a residential building

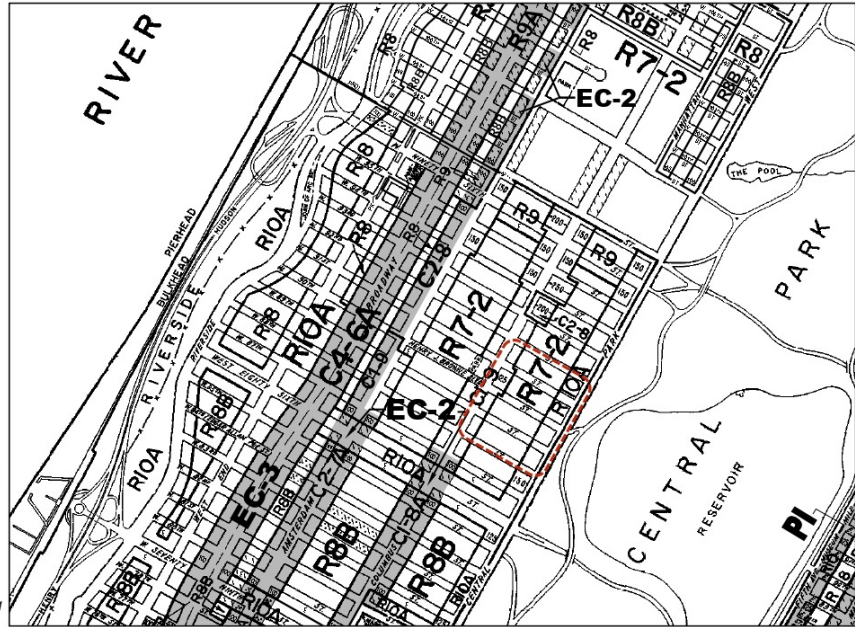
**Commercial / Residential \***

- C1-8A:** Commercial districts which are predominantly residential in character and have Residential zone equivalents
- C1-9:**
- C2-7A:**
- C2-8:**

**Special**

- EC-2:** Special Enhanced Commercial District: "to promote and maintain a lively and engaging pedestrian experience along commercial avenues"

\* Residential is permitted in all Commercial Districts except C8.

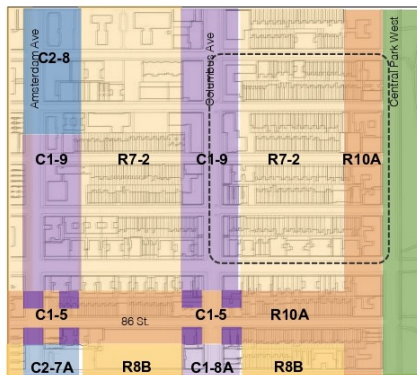


C1-1 C1-2 C1-3 C1-4 C1-5 C2-1 C2-2 C2-3 C2-4 C2-5

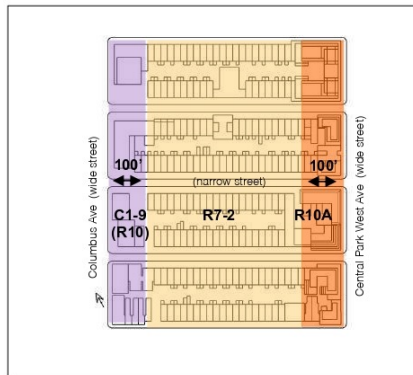
NOTE: Where no dimensions for zoning district boundaries appear on the zoning maps, such dimensions are determined

**SOURCES:**

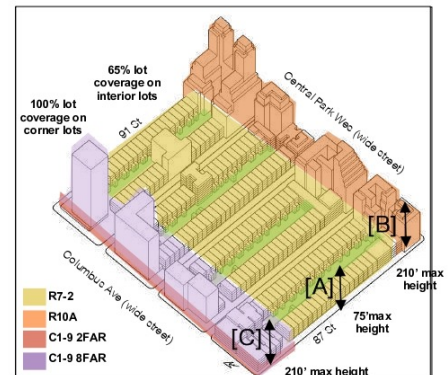
- SOURCE 5A: NYC Zoning Text and Maps



500m



250m

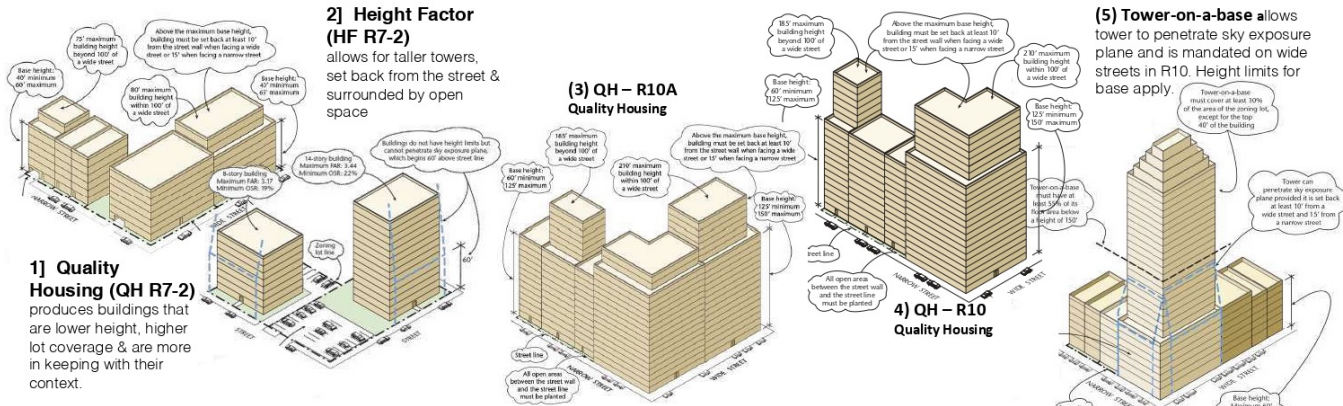
**SUMMARY OF ZONING REGULATIONS (see next page for detailed explanations)**

1 ZONING DISTRICTS <sup>1</sup>	R7-2 <sup>1</sup>	R10A <sup>1</sup>	C1-9 (R10) <sup>1</sup>
2 LAND USE	Residential	Residential	Commercial/Residential
3 FAR <sup>2</sup>	N = 3.44 W = 4	10.0 (option for 12FAR) <sup>3</sup>	Commercial= 2; Residential= 8
4 SITE COVERAGE <sup>4</sup>	Corner lot: 80% Interior lot: 65%	Corner lot: 100% Interior lot: 70%	Corner lot: 100% Interior lot: 70%
5 SETBACKS	Street wall setback: various depends on existing context Rear Yard: min. 30'	Street wall setback: max. 8' for 70% of frontage Rear Yard: min. 30'	Street wall setback: max. 8' for 70% of frontage Rear Yard: min. 30'
6 HEIGHT (H) <sup>5</sup>	Base N/W: 40'-60' / 40'-65' Max. H N/W: 75' / 80' [A]	Base N/W: 60'-125' / 125'-150' Max. H N/W: 185' / 210' [B]	Base N/W: 60'-125' / 125'-150' Max. H N/W: 185' / 210' [C]
OTHER NOTABLE ZONING REGULATIONS (see next page for detailed explanations)			
7 DISTANCE B/T BUILDINGS <sup>6</sup>	Depends on height and window location; ranges between 20'-60'		
8 UNIT DENSITY <sup>7</sup>	Total res. Floor area / 680		

**Notes: see next pages for more information**

- 1 Regulations shown here are for the Quality Housing Option (see next page)
- 2 FARs differ depending on the facing street width: W = wide, N = Narrow
- 3 12 FAR for the Inclusionary Housing Option
- 4 No lot coverage regulations for Height Factor option.
- 5 Height regulations shown here are for the Quality Housing option (see next page) and depend on the facing street width: W = wide, N = Narrow
- 6 Minimum 8' between nonadjacent building sidewalls. No distance required between abutting buildings
- 7 Min. size of dwelling unit = 325 sqft
- No parking requirements in the Manhattan Core (below 96<sup>th</sup> street)





## R7-2 : RESIDENTIAL

Two Options:		(2)	(1)	
Residential FAR (max)	Wide street	0.87-3.44 (range)	4.0 <sup>1</sup> 3.44 <sup>2</sup>	5.0 <sup>a</sup>
	Narrow street		3.44	
Community facility FAR (max)		R7-1: 4.8 R7-2: 6.5	R7-1: 4.8 R7-2: 6.5	5.0
Open space ratio		15.5-25.5 (range)	—	—
Lot coverage (max)	Corner lot	—	80%	70%
	Interior lot	—	65%	
Base height (min/max)	Wide street	—	40-65 ft <sup>1</sup> 40-60 ft <sup>2</sup>	65 ft
	Narrow street	—	40-60 ft	
Building height (max)	Wide street	—	80 ft <sup>1</sup> 75 ft <sup>2</sup>	185 ft
	Narrow street	—	75 ft	
Rear yard depth (min)		30 ft	30 ft	30 ft
Off-street parking (min)		R7-1: 60% R7-2: 50%	50%	50%

SOURCES:

SOURCES: CO-OPED NYC ZONING HANDBOOK, 2018 EDITION

## R10A: RESIDENTIAL

One Option:		R10QH R10A	
Residential FAR (max)	Wide Street Narrow Street	10.0 <sup>a</sup>	Quality Housing regulations are mandatory in R10A districts (towers are not permitted) Additional FAR is available through participation in the Inclusionary Housing Program
	Community facility FAR (max)	10.0	
Open space ratio		—	
Lot coverage (max)	Corner lot	100%	
	Interior lot	70%	
Base height (min/max)	Wide street Narrow street	125-150 ft 60-125 ft	
	Building height (max)	210 ft 185 ft	
Rear yard depth (min)		30 ft	
Off-street parking <sup>1</sup> (min)		40%	

## C1-9/R10: COMMERCIAL/RESIDENTIAL

Two Options:		(4) (5)	
Residential FAR (max)	Wide Street Narrow Street	10.0 <sup>a</sup>	C1-9 is a Commercial district which is primarily for residential use. Commonly found along major busy streets in medium to high density neighborhoods • The residential equivalent of R10 applies. • Two options apply: <b>Quality Housing and Tower Regulations.</b> • Commercial uses must always be below any residential floors. • Maximum 2 FAR for the commercial portion. • Maximum 8 FAR for residential portion
	Community facility FAR (max)	10.0	
Open space ratio		—	
Lot coverage (max)	Corner lot	—	
	Interior lot	—	
Base height (min/max)	Wide street Narrow street	60-85 ft (wide st) Tower rules	
	Building height (max)	—	
Rear yard depth (min)		30 ft	
Off-street parking <sup>1</sup> (min)		40%	

## R7-2

**R7 districts** are medium-density apartment house districts mapped in much of the Bronx as well as the Upper West Side in Manhattan and Brighton Beach in Brooklyn. The height factor regulations for R7 districts encourage lower apartment buildings on smaller zoning lots and, on larger lots, taller buildings with less lot coverage. As an alternative, developers may choose the optional Quality Housing regulations to build lower buildings with greater lot coverage. Regulations for residential development in R7-1 and R7-2 districts are essentially the same except that R7-2 districts, which are mapped primarily in upper Manhattan, have lower parking requirements.

## Two zoning options in R7-2 districts:

- Height factor** buildings are often set back from the street and surrounded by open space and on-site parking. The floor area ratio (FAR) in R7 districts ranges from 0.87 to a high of 3.44; the open space ratio (OSR) (OSR) ranges from 15.5 to 25.5. As in other non-contextual districts, a taller building may be obtained by providing more open space. For example, 76% of the zoning lot with a 14-story building must be open space (3.44 FAR × 22.0 OSR). The maximum FAR is achievable only where the zoning lot is large enough to accommodate a practical building footprint as well as the required amount of open space. The building must be set within a sky exposure plane which, in R7 districts, begins at a height of 60 feet above the street line and then slopes inward over the zoning lot.

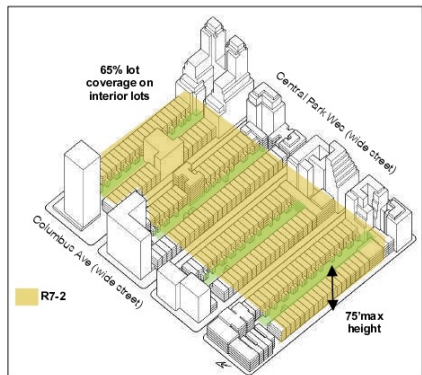
Medium-Density Non-Contextual Residence District						
RT	FAR	Open Space Ratio	Sky Exposure Plane	DU Factor	Basic	Required Parking
	max.	range	Starts at 60 ft.	680	60% R7-1 R7-2	15% of R7-1
Height Factor	0.87-3.44	15.5-25.5				

- The optional Quality Housing regulations** in R7 districts utilize height limits to produce lower, high lot coverage buildings set at or near the street line. With floor area ratios that are equal to or greater than can be achieved in height factor buildings, the optional Quality Housing regulations produce new buildings in keeping with the scale of many traditional neighborhoods in the East Village and upper Manhattan, the west Bronx, and sections of Queens and Brooklyn.

Medium-Density Non-Contextual Residence District									
RT QH	Lot Area	Base Height	Base Height	FAR	Base Height	Building Height	# of Stories	DU Factor	Required Parking
	min.	min.	max.	max.	min.	max.	max.	max.	min.
Narrow Street	1,700 sq ft	18 ft	30 ft	100%	65%	3.44	40-65 ft	75 ft	15% of R7-1
Wide Street	1,700 sq ft	18 ft	30 ft	100%	65%	4.00	40-75 ft	80 (85) ft	15% of R7-1
Indeterminate	1,700 sq ft	18 ft	30 ft	100%	65%	4.60	40-75 ft	135 ft	15% of R7-1

SOURCES:

SOURCE 5C: NYC Zoning Handbook, 2018 Edition



## Two zoning options in R7-2 districts





## R10 / C1-9

R10 districts allow for the highest residential FAR of 10 in the city.

Two zoning options in R10 districts (Height Factor regulations are not applicable):

1. **The optional Quality Housing regulations:** Quality Housing contextual regulations (the same as for R10A Districts) produce large, high lot coverage buildings set at or near the street line which maintain the traditional high street wall found along major streets and avenues. On wide streets, the base height before setback is 125 to 155 feet with a maximum building height of 215 feet for buildings providing a qualifying ground floor. On narrow streets, in order to ensure more light and air at street level, the base height before setback is 60 to 125 feet. The maximum building height is 185 feet. Interior amenities for residents are mandatory pursuant to the Quality Housing Program.

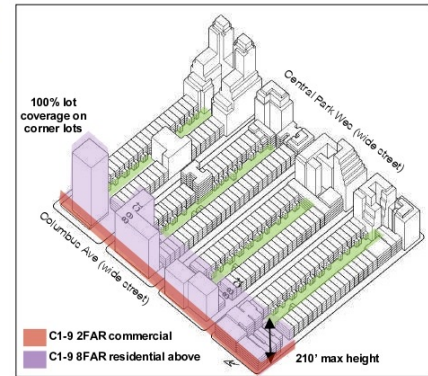
R10 QH	Lot Area min.	Lot Width min.	Rear Yard min.	Lot Coverage		FAR max.	Base Height		Building Height max. (in QGP)	# of Stories max. (in QGP)	DU Factor	Required Parking Basic (RRU)	
				Corner	Other Lot		min.	max.				min.	max.
Basic	1,700 sf	15 ft	30 ft	100%	70%	10.00	60-125 ft		185 ft	n/a (23)	680	40% of DU	12% of RRU
Narrow Street							125-155 ft		215 (215) ft				
Wide Street							125-155 ft		215 (215) ft				
Inclusionary	1,700 sf	15 ft	30 ft	100%	70%	12.00	60-125 ft		215 (215) ft	23	680	40% of DU	12% of RRU
Narrow Street							125-155 ft		215 (215) ft				
Wide Street							125-155 ft		215 (215) ft				

2. **Tower-on-a-Base Regulations:** Tower regulations allow a building to penetrate the sky exposure plane, which results in buildings taller than those allowed under Quality Housing regulations. ... A tower-on-a-base is the only type of tower that can be built on a wide street in an R10, C1-9 or C2-8 district; the building envelope of a contextual base topped by a tower portion ensures compatibility with existing buildings along these avenues. The height of the base is between 60 and 85 feet. On a wide street, the street wall must extend continuously along the street line. On a narrow street, the open area between the street wall and the street line must be planted. The tower portion must be set back at least 10 feet from a wide street and 15 feet from a narrow street, and the lot coverage must be between 30% and 40%. The height of the tower is controlled by a distribution rule, which requires at least 55% of the floor area on the zoning lot to be located below a height of 150 feet.

R10	FAR max.	Open Space Ratio range	Lot Coverage		Base Height min-max	Sky Exposure Plane Starts at 85 ft	Tower Lot Coverage min-max	DU Factor	Required Parking Basic (RRU)	
			Corner	Other					min.	max.
Standard Tower	10.00	n/a	n/a	n/a	n/a	Starts at 85 ft	n/a-40%	680	40% of DU	12% of RRU
Basic	10.00	n/a	100%	70%	60-85 ft	n/a	50%-40%	680	40% of DU	12% of RRU
Tower-on-a-base	12.00	n/a	100%	70%	60-85 ft	n/a	50%-40%	680	40% of DU	12% of RRU

## SOURCES:

- SOURCE 5C: NYC Zoning Handbook, 2018 Edition



Two zoning options in R7-2 districts



## CASE STUDY

## SECTION

## TITLE

## R10A

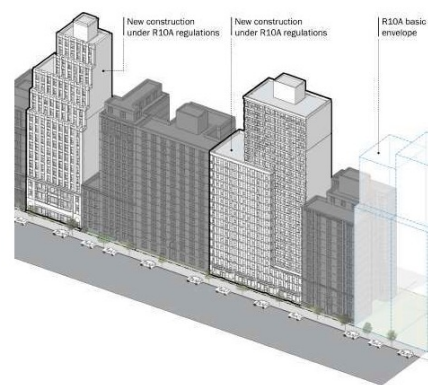
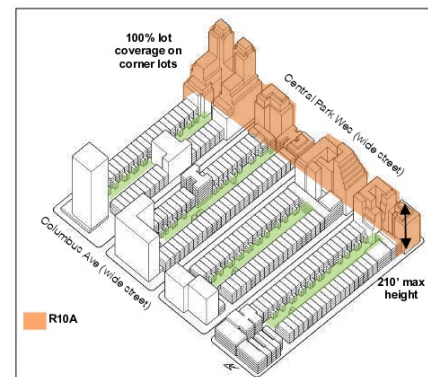
## R10 districts mandate Quality Housing contextual regulations

The Quality Housing contextual regulations, mandatory in R10A districts, typically produce the substantial apartment buildings set on the avenues and wide streets of Manhattan, such as West End Avenue and Broadway on the Upper West Side. ...

Typical new buildings are apartment buildings between 21 and 23 stories with high lot coverage and street walls set at or near the street line. The floor area ratio (FAR) is 10.0. Residential and mixed buildings can receive a residential floor area bonus for the creation or preservation of affordable housing, on-site or off-site, pursuant to the Inclusionary Housing Program. The maximum base height before setback, which is 155 feet within 100 feet of a wide street with a qualifying ground floor and 125 feet on a narrow street, is designed to match the height of many older apartment buildings. Above the base height, the required minimum setback is 10 feet on a wide street and 15 feet on a narrow street. The maximum height of a building is 210 feet within 100 feet of a wide street and 185 feet beyond 100 feet of a wide street. If providing a qualifying ground floor, the maximum height on a wide street is 215 feet.

Higher maximum FAR and heights are available for buildings participating in the Inclusionary Housing Program or that provide certain senior facilities.

R10A	Lot Area min.	Lot Width min.	Rear Yard min.	Lot Coverage		FAR max.	Base Height		Building Height max. (in QGP)	# of Stories max. (in QGP)	DU Factor	Required Parking Basic (RRU)	
				Corner	Other Lot		min.	max.				min.	max.
Basic	1,700 sf	15 ft	30 ft	100%	70%	10.00	60-125 ft		185 ft	n/a (23)	680	40% of DU	12% of RRU
Narrow Street							125-155 ft		210 (215) ft				
Wide Street							125-155 ft		210 (215) ft				
Inclusionary	1,700 sf	15 ft	30 ft	100%	70%	12.00	60-125 ft		210 (215) ft	23	680	40% of DU	12% of RRU
Narrow Street							125-155 ft		210 (215) ft				
Wide Street							125-155 ft		210 (215) ft				



## SOURCES:

- SOURCE 5C: NYC Zoning Handbook, 2018 Edition



R7-2

R10 /  
C1-9

## R6-R10 Non-Contextual Districts (Quality Housing)

Use			R6 QH	R7 QH R7.1 R7.2	R8 QH	R9 QH	R10 QH
Single-Family	Detached	Use Group 1	*	*	*	*	*
Single & Two-Family	All	Use Group 2	*	*	*	*	*
Multi-Family			*	*	*	*	*
Community Facility		Use Groups 3, 4	*	*	*	*	*
Bulk							
Lot Area (min)	All				1,700 sf		
Lot Width (min)	All				18 ft		
Rear Yard (min)	All				30 ft		
	Corner Lot				100%		
Lot Coverage (max)	Narrow Street		60%	65%	70%		
	Wide Street		65%				
	Standard		2.20	3.44	6.02	7.52	10.00
Residential FAR	Narrow Street		3.60	4.00	7.20		
	Wide Street		3.60				
	MIH		3.60	4.60	7.20	8.00	12.00
	Street						
Community Facility FAR			4.80	4.80	6.50	6.50	10.00
Base Height (min-max)	Standard	Narrow Street	30-45 ft	40-65 ft	60-85 ft	60-95 ft	60-125 ft
		Wide Street	40-65 ft	40-75 ft	60-95 ft	60-105 ft	125-155 ft
Outside MN Core	MIH / VIH	Narrow Street	30-45 ft	40-65 ft	60-105 ft	60-125 ft	60-155 ft
		Wide Street	40-65 ft	40-75 ft	60-105 ft	60-125 ft	125-155 ft
	Standard	Narrow Street	55 ft	75 ft	115 ft	135 ft	185 ft
Building Height (max)	(w/QGF)	Wide Street	70 ft	80 ft	130 ft	145 ft	210 ft
			(75 ft)	(85 ft)	(135 ft)		
Outside MN Core	MIH	Narrow Street	80 ft (85 ft)	100 ft (105 ft)	215 ft	160 ft (165 ft)	210 ft (215 ft)
	(w/QGF)	Wide Street				170 ft (175 ft)	230 ft (235 ft)
	VIH	Narrow Street	55 ft	75 ft	140 ft	160 ft (165 ft)	210 ft (215 ft)
	(w/QGF)	Wide Street	80 ft (85 ft)	100 ft (105 ft)	145 ft	170 ft (175 ft)	230 ft (235 ft)
	Standard	Narrow Street	n/a	n/a	n/a	n/a	21
Number of Stories (max)	(w/QGF)	Wide Street	n/a (7)	n/a (8)	n/a (13)	n/a	
	MIH	Narrow Street	8	13	14	16	21
	(w/QGF)	Wide Street	n/a	n/a	17	23	
	VIH	Narrow Street	n/a	n/a	16	21	
	(w/QGF)	Wide Street	n/a (8)	8	21	17	23
Tower Lot Coverage (min-max)					n/a		
Dwelling Unit Factor	All				680		
Parking							
General (min % of d.u.)	for Group Parking Facilities		50%	25%	15%	40%	12%
Reduced and Waived Requirements (min % of d.u.)	IRHU-outside Transit Zone					10%	
	AIRS-outside Transit Zone					0%	
	IRHU/AIRS-inside Transit Zone						
	Small Lot 10,000sf or less		50%			0%	
	Area 10,000-15,000sf		n/a		30%	20%	
	waived if small # spaces		5	5(15)		15	

## R6-R10 Non-Contextual Districts (Height Factor and Tower)

Use			R6 HF	R7 HF R7.1 R7.2	R8 HF	R9 HF	R10
Single-Family	Detached	Use Group 1	*	*	*	*	*
Single & Two-Family	All	Use Group 2	*	*	*	*	*
Multi-Family			*	*	*	*	*
Community Facility		Use Groups 3, 4	*	*	*	*	*
Bulk							
Lot Area (min)	All				1,700 sf		
Lot Width (min)	All				18 ft		
Rear Yard (min)	All				30 ft		
Residential FAR	Standard		0.78-2.43	0.87-3.44	0.95-6.02	0.99-7.52	7.52
	MIH						8
Community Facility FAR			4.8	4.8	6.5	6.5	10
Sky Exposure Plane	begins at						85 ft
Tower Lot Coverage (min-max)				n/a		n/a-40%	30-40%
Dwelling Unit Factor	All					680	
Parking							
General (min % of d.u.)	for Group Parking Facilities		70%	60%	50%		40%
Reduced and Waived Requirements (min % of d.u.)	IRHU (outside Transit Zone)		25%	15%			12%
	AIRS (outside Transit Zone)					10%	
	Small Lot 10,000 or less		50%	30%			0%
	Area (sf) 10,000-15,000		n/a	30%			20%
	if required small # spaces					15	

## All R6-R10 Districts

Streetscape			Streetscape		
Street Tree (min)			Street Wall Location Provision		
All Contextual Districts	Shall be provided within a planting strip for every 25 ft of Street Frontage		Contextual Districts		
All Non-Contextual Districts			R6B,R7B,R8B	Lot < 50 ft	no closer nor further
	Planting (min)		R6A,R7A,R7D,R7X,R9D	Lot > 50 ft	no closer than adjacent street wall
All Contextual Districts			Area between street line and building street wall shall be planted at ground level or in raised planting beds		
All Non-Contextual (QH Option) Districts			Non-Contextual Districts (QH Option)		
	R7-2		R6, R7	Narrow St.	Lot < 50 ft, no closer nor further
				Wide St.	All adjacent street wall
			R8,R9,R10	All within 50 ft of W. St.	70% of within 8 ft
	R10 / C1-9			N. St. beyond 50 ft W. St.	70% of within 15ft
Non-Contextual Districts (HF and Tower Options)			n/a		

## SOURCES:

- SOURCE 5C: NYC Zoning Handbook, 2018 Edition

## R6-R10 Contextual Districts

Use			R6A	R6B	R7A	R7B	R7D	R7X	R8A	R8B	R8X	R9A	R9D	R9X	R10A	R10X
Single-Family	Detached	Use Group 1	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Single & Two-Family	All	Use Group 2	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Multi-Family			*	*	*	*	*	*	*	*	*	*	*	*	*	*
Community Facility		Use Groups 3, 4	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Bulk																
Lot Area (min)	All								1,700 sf							
Lot Width (min)	All								18 ft							
Rear Yard (min)	All								30 ft							
	Corner Lot								100%							
Lot Coverage (max)	Narrow Street		85%	60%	65%				70%							
	Wide Street															
	Basic		3.00	2.00	4.00	3.00	4.20	5.00	6.02	4.00	6.02	7.52	9.00		10.00	
Residential FAR	Narrow Street															
	Wide Street															
	MIH / VIH		3.60	2.20	4.60	n/a	5.60	6.00/ 5.00	7.20	n/a	7.20	8.50	10.00	9.70		12.00
Community Facility FAR			3.00	2.00	4.00	3.00	4.20	5.00	6.50	4.00	6.00	7.50	9.00		10.00	
Base Height (min-max)	Basic	Narrow Street	40-60 ft	30-40 ft	40-65 ft	40-65 ft	60-85 ft	60-85 ft (95 ft)	60-85 ft (95 ft)	55-65 ft	60-85 ft (95 ft)	60-95 ft	60-85 ft or 15-26ft (if facing elevated rail)	60-120 ft (125 ft)	60-125 ft	60-85 ft
	(w/QGF)	Wide Street										60-105 ft		105-120 ft (125 ft)	125-155 ft	
Outside MN Core	MIH/VIH	Narrow Street	40-65 ft	30-40 ft	40-75 ft	n/a	60-95 ft	60-105 ft/ 60-85 ft (95 ft)	60-105 ft	n/a	60-105 ft	60-125 ft		60-145 ft 105-145 ft	60-155 ft	60-85 ft
	Standard	Narrow Street	70 ft	50 ft	80 ft	75 ft	100 ft	120 ft (125 ft)	120 ft (125 ft)	75 ft	150 ft (155 ft)	135 ft	n/a	160 ft (165 ft)	185 ft	n/a
Building Height (max)	(w/QGF)	Wide Street	(75 ft)	(55 ft)	(85 ft)		(105 ft)	(125 ft)	(125 ft)		(155 ft)	145 ft	n/a	170 ft (175 ft)	210 ft (215 ft)	
Outside MN Core	MIH	Narrow Street	80 ft	50 ft	90 ft	n/a	110 ft	140 ft (145 ft)/ 120 ft (125 ft)	140 ft (145 ft)	n/a	170 ft (175 ft)	170 ft (175 ft)	n/a	190 ft (195 ft)	210 ft (215 ft)	n/a
	(w/QGF)	Wide Street	(85 ft)	(55 ft)	(95 ft)		(115 ft)	(125 ft)	(125 ft)		(175 ft)	(175 ft)		200 ft (205 ft)	230 ft (235 ft)	
	Standard	Narrow Street	n/a (7)	n/a (5)	n/a (8)	n/a	n/a (10)	n/a (12)	n/a (12)	n/a	n/a (15)	n/a	n/a	n/a (16)	n/a (21)	n/a
Number of Stories (max)	(w/QGF)	Wide Street												n/a (17)		
	MIH / VIH	Narrow Street	8	n/a (5)	9	n/a	11	14/ n/a (12)	14	n/a	17	16	n/a	19	21	n/a
	(w/QGF)	Wide Street										17		20	23	
Tower Lot Coverage (min-max)								n/a				33-40%		n/a		38-40%
Dwelling Unit Factor	All								680							
Parking																
General (min % of d.u.)	for Group Parking Facilities				50%				40%	50%				40%		
Reduced and Waived Requirements (min % of d.u.)	IRHU-outside Transit Zone		25%		15%	25%	15%		12%	15%				12%		
	AIRS-outside Transit Zone								10%							
	IRHU/AIRS-inside Transit Zone								0%							
	Small Lot 10,000sf or less		50%		30%	50%	30%		0%	n/a				0%		
	Area 10,000-15,000sf					n/a			20%	n/a				20%		
	waived if small # spaces		5		15	5						15				

## SOURCES:

- SOURCE 5C: NYC Zoning Handbook, 2018 Edition



# B SHANGHAI

## CASE STUDY

### SHANGHAI, GUBEI

*Other names:*

*Gubei Gold Street*

*Gubei Pedestrian Promenade*

## CONTENTS

1. INTRODUCTION
2. CHARACTER
3. BACKGROUND
4. EXISTING ANALYSIS
5. ZONING ANALYSIS
6. ZONING HYBRIDS
7. APPENDIX

## TEAM

Sample Case Study

## DATE

2019



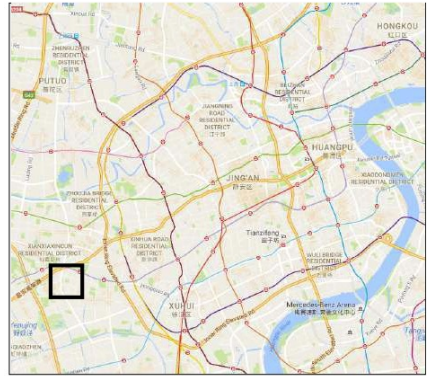




500m



NEIGHBORHOOD



CITY







Golden Boulevard Pedestrian Street

The study area comprises two of six residential blocks surrounding the Golden Boulevard Pedestrian Street. Each compound occupies an entire block and is enclosed by walls and security gates. Within each compound there are shared amenities for the residents including basement parking.

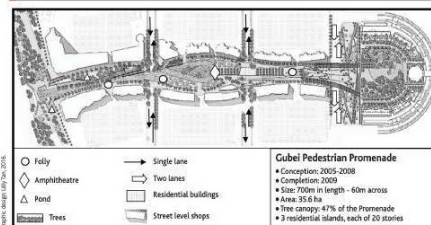
Each of the six surrounding residential blocks has both pedestrian and vehicular access:

- ↖ Pedestrian only entrance onto the Golden Boulevard pedestrian space
- ↖ Vehicular and pedestrian entrance

The Golden Boulevard Pedestrian Street is a well designed and maintained public open space that occupies an area once planned as a vehicular street.



Illustration 2 – Development and amenities of Gubei Pedestrian Promenade



[SOURCE: Bertoncello, "Shanghai: City Planning 'With a Human Face'"]



The central public open space is called the Golden Boulevard Pedestrian Street.

- The ground floors of the surrounding residential towers accommodate commercial uses which help activate the public space including local shops and dining establishments.
- Variety of open space types to provide places for active and passive recreation
- Well maintained spaces with high quality landscaping
- Safe environment patrolled by security guards and without any fences.
- Each of the surrounding residential blocks has a pedestrian entrance gate from the public space.







Each of the surrounding residential compounds provides open space amenities for their residents

- Elaborately decorated open spaces to be viewed from above
- Community amenities may include playgrounds, seating areas, playing fields, indoor gym facilities, and other shared activity spaces.



#### TYPICAL BUILDING TYPES:

- Mixture of 10 to 30 floor high-rise apartment buildings.
- Buildings are primarily residential except the ground floors along the pedestrian street.
- Apartments are all south facing with multiple elevator cores for each building.
- Buildings are mainly parallel to each other and facing south







There are two types of streets serving the study area neighborhood.

#### Internal Side Streets

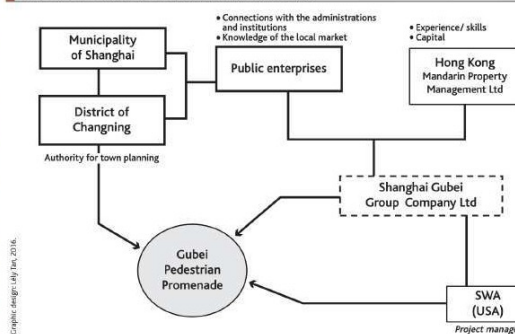
- Sidewalks are fenced off from the residential compounds
- Heavily landscaped sidewalks
- Narrow roadways
- Slow moving traffic
- Bike and pedestrian friendly
- Guarded and gated entryways to the compounds

#### Surrounding Traffic Streets

- Sidewalks are fenced off from the residential compounds
- Wide roadways
- Fast traffic
- Bus transit



Diagramme 1 – Actors of the Gubei Pedestrian Promenade



[SOURCE: Bertonecello, "Shanghai: City Planning 'With a Human Face'"]

"The creative designers have succeeded in making this automobile traffic artery a living space characterized by people meeting and engaging with each other on both a neighborhood and city-wide scale. Far from being an urbanism that is monumental and/or globalized/standardized, the treatment of this public space, conceived on a human scale in a densely populated neighborhood with high-rise apartment blocks, has generated a new landscape whose components put residents first and speak about Chinese culture. The GPP then becomes a bearer of meaning and identity for those who use it, whatever their cultural background; it offers a sought-after urbanity in a city that has hitherto been built on functionalist principles that left scant space for the human dimension."

#### Unique Project Development Approach

The study area is located in Hongqiao neighborhood of Gubei district. This is an area that was targeted by the government as a place to grow foreign businesses. As part of that initiative to attract foreign businesses the semi public-private company, Shanghai Gubei Group was established to develop new housing in the area.

The Gubei Pedestrian Promenade (Golden Boulevard) project including the surrounding blocks of housing is one of the most prominent of their residential ventures. It stands out because of its unique strategy to transform a central roadway into a central public space. This was a radical idea at the time that the landscape firm SWA first proposed it.



Golden Boulevard Pedestrian Street: before & after



Well served neighborhood :

- Retail and Dining corridors
- Retail shopping mall
- Schools
- Employment areas
- Culture – museums
- Parks and recreation
- Metro station

#### Good Transit Access

The study area is located within a 10 minute walk of three Line 10 Metro stations and numerous bus routes.



#### PLANNING PROCESS FROM GOVERNMENT LEVEL TO PRIVATE DEVELOPER

Planning regulations are established at the National government level and modified locally at the city level.

86 F. CHEN

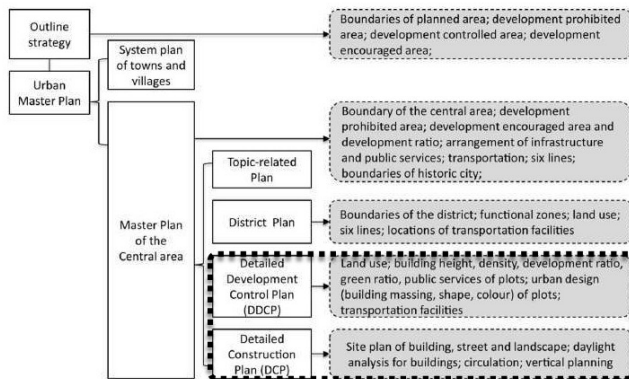


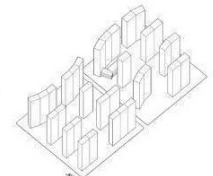
Figure 2. Elements for development control specified in the hierarchical plans.

[SOURCE: Chen, Fei. *The design dimension of China's planning system: urban design for development.*]

These stages of the planning process establish the 'zoning regulations' that control what can be built.



These 'bulk' control regulations in combination establish the typical residential development layouts and building forms.



The result is a formulaic and standardized pattern for residential development as exemplified in this case study



## NOTE 1 – ZONING DISTRICTS

## R2 District

The entire study area is in an R2 zone which applies to medium to high-rise residential development in urban areas that have good environments and are well served by infrastructure and public facilities.

There are four Residential Zoning Classifications in China.

R1 and R2 zones apply to urban areas with good environments that are well served by infrastructure. R1 applies to lower density construction whereas R2 applies to mid. And high-rise buildings.

R3 and R4 zones apply to urban areas that are less well served by infrastructure such as older areas of cities that are fully built out with structures in poor condition.

Classification Codes	Land Use Nature	Detail Description
<b>R</b>	<b>Residential land</b>	<b>Land for residential use.</b>
R1	Class One residential land	Low-rise dwelling buildings with complete public infrastructure facilities and in good environment.
R2	Class Two residential land	Land for multi-stories, medium to high-rise dwelling buildings with complete public facilities and in good condition.
R3	Class Three residential land	Land with relatively complete public facilities, incomplete layout, average environmental conditions, or intermediate land between residential and industrial lands.
R4	Class Four residential land	land mainly for lower quality dwelling buildings.

SOURCE: 城市用地分类与规划建设用地标准 Classification of the urban land utilization and standards for planning construction land use

Community facilities required in residential districts based on size of the development →

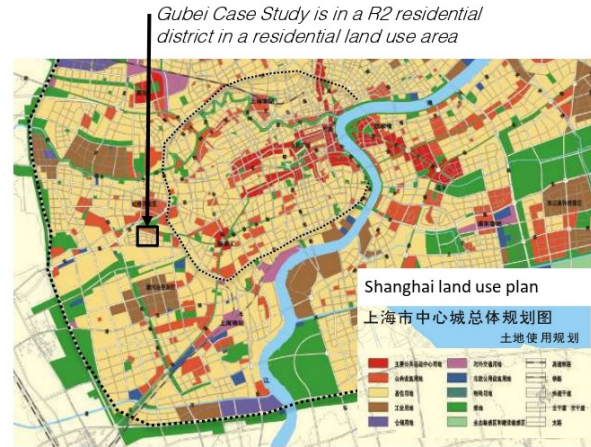


Table 6.0.3 Public Infrastructure Index (m<sup>2</sup>/1000 residents)

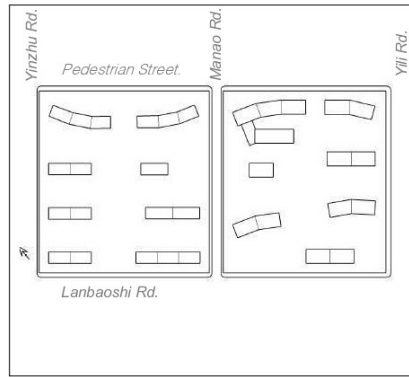
Types	Residential size		Residential District		Residential Sub-district		Housing Group	
	Floor area	Land area	Floor area	Land area	Floor area	Land area	Floor area	Land area
Total area	1668~2293 (2229~4213)	2172~5559 (2762~6329)	968~2387 (1338~2977)	1091~3853 (1191~4585)	302~854 (703~1356)	488~1053 (888~1578)		
Education	600~1206	1609~2409	330~1260	700~2409	160~400	300~500		
Health (including hospitals)	78~158 (178~358)	135~278 (298~548)	38~98	78~228	6~20	12~40		
Culture and sports	185~245	225~645	45~75	65~105	18~24	40~60		
Commercial services	700~910	600~940	450~570	190~400	150~370	100~400		
Community service	58~454	76~668	58~292	76~328	18~32	16~28		
Banking and postal service (including banks, post offices)	20~30 (60~80)	25~50	16~22	22~34	—	—		
Public utilities (including bicycle parking)	40~150 (480~820)	70~360 (500~960)	30~140 (400~720)	50~140 (450~760)	9~10 (380~510)	20~30 (400~550)		
Administration and others	46~96	37~72	—	—	—	—		

Note: ① Values of residential district count in values of residential Sub-district and housing groups; values of residential Sub-district count in values of housing groups.  
② Total land area of public facilities shall meet the requirement of Table 3.0.2.  
③ Total area does not count in others which shall be determined by the planning and design requirements and set the values.  
④ The type of health for residential Sub-district does not include clinics.  
⑤ The type of civil utilities do not include boiler room, which shall be set in the heating room.

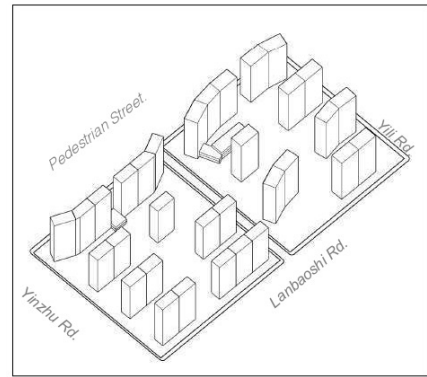
SOURCE: National Standard of the People's Republic of China, Code of Urban Residential Area Planning & Design, 6.0.3 Public Infrastructure



500m

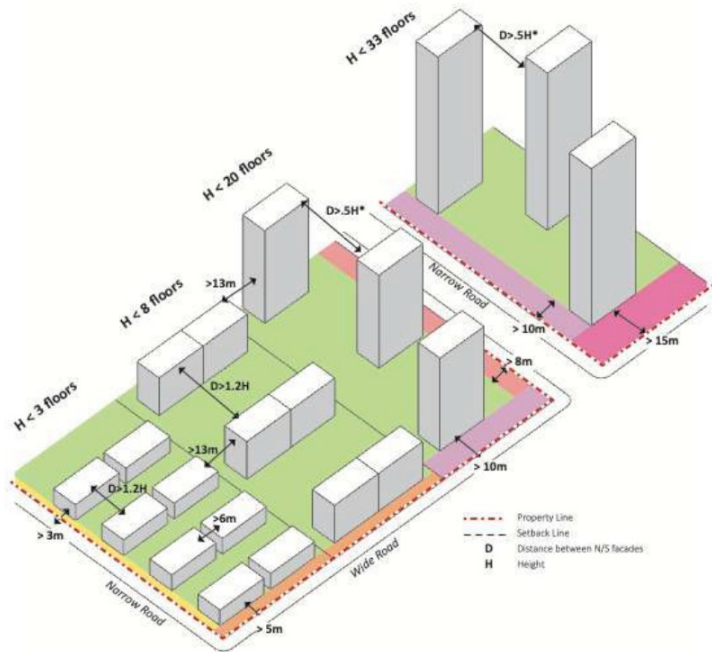


250m



SUMMARY OF ZONING REGULATIONS (See Appendix for supporting research)			NOTES: See notes explained in the APPENDIX
1	ZONING DISTRICTS	R2 (Medium to high-rise buildings in good environments)	There are 4 types of residential districts in China (R1, R2, R3 AND R4).
2	LAND USE	Residential – mostly high rise	Other uses may typically occupy between 5-15% of the total FAR
3	FAR	2.5, or 3 depending on location	FAR = 3.00 inside the 'Inner Ring Rd' and 2.50 outside
4	SITE COVERAGE	Max 25%	Regulations depend on building height and climate zone. Additional Green Coverage regulations apply
5	SETBACKS	H<24m: 3/5; 24<H<60: 8/10; 60<H<100: 10/15; H>100 15/20	Distance regulations ensure sunlight access for all apartments
6	HEIGHT	High-rise category: buildings > 10 floors	There are four standardized building height categories
OTHER NOTABLE ZONING REGULATIONS (See Appendix for supporting research)			
7	DISTANCE B/T BUILDING	Non High-rise: D = 1.2 x H High-rise: 1 hour of sunlight on winter solstice	In the Shanghai climate zone, the distance requirements ensure a min. of 2 hours of sunlight access to all apartments.
8	BUILDING LAYOUT	Entrances should not face to public roads	Layout regulations are concerned with environmental conditions and the relationship to the roadways
9	PARKING	At least 0.6 car/unit	

\*\* See slides 24-31 for explanations



SHANGHAI - GUBEI

Typ. Residential floor height = 3m

N = Narrow Road  
W = Wide Road > 24m  
Width is relative to  
See sunlight regulations

H = Height of southern buildings  
D = Distance between buildings  
D is dictated by the taller building  
See sunlight regulations

ZONING [1]	HEIGHT [2]		FAR [3]	COVERAGE [4]	SETBACKS [5]		DISTANCE b/t BLDGS [6]	
	Floors	Height		% of lot area	N Road	W Road	LONG SIDES	SHORT SIDES
R2 - RESIDENTIAL DISTRICT: for location within the central city:								
LOW-RISE	≤ 3	≤ 11m	0.8	27%	3m	5m	D = 1.2Hm	H ≤ 10 floors D ≥ 6m
MULTI-STOREY	3-8	10<H≤24m	1.6	30%	3m	5m		
HIGH RISE	9-20	24<H≤50m	2.5	25%	8m	10m	H > 10 floors; D ≥ 5H & ≥ 30m; ≥ 2 hrs sunlight	H > 10 floors; D > 13m
	21-33	60<H≤100m			10m	15m		

## NOTES:

This table is showing zoning codes for locations inside Shanghai's first ring road. I'm not sure if this site is considered inside or outside the first ring road which makes a difference to the FAR

[1] ZONING DISTRICT R2 Medium to high-rise buildings in good environments

[2] HEIGHT Heights are organized by categories as shown in the table

[3] FAR FAR determined by building height and location in the city

[4] COVERAGE Permitted site coverage depends on the building heights. 3-8 story buildings have the highest permitted lot coverage...

[5] SETBACKS from property lines - depends on street size and building height

[6] DISTANCE minimum distances between buildings are different depending on whether it's the distance between the facing short or long

## SOURCES:

\*Shanghai Municipal Planning Management Technical Regulations (Land Use Construction Management), Shanghai Municipal People's

Government Order No. 121 (上海市城市规划和建设管理技术规定(上海市人民政府令))

\*GB 50180-93 National Standard of the People's Republic of China, Code of Urban Residential Area Planning & Design

\*GB137-90 Classification of the urban land utilization and standards for planning construction land use (城市用地分类与规划建设用地标准)

## NOTES 1: ZONING DISTRICTS

## NATIONAL REGULATIONS:

There are 4 types of residential districts in China (R1, R2, R3 AND R4).

The study area is in an  
R2 residential zone  
(Medium to high-rise  
buildings in good  
environments)

## R1

## first class residential land

low-rise dwelling buildings  
with complete public  
infrastructure and good  
environment

## 一类居住用地

市政公用设施齐全、布局完  
整、环境良好、以低层住宅  
为主的用地

## R2

second class residential  
land

for multi-stories, medium  
high-rise dwelling buildings  
with complete public  
facilities and good  
environment

## 二类居住用地

市政公用设施齐全、布局完  
整、环境较好、以多、中、  
高层住宅为主的用地 land

## R3

the third class residential  
land

Land with relevantly  
complete public facilities,  
incomplete layout, common  
environmental conditions, or  
the mixed crossing land  
between residence and  
industrial land.

## 三类居住用地

市政公用设施比较齐全、布  
局不完整、环境一般、或住  
宅  
与工业等用地有混合交叉的  
用地

## R4

the fourth class residential  
land

land mainly for humble  
dwelling buildings

## 四类居住用地

以简陋住宅为主的用地



## NOTES 3 &amp; 4: FAR &amp; SITE COVERAGE

## NATIONAL REGULATIONS:

The national regulations controlling the permitted building density and site coverage depend on:

- The climate zone
- The building height

## NOTE 4: BUILDING DENSITY - FAR

Because the study area is High-rise and is located in Shanghai, which is in the Climate Zone III, the maximum permitted Site Coverage is 20%

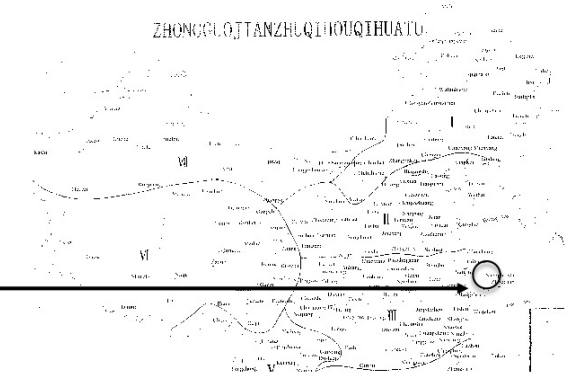
## NOTE 3: BUILDING DENSITY - FAR

Because the study area is High-rise and is located in Shanghai, which is in the Climate Zone III, the maximum permitted FAR is 3.5. However, Shanghai local regulations limit the FAR for the study area to 2.50 (see next page)

The Shanghai study area is in Climate Zone III

Permitted building coverage ranges from 20% to 35% depending on the climate zone and the building height

FARs range from 1.00 to 3.50 depending on the climate zone and the building height



5.0.6 Residential net density shall meet the following requirements:

5.0.6.1 Residential building coverage ratio shall not be greater than the value in Table 5.0.6-1;

Table 5.0.6-1 Residential Building Coverage Ratio (%)

	Building-Climate Regions		
	I, II, VI, VII	III, V	IV
Low-rise	35	40	43
Multi-story	28	30	32
Medium high-rise	25	28	30
High-rise	20	20	22

Note: If three different building types represented in the area, the residential building coverage ratio may fall within the range given by the values of the corresponding building types.

5.0.6.2 The net density of residential floor area should not be greater than the value in Table 5.0.6-2.

Table 5.0.6-2 Net Density of Residential Floor Area (×10,000m<sup>2</sup>/ha)

	Climate region for building		
	I, II, VI, VII	III, V	IV
Low-rise	1.10	1.20	1.30
Multi-story	1.70	1.80	1.90
Medium high-rise	2.00	2.20	2.40
High-rise	3.50	3.50	3.50

Note: ① If three different building types represented in the area, the net density of residential floor area may fall within the range given by the values of the corresponding building types.

② Not including area of underground floor.

SOURCE: National Standard of the People's Republic of China, Code of Urban

## NOTES 3 &amp; 4: FAR &amp; SITE COVERAGE

## LOCAL TO SHANGHAI REGULATIONS:

The Shanghai local regulations limit the FAR for the study area to 2.50 and the site coverage to 25%.

- 1.Low-rise single family
- 2.Other low-rise
- 3.Residential including commercial-residential & hotel style apartments:
  - a] Multiple b] High-rise
- 4.Commercial & office including apartment style offices:
  - a] Multiple b] High-rise
- 5.Industrial:
  - a] Low-rise b] Multiple c] High-rise
- 6.Public green space

[1] Central City  
[A] within inner ring  
[B] between inner & outer ring road

[2] Outside Central City

建筑密度和建筑容积率控制指标表

建筑类型	建筑密度	[1] 中心城(环线以内地区)				[2] 中心城外(环线以外地区)			
		[1A] 内环线以内地区		[1B] 内环线以外地区		[2] 中心城		一般镇和其它地区	
		D	FAR	D	FAR	D	FAR	D	FAR
1 低层独立式住宅	26%	0.4	1.8%	0.25	1.8%	0.3	1.8%	0.3	1.8%
2 其他低层居住建筑	30%	0.9	27%	0.8	25%	0.7	25%	0.7	25%
3a 居住建筑(含酒店式公寓)	多层	33%	1.8	36%	1.6	30%	1.4	30%	1.4
3b 居住建筑(含酒店式公寓)	高层	25%	2.5	25%	2.0	25%	1.8	25%	1.8
4a 商业、办公建筑(含酒店式公寓)	多层	50%	2.0	50%	1.8	50%	1.6	40%	1.2
4b 商业、办公建筑(含酒店式公寓)	高层	50%	4.0	45%	3.3	40%	2.5	40%	1.2
5a 工业建筑	低层	60%	1.2	50%	1.0	40%	1.0	40%	1.0
5b 工业建筑(一般通用厂房)	多层	45%	2.0	40%	1.5	35%	1.2	35%	1.2
5c 工业建筑	高层	30%	3.0	30%	2.0	—	—	—	—
6 公共绿地		按照建设部《公园绿地设计规范》的规定执行							

注: ① D—建筑密度, FAR—建筑容积率; ② 本表仅适用于未编制详细规划的, 小于或等于2万平方米的单一基地; ③ 本表规定的指标为上限。

Building density, FAR for single land parcel <= 30,000m<sup>2</sup>

表三

建筑容积率折减率表



#### NOTE 4: GREEN COVERAGE REQUIREMENTS

At least 30% of the lot area must be “green” space. Green space refers to open land areas which are pervious (not paved) and are planted or landscaped.

*In the study area at least 30% of the lots must be preserved for Green Space*

7.0.1 Green space in residential areas shall include public green space, green space attached to residential buildings, green space attached to public infrastructure and roads, green space on the roof of underground or semi-underground construction covered by soil with enough depth for local tree species and accessible to residents.

7.0.2 Green space in residential areas shall be in accordance with the following requirements:

7.0.2.1 All possible land available shall be used as green space, and wall vegetation should be encouraged;

7.0.2.2 Green space between residential buildings shall be carefully planned and designed; the area of green space between residential buildings shall meet relevant requirements of China's Code.

7.0.2.3 Green space ratio shall not be less than 30% in new districts and should not be less than 25% in old city redevelopment areas.

7.0.3 The layout of green space in residential areas shall be coordinated with the residential area plan and existing environmental and land use conditions. It shall constitute an integrated system of concentrated and dispersed spaces. Existing trees and green spaces within the scope of the planning area should be preserved and used.

7.0.4 Public green space in residential areas shall include central green space, playgrounds for the elderly and children, and other green spaces according to the configuration of residential area, and it shall be in accordance with the following requirements;

7.0.4.1 Central green space shall be set up in accordance with the following requirements;

(1) Shall be in accordance with those specified in Table 7.0.4-1. Items in the table can be chosen according to specific conditions;

Table 7.0.4-1 Requirements for Each Level of Central Green Space

Level of central green space	Design Content	Requirement	Minimum size (ha)
Residential District Park	Trees, lawns, flowers, flower beds and water-scape, pavilions and sculptures, kiosks, small tea-houses, facilities for elderly and children, parking spaces, pavement, etc.	Park layout shall have a clear functional division	1.00
Garden	Trees, flowers, lawns, flowerbed and water-scape, sculpture, facilities for children, pavement, etc.	Garden layout shall have some functional division	0.40
Housing Group Green Space	Trees, flowers, lawns, tables and benches, simple facilities for children, etc.	Flexible layout	0.04

SOURCE: National Standard of the People's Republic of China, Code of Urban Residential Areas Planning & Design, 7.0.1 Green Space

#### NOTE 5: SETBACKS

Setback minimums depend on the height of the building and it's orientation to the road.

*National Setback regulations establish different setbacks from the roadway depending on the height and orientation of the buildings to the street regarding their short and long sides.*

8.0.5.8 The minimum distance from the road boundary to construction or building in residential area should be in accordance with those specified in Table 8.0.5;

Table 8.0.5 The Minimum Distance From the Road Boundary to Construction or Buildings (m)

Relationship with the construction or building	Level of Roads	Residential District Roads			Housing Group Roads
		High-rise	Residential Sub-district Roads	Residential Lanes	
Building facing to the roads	With exit	High-rise	5.0	3.0	2.0
	Multi-layer	3.0	3.0	2.0	2.0
Side wall facing to the roads	Without exit	—	5.0	2.5	2.5
	High-rise	4.0	2.0	1.5	1.5
Enclosure wall facing to the roads	Multi-layer	2.0	2.0	1.5	1.5
	High-rise	1.5	1.5	1.5	1.5

Note: For Residential District Roads, the road boundary is given by the Road Red Line. For Residential Sub-district level roads, Housing Group-level roads, and Residential Lanes, the road boundary is given by the outer edge of the sidewalk. When there is no sidewalk along Residential Sub-district Roads, the road boundary is given by the edge of the road.

SOURCE: National Standard of the People's Republic of China, Code of Urban Residential Areas Planning & Design, 8.0.5.8 Roads

第三十四条 沿城市道路两侧新建、改建建筑，除经批准的详细规划另有规定外，其后退道路规划红线的距离不得小于下表所列值。

道路宽度范围(米)	建筑高度	D≤24米	D>24米
h≤24米	3	3	5
24<h≤60米	8	8	10
60<h≤100米	10	10	15
h>100米	15	15	20

注：h——建筑高度；D——道路规划红线宽度

*Shanghai Setback regulations establish different setbacks from the roadway depending on the height of the buildings*

SOURCE: Shanghai Urban Planning Management Technical Regulations

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## NOTE 6: HEIGHTS

Residential building heights are standardized into the following height categories:

**Low-rise : 1-3 floors (<10m)**

**Multi-story : 4-6 floors**

**Medium high-rise: 7-9 floors**

**High-rise: >10 floors**

## Appendix I Explanation of Terms

## 附录一 名词解释

## 1. 建筑容积率 (容积率) (Translation)

指建筑物地面以上各层建筑面积的总和与建筑基地面积的比值。

## 2. 建筑密度 (Translation)

指建筑物底层占地面积与建筑基地面积的比率 (用百分比表示)。

## 3. 低层建筑 (Translation)

指高度小于、等于 10 米的建筑, 低层居住建筑为一层至三层。

## 4. 多层建筑 (Translation)

指高度大于 10 米, 小于、等于 24 米的建筑, 多层居住建筑为四层至八层。

## 5. 高层建筑 (Translation)

指高度大于 24 米的建筑, 高层居住建筑为八层以上 (不含八层)。

## 6. 公寓式办公建筑

指单元式小空间划分, 有独立卫生设备的办公建筑。

## 7. 办公建筑

指非单元式小空间划分, 按层设置卫生设备的办公建筑。

## 8. 商业建筑

1. The building volume ratio: refers to the ratio of the total area of the building above the building floor to the area of the building base.

2. Building density: refers to the ratio of the floor space of the building to the area of the building base (expressed as a percentage).

3. Low-rise building: Refers to buildings with a height less than or equal to 10 meters, and low-rise buildings with one to three floors.

4. Multi-story building: Refers to buildings with a height greater than 10 meters, less than or equal to 24 meters, and Multi-story residential buildings with four to eight floors.

5. High-rise building: Refers to buildings with a height of more than 24 meters, and High-rise buildings with more than eight floors (excluding eight floors).

6. Apartment-style office building: Refers to the unitary small space division, office buildings with independent sanitary equipment.

7. Office building: Refers to non-unitary small space division, office buildings with sanitary facilities installed by layers.

## SOURCE:

Shanghai Municipal Planning Management Technical Regulations (Land Use Construction Management), Appendix Explanation of Terms

## TYPICAL CHINA RESIDENTIAL BUILDING TYPES:



## SOURCES

[1] Arup zoning analysis for Wuxi project (K. Dunham files)

[2] Arup China residential studies (K. Dunham files)

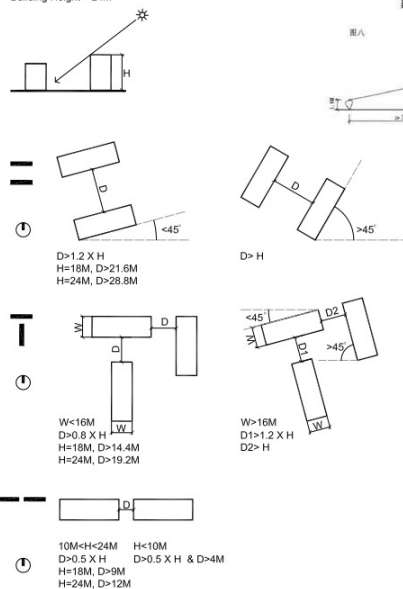
## NOTE 7: DISTANCE BETWEEN RESIDENTIAL BUILDINGS

## • FOR NON HIGH-RISE BUILDINGS:

Minimum distance between buildings is dependent on building height and orientation to south angle.

## Shanghai Urban Planning Technical Code

Requirement for Distance between Residential Buildings  
Building Height < 24M



The Study Area is in a large city in Zone 3 which requires at least 2 hours of direct sunlight between 8AM and 4PM for every unit as calculated on the winter solstice

## • FOR HIGH-RISE BUILDINGS

Minimum distance between buildings is dependent achieving minimum sunlight access requirements.

5.0.2.1 The sunlight standards of residential buildings shall be in accordance with those specified in Table 5.0.2-1, and shall also meet the following requirements in the relevant particular cases:

(1) Residential buildings for the elderly shall receive a minimum of two hours of sunlight on the Winter Solstice.

(2) Any additions to original buildings shall not reduce the sunlight access of neighboring residential buildings.

(3) The sunlight duration of new residential buildings in old town redevelopment areas may fall below the standard, but it shall not be shorter than one hour on a "Great Cold Day" (usually falling on January 19 through January 21).

Table 5.0.2-1 Sunlight Standard for Residential Buildings

Building-Climate Regions	Climate region I, II, III		Climate region IV		Climate region V, VI
	Large city	Medium and small city	Large city	Medium and small city	
Day used for sunlight standard	Winter Solstice Day		"Great Cold Day"		
Duration hours (h)	≥2	≥3	≥1		
Effective time period (h)	8~16		9~15		
Reference point	Ground floor windowsill level				

Note: ① Climate region VI buildings shall be in accordance with the requirements of Article A.0.1 in Appendix A.  
② Windowsill level of ground floor refers to the 0.9 m high above indoor floor on the outer wall of the building.

5.0.2.2 Distance between the front walls of buildings may be regulated by the distance-to-height ratio for different orientations determined by the sunlight standard or regulated by the discount value of building separation for different orientation in Table 5.0.2-2.

SOURCE: National Standard of the People's Republic of China, Code of Urban Residential Areas Planning & Design, 5.0.2.1 Residential Buildings



## NOTE 7 continued: DISTANCE BETWEEN RESIDENTIAL BUILDINGS

## FOR HIGH-RISE BUILDINGS

Minimum distance between buildings is dependent achieving minimum sunlight access requirements.

## 3. Sun-lighting Requirements for Residential Buildings

## National Code

Access to sunlight is a fundamental factor in the regulation of building layouts. The national codes establish a minimum number of hours of direct sunlight to residential units based on climatic zones. There are two main factors for the criterion of sunlight regulations:

- **Latitude and local climate:** Higher latitude (north), wider distance
- **Size of the city:** Bigger city, lower requirement (due to the living density and land use).

Shanghai is in the climate zone II

Architecture climate zone	I、II、III、VII Climate zone		IV Climate zone		V、VI Climate zone	
	Big city	Medium and small city	Big city	Medium and small city		
Typical day for sunlight calculation	Severe cold day			Midwinter day		
Sunlight hours(h)	≥2	≥3		≥1		
Efficient sunlight period(h)	8~16			9~15		
Location for the calculation	The window sill of ground floor					

The local Sun-lighting codes over-ride the national minimum distance requirements: as long as a project layout can meet the local sun-lighting requirements - it does not need to obey the local distance between building requirements.

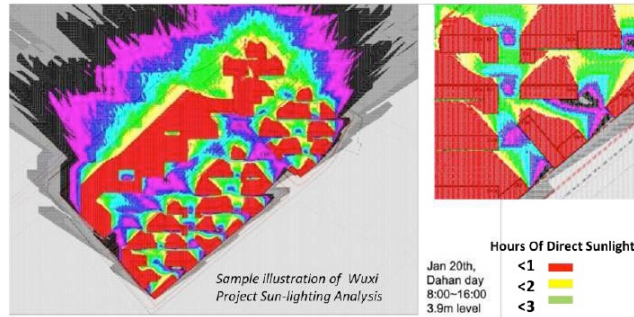
## Sunlight Evaluation Computer Software

The sun-lighting access is tested using sun-lighting computer software that illustrates the number of hours a building surface at a designated height receives direct sunlight.

## Sunlight Evaluation Criteria:

Basis for evaluation is the sunlight access on:

- **Winter Solstice Day** (21st-23rd December, 22<sup>nd</sup> solar term of Chinese Lunar Calendar) and
- **Greater Cold Day** (around 20th January, 24<sup>th</sup> solar term of Chinese Lunar Calendar)



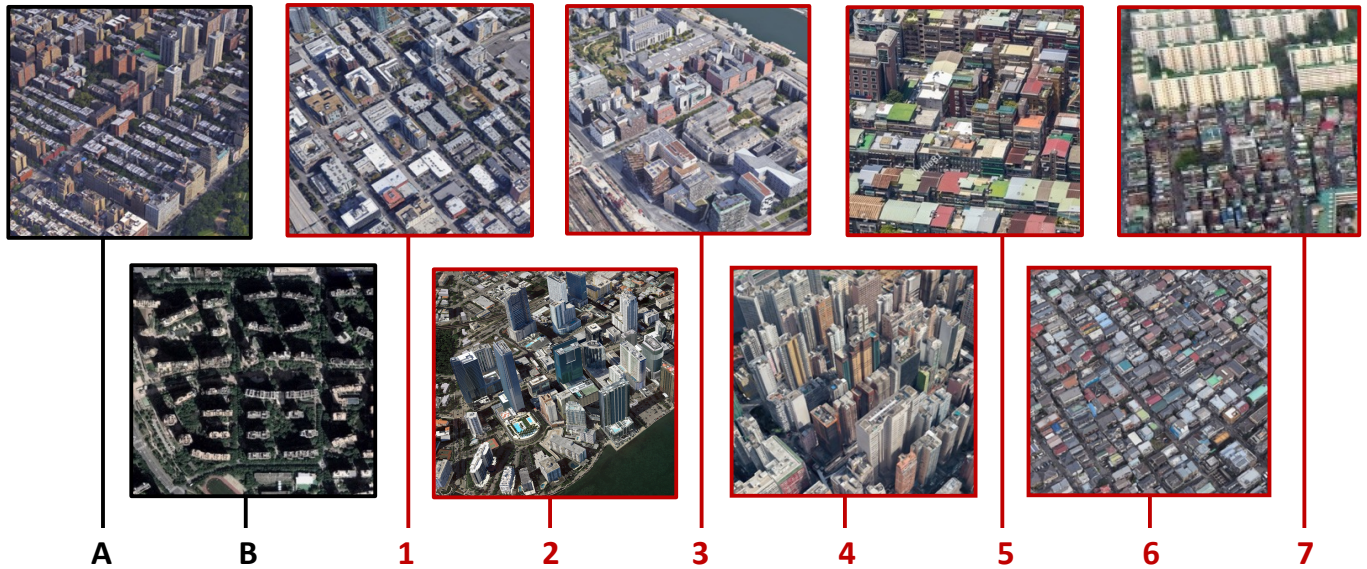
# NINE INTERNATIONAL CASE STUDIES IN RESIDENTIAL ZONING

## INSTRUCTOR-PROVIDED CASE STUDIES:

- A. NEW YORK CITY, UPPER WEST SIDE
- B. SHANGHAI, GUBEI

## 2021 STUDENT CASE STUDY TEAMS :

- 1. PORTLAND, PEARL DISTRICT      Joey Xu and Vicky Zhou
- 2. MIAMI, BRICKELL      Mariana Hinojosa and Juan Moreno
- 3. PARIS, RIVE GAUCHE      Jin Jong Kim and Yuan Qin
- 4. HONG KONG, NORTH POINT      Mengqi Cao and Zixuan Zha
- 5. TAIPEI, ZHONGSHAN      Jiuyu Wang and Hui Lu
- 6. TOKYO, SHINJUKU      Hanzhang Yang and Priska Marianne
- 7. SEOUL, GEUMHO-DONG 3-GA      Soyeon Kim and Yiyi Jiang



	A NEW YORK UPPER WEST SIDE	B SHANGHAI GUBEI	1 PORTLAND PEARL DISTRICT	2 MIAMI BRICKELL	3 PARIS, RIVE GAUCHE	4 HONG KONG, NORTH POINT	5 TAIPEI ZHONGSHAN	6 TOKYO SHINJUKU	7 SEOUL GEUMHO- DONG
LAND USE	Residential + Commercial	Residential	Residential + mixed	Residential + mixed	Residential + mixed	Residential + Commercial	Residential + Commercial	Residential + mixed	Residential
FAR	3.4, 10.0	2.5	3.0, 6.0	5.0, 11.0, 18.0	2.69	8.0, 9.0	2.25, 4.0	3.0, 4.0	2.0, 2.5, 4.0
SITE COVERAGE	65 - 100%	25%	100%	80%	40 - 50%	33-37.5% for tower over base	45 - 50%	60%	50 - 60%
STREET SETBACK	Max 3m	3 - 20m	5' - 10' 1.5 - 3m	10'	NA	NA	3m	NA	0 - 1.5m
HEIGHT	75' - 210' (8-20 floors)	> 30m (10-34 floors)	65' - 100' (7 - 10 floors)	(6 - 144m) 2 - 48 floors	37m (~ 4 floors)	110-120m (35-40 floors)	(~ Max 40m) 4 floors	(30 - 40m) 3-4 floors	(~21 - 105m) 7 - 35 floors





# 1 PORTLAND

## CASE STUDY

### **Pearl District Portland, Oregon**

## CONTENTS

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

## TEAM

Joey Xu  
Vicky Zhou

## DATE

3/2021





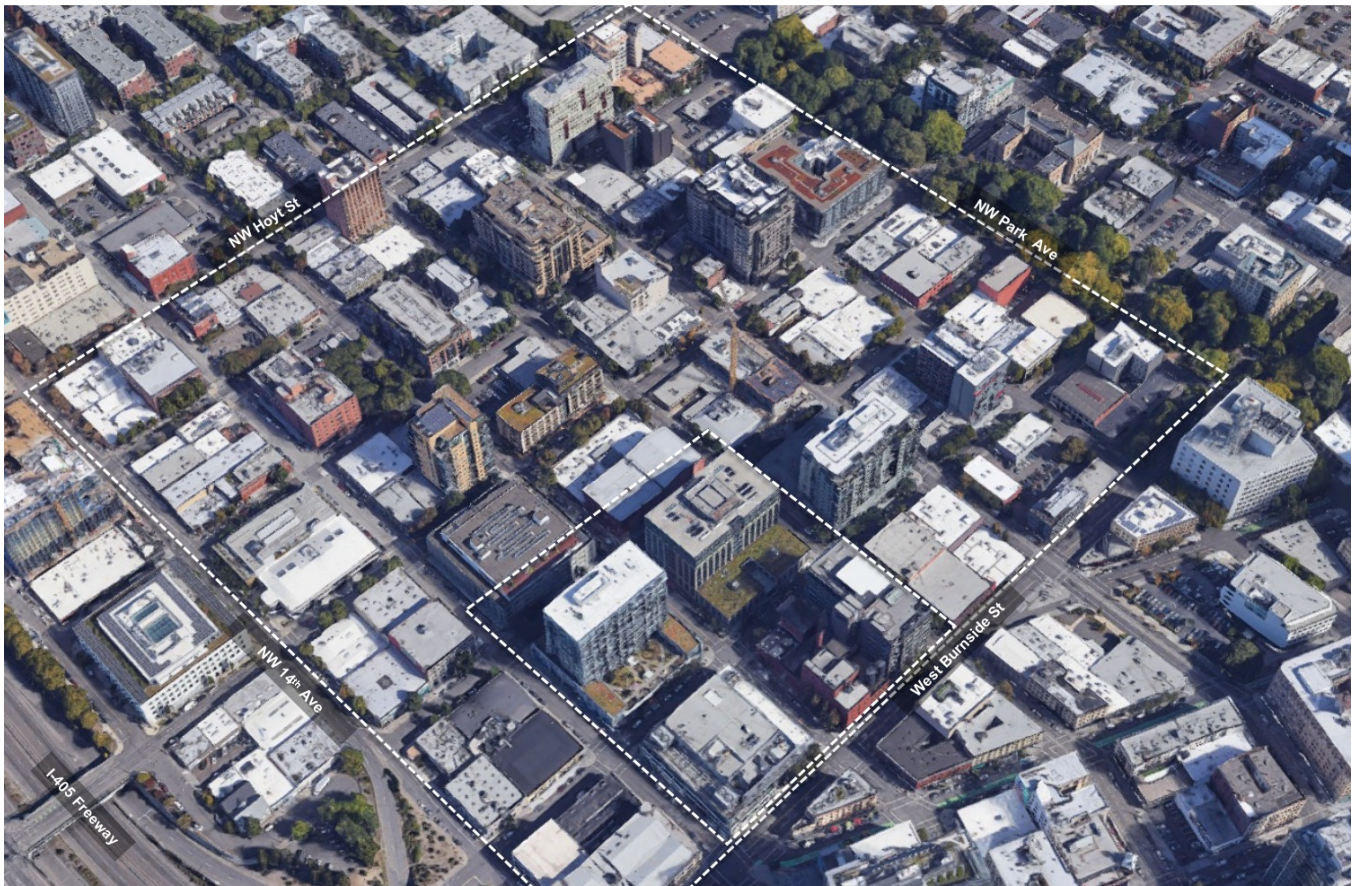
STUDY AREA



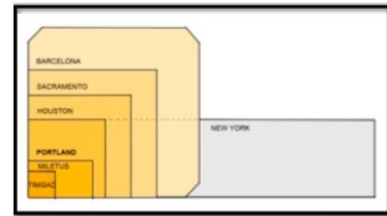
NEIGHBORHOOD FOCUS BLOCKS



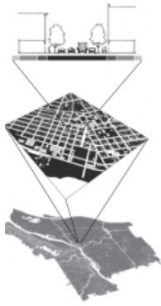
CITY





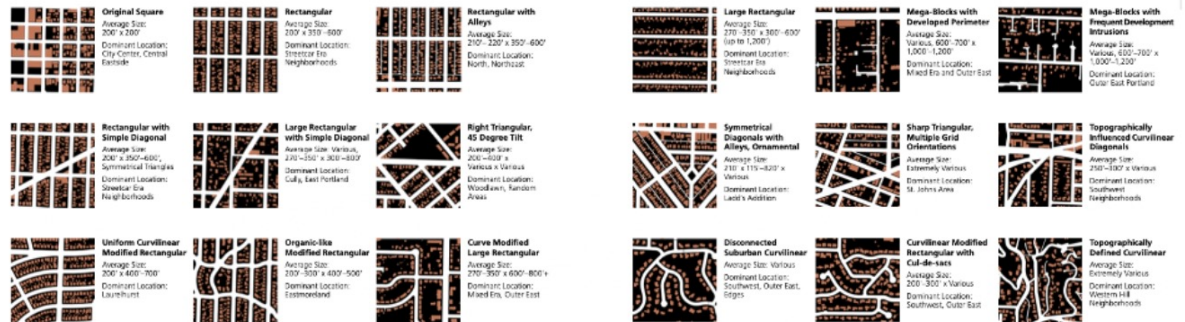


Portland's block sizes to other cities in comparison to others



### Beyond the 200 x 200: Portland's Various Block Structures

A city's structure of streets and blocks serves as its urban DNA, shaping its development long into the future. While Downtown Portland's system of compact 200' by 200' blocks is sometimes seen as Portland's fundamental pattern, Portland includes a diverse and varied range of urban patterns. These examples highlight the wide range of block structures found in Portland (they are not intended to represent what is typical or most common).



Map 3: Predominant Ground Floor Land Use



### Retail Vacancy Rate

2019	2018	2017	Annual % Change
7.1%	7.2%	6.7%	-1.39%

National, 2018: 7.04%



"20-minute Neighborhood"





### Eco-Roofs



In the CX, EX, RX, and IG1 zones, new buildings with a net building area of at least 20,000 square feet must have an ecoroof cover at least 60 percent of the roof area.

- Pearl District Tour**
- Balfour Guthrie Building
  - Brewery Blocks, Block 4
  - Ecostrut Building \*
- Downtown Tour**
- Broadway Building
  - Hamilton West Apartments
  - Mosaic Condominiums
  - Museum Place Condominiums
  - Native American Student/Community Center\*
  - Stephen Epler Building\*
- Inner Eastside Tour**
- B&O Building\*
  - Buckman Terrace
  - Hawthorne Condominiums
  - Hawthorne Hotel\*
  - Multnomah County Building\*
  - People's Food Co-op\*
- BEAVERTON**
- Clean Water Services\* (not on map)
- \* publicly Accessible - see chart for details



### Street Trees

Citywide: The Pearl:

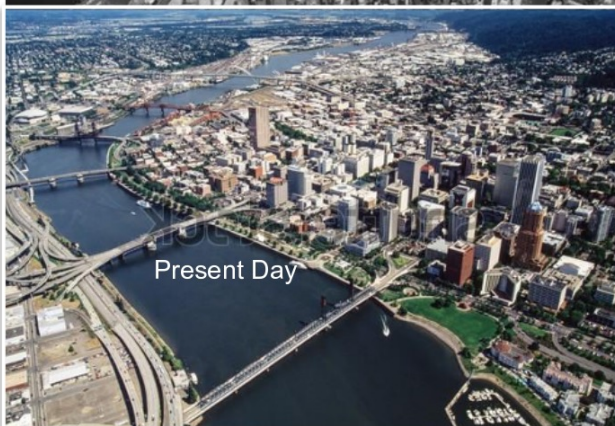
Pearl Street Tree Inventory 2016  
Trees by Size







Historic structures  
are woven into the  
fabric of the  
neighborhood  
throughout the Pearl.



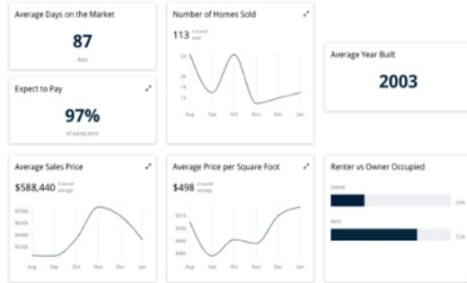


CASE STUDY	SECTION	TITLE
Pearl District, Portland	3] Background	3.2] demand-oriented development

## Trend: Smaller Units

### The Pearl District Market Trends®

The Pearl District market trends indicate an increase of \$12 (2%) in the average price per square foot over the past 6 months. The average sale price is up to \$579,347 from \$513,427 six months ago. The average time on market for properties in The Pearl District is 87 days. Buyers can expect to pay 97% of asking price.



	2001	2011	Change
Households (Returns)	4,709	8,326	3,617
Population (Exemptions)	5,662	10,402	4,740
Income (AGI) in thousands of dollars	217,744	701,413	483,669

## Average Rent in Portland, OR

Last updated December 2020

Average Rent	Y-o-Y Change	Average Apartment Size
\$1,484	-3%	759 sq. ft.

## Portland, OR Apartment Rent Ranges



The Pearl: \$1,792

CASE STUDY	SECTION	TITLE
Pearl District, Portland	3] Background	3.3] smart growth

OREGON LEGISLATIVE ASSEMBLY—1969 REGULAR SESSION

Engrossed  
Corrected

## Senate Bill 10

(Printing engrossed ordered by Committee on Rules and Resolutions,  
March 6, 1969)  
(Including amendments by Senate March 6)

Sponsored by Senator BATESON, Representative ROGERS, Senators IRELAND, RAYMOND, WILLNER, Representatives CARSON, HARTUNG, PECK (at the request of the Interim Committee on Agriculture)

OREGON LEGISLATIVE ASSEMBLY—1973 REGULAR SESSION

Enrolled

## Senate Bill 100

Sponsored by Senators MACPHERSON, HALLOCK

### CHAPTER

#### AN ACT

Relating to land use; creating new provisions; amending ORS 215.055, 215.510, 215.515, 215.535 and 453.345; and appropriating money.

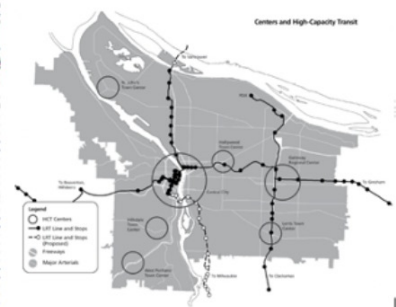
Be It Enacted by the People of the State of Oregon:

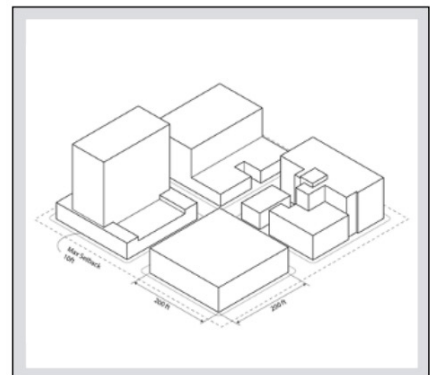
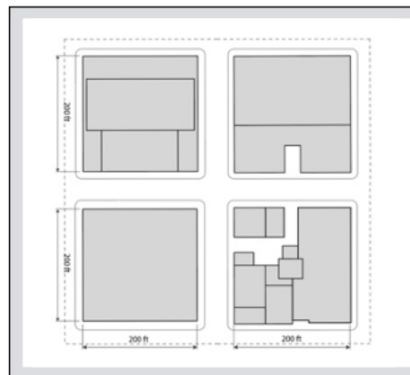
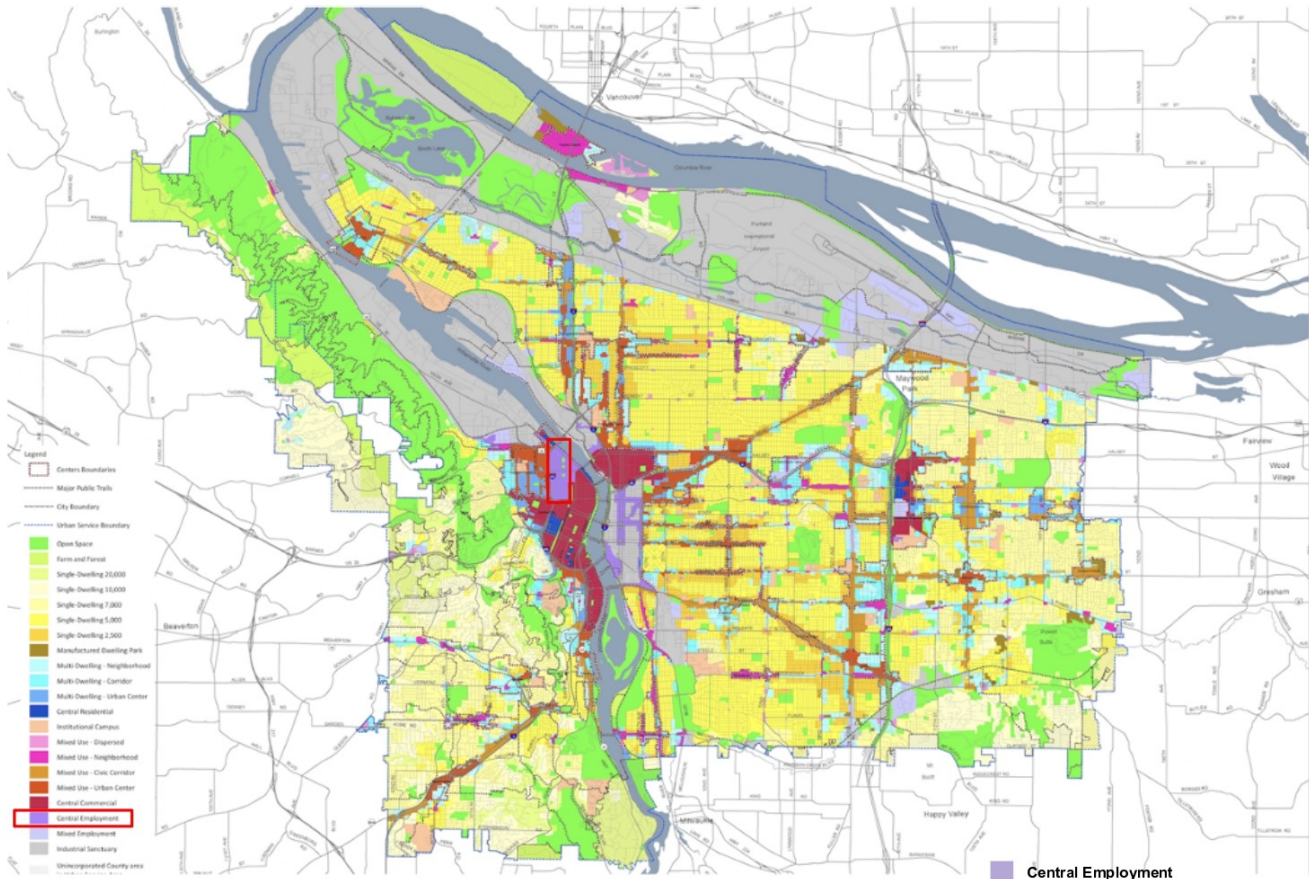
#### PART I INTRODUCTION PREAMBLE

SECTION 1. The Legislative Assembly finds that:  
(1) Uncoordinated use of lands within this state threaten the orderly development, the environment of this state and the health, safety, order, convenience, prosperity and welfare of the people of this state.  
(2) To promote coordinated administration of land uses consistent with comprehensive plans adopted throughout the state, it is necessary to establish a process for the review of state agency, city, county and special district land conservation and development plans for compliance with state-wide planning goals and guidelines.  
(3) Except as otherwise provided in subsection (4) of this section, cities and counties should remain as the agencies to consider, promote and manage the local aspects of land conservation and development for the best interests of the people within their jurisdictions.  
(4) The promotion of coordinated state-wide land conservation and development requires the creation of a state-wide planning agency to prescribe planning goals and objectives to be applied by state agencies, cities, counties and special districts throughout the state.



## Development-Oriented Transit → Streetcar system





SUMMARY OF ZONING REGULATIONS (See Appendix for supporting research)				NOTES:
1	ZONING DISTRICTS	EXd	Central City	Name each zoning district that applies to the study area
2	LAND USE	Resid, Office, Industry	Multiple	Permitted land uses in each zoning district
3	FAR	3.0	6.0	Maximum permitted Floor Area Ratio
4	SITE COVERAGE	100%	100%	Maximum permitted site coverage
5	SETBACKS	0 / 10ft	0 / 5 ft	Front, Side & Rear yard setbacks from property lines
6	HEIGHT	65 ft	100 ft	Minimum and maximum height controls
OTHER NOTABLE ZONING REGULATIONS				
7	Bonus FAR	+2.0	+3.0	with inclusionary housing bonus at affordable rent
8	Height Bonus	-	75 ft	Max housing height bonus, extra height must be housing
9	Set back	14 ft	-	Minimum Building setback abutting residential zoned lot
	Eco Roof	-	60% roof	New Development 20,000 sf require green roof





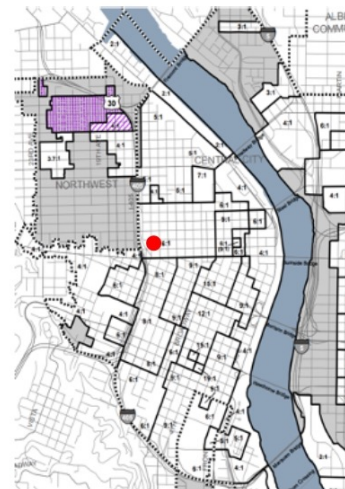
Business Districts

- Business District
- Overlapping Business Districts



Max Building Height

- Height determined by base zone
- Plan districts
- Area eligible for height increase

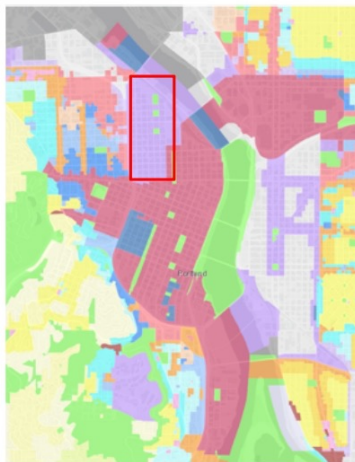


Max FAR Limit

- FAR determined by base zone
- Plan districts

## 3 ZONING ORDERS

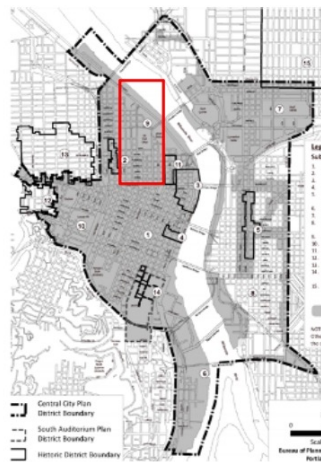
Base Zone



Central Employment

The EX zone allows a full range of high density commercial, light industrial, institutional and residential uses. This zone is intended for sites in or near the Central City and in Gateway.

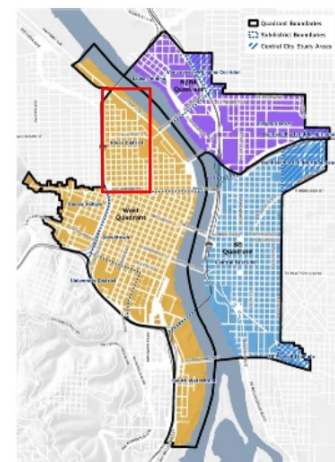
Overlay Zone



Design Overlay Zone

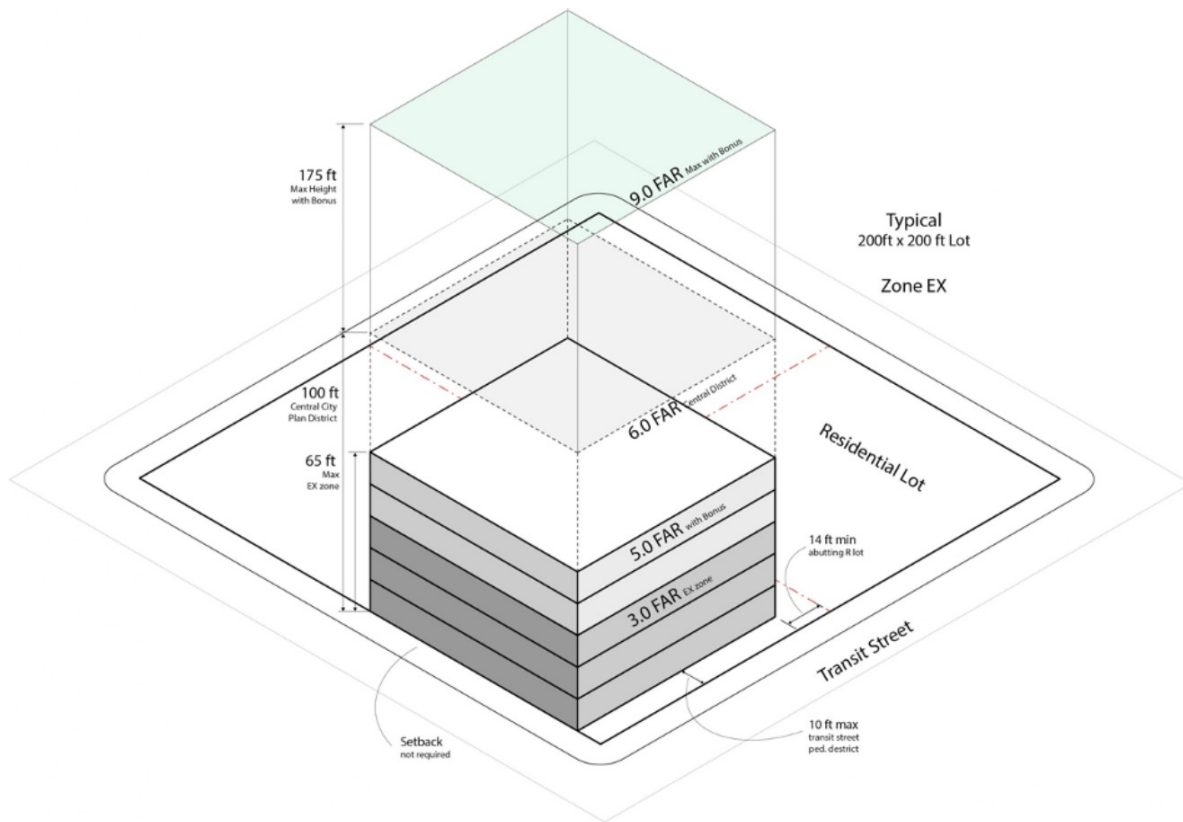
The Design (d) overlay zone promotes the conservation, enhancement, and continued vitality of areas of the City with special scenic, architectural, or cultural value.

Central City Plan District

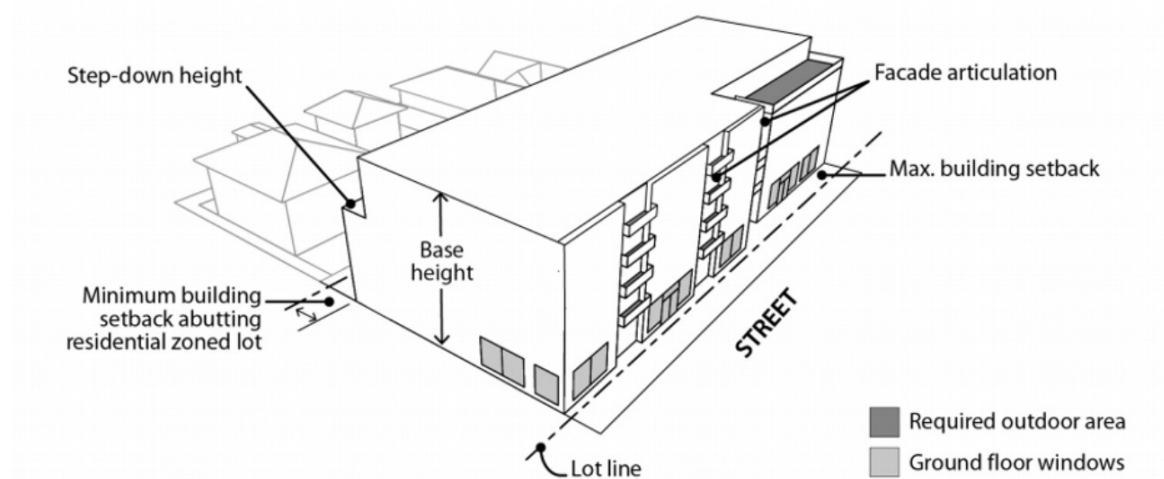


CC2035 Boundary

The regulations address the unique role the Central City plays as the region's premier center for jobs, health and human services, tourism, entertainment and urban living.



### Some building form and setback development standards





PROS	Cons
<ul style="list-style-type: none"> <li>• Mixed-use development</li> <li>• Pedestrian-friendly urban designs (curve cuts)</li> <li>• Transit oriented, mixed mode</li> <li>• Eliminate unnecessary parking spaces</li> <li>• Maximize shop front spaces</li> <li>• Require buffer and offset for residential</li> <li>• Low carbon footprint per capita</li> <li>• -</li> <li>• -</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of urban space</li> <li>• Possible urban noise</li> <li>• Code difficult to follow</li> <li>• Height bonus block sunlight</li> <li>• Encourage demolition and new construction</li> <li>• Max parking req. encourage parking lot/garage</li> <li>• -</li> <li>• -</li> <li>• -</li> </ul>

### Recommendations

- Increase the number of underground parking spaces for commercial/office
- Create incentives for renovations to avoid too much new constructions
- Balance the development of commercial and residential
- Encourage accessible privately owned public space, not just eco roofs

## 5A] APPENDIX - BIBLIOGRAPHY

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# 2 MIAMI

CASE STUDY

## MIAMI - BRICKELL

CONTENTS

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

TEAM

JUAN SEBASTIÁN MORENO  
MARIANA HINOJOSA R

DATE

Mar. 15, 2021

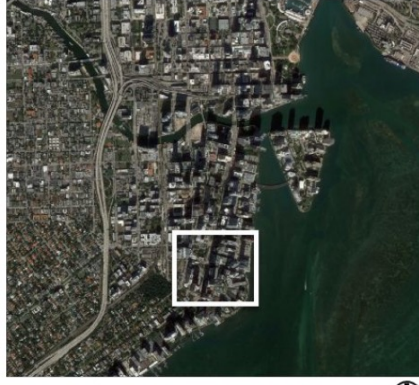




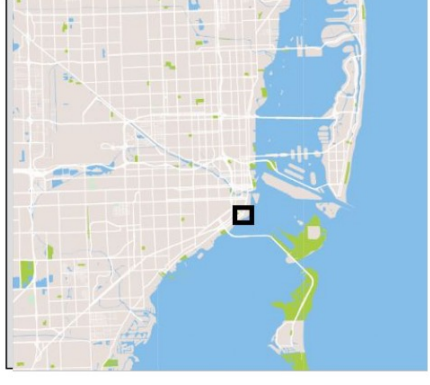
STUDY AREA



NEIGHBORHOOD



CITY







ARCHITECTURE + DESIGN

## How an Unlikely Plot of Land Will Transform Miami

Welcome to The Underline, the 10-mile linear park bringing wellness, art, and safety to the vibrant coastal city



Image credits: Miami Herald, Architectural Digest, and Google Street View

Three elements define Brickell's character:

1. Its **density**, as a result of being an urban core
2. Its **increasing walkability**, using sidewalks and transforming a public transit corridor
3. Its **mixture of uses**, with residential high-rises, retail ground floors and commercial uses (mostly for hotels)

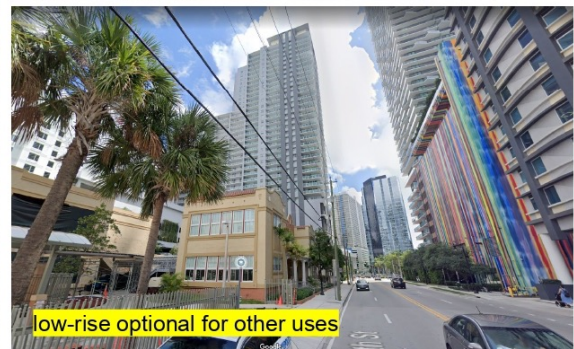
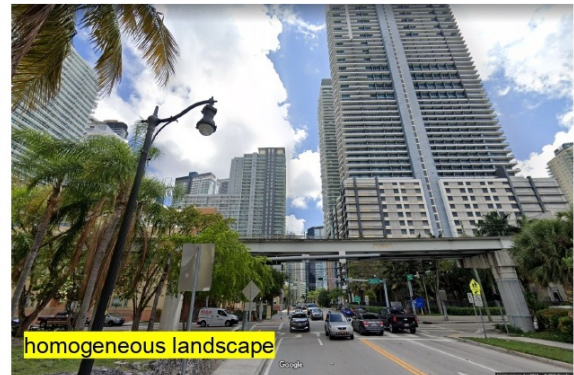
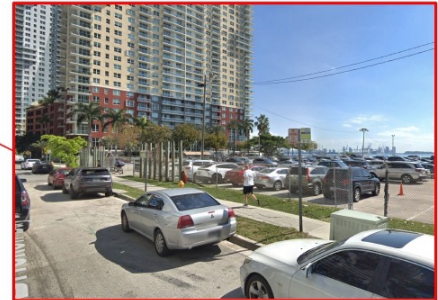
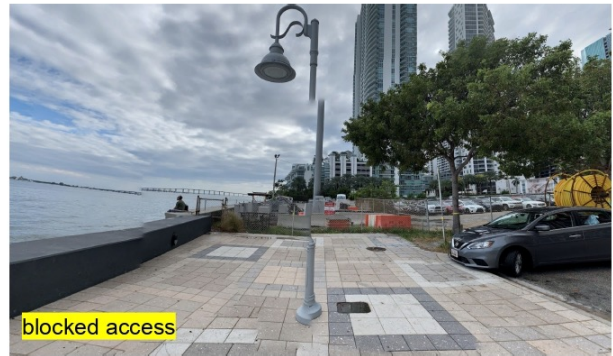
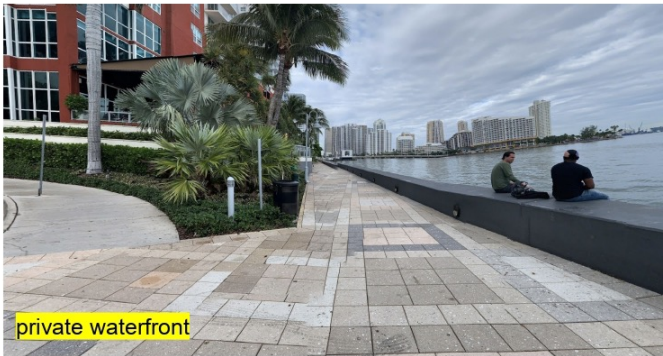
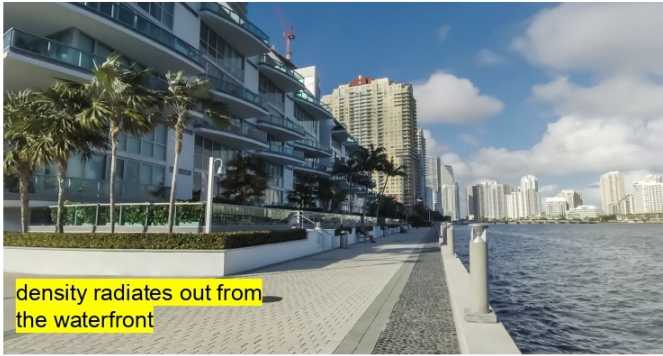


Image credits: Miami Herald and Google Street View







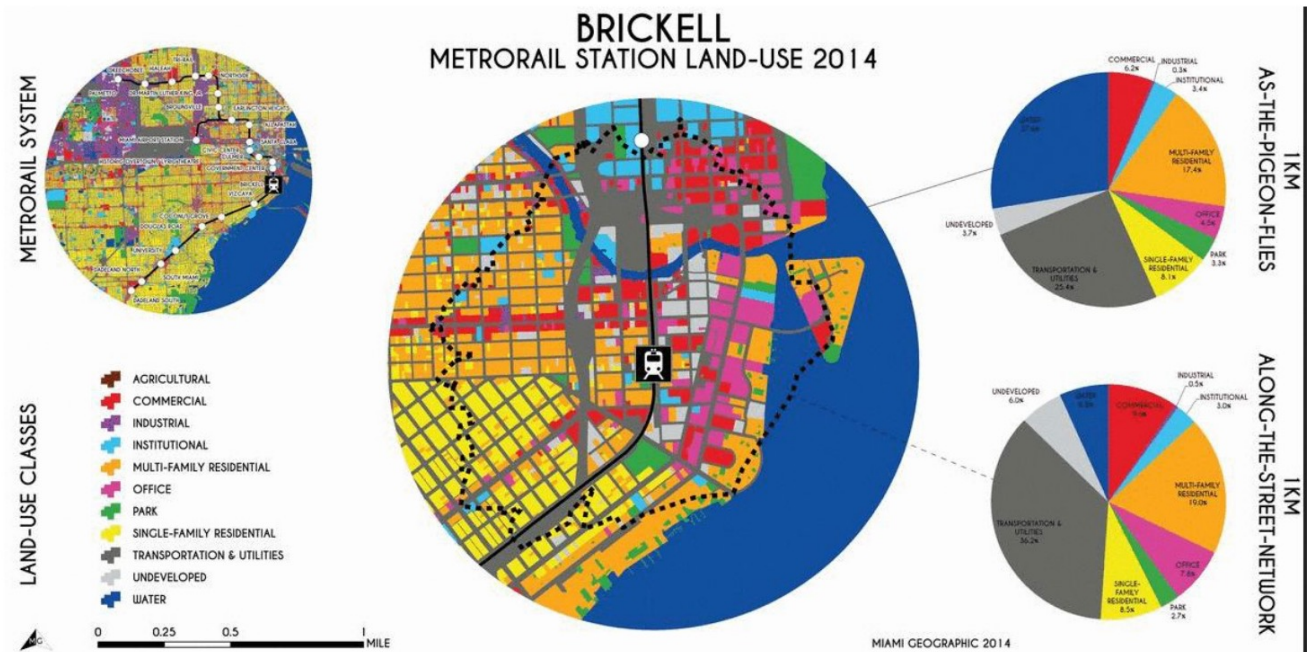
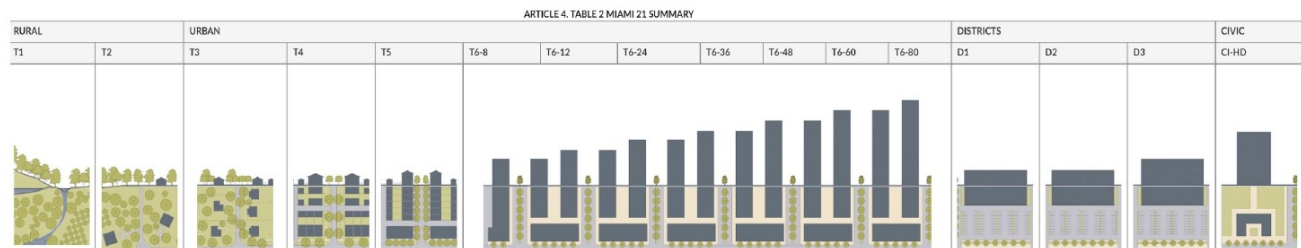


Image credits: Miami Geographic



## The Code and the Atlas

Miami's zoning has two components: a **form-based code** that defines a series of transects and districts, and their parameters for urban design.

This code is accompanied by an **atlas**, a map that illustrates how the transects are organized in a semi-concentric manner. Brickell, near the city's downtown, is considered an urban core transect (or T6 in the code)

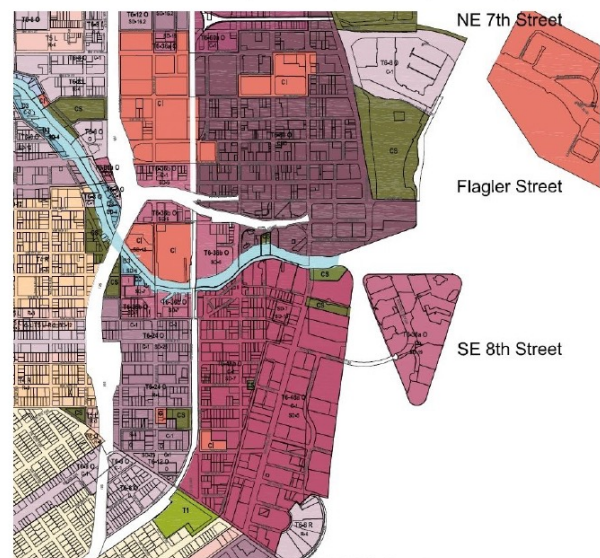


Image credits: Miami21 Zoning Code



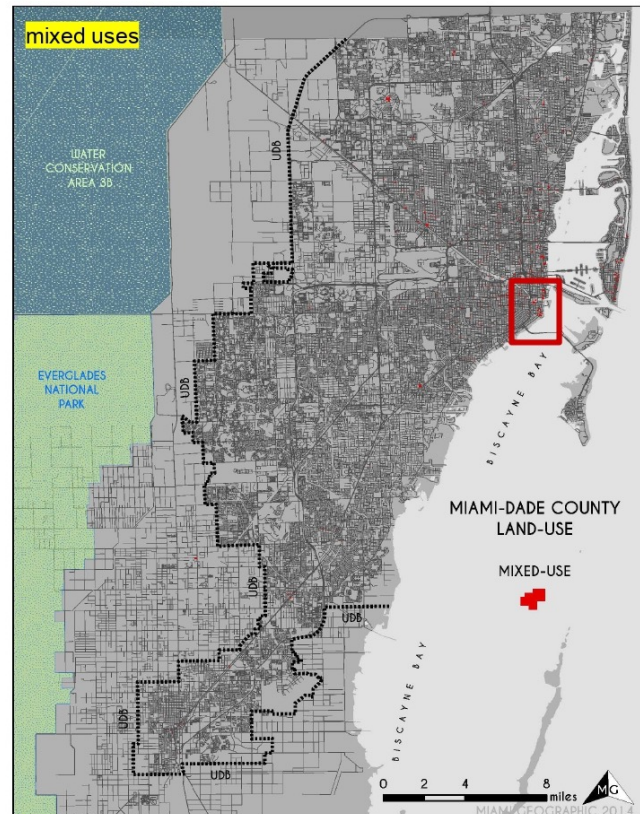
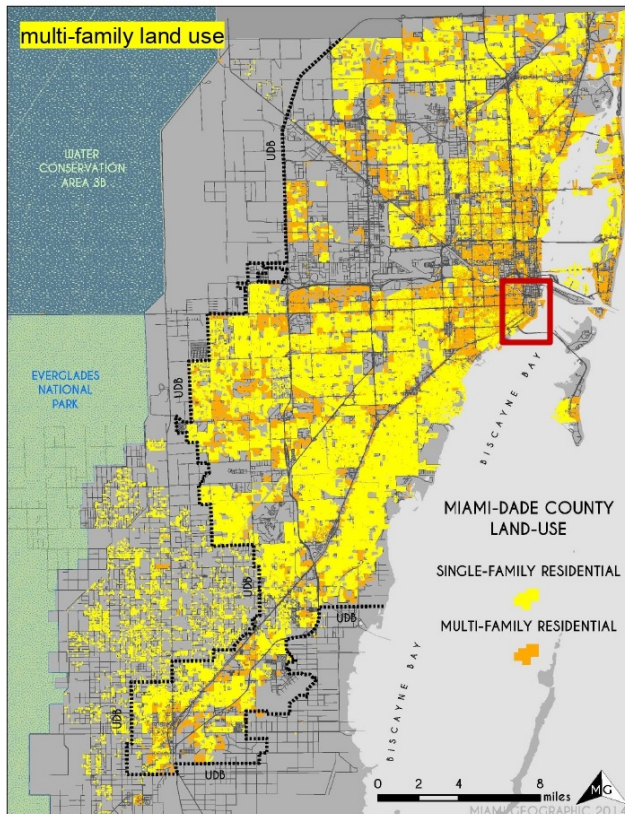
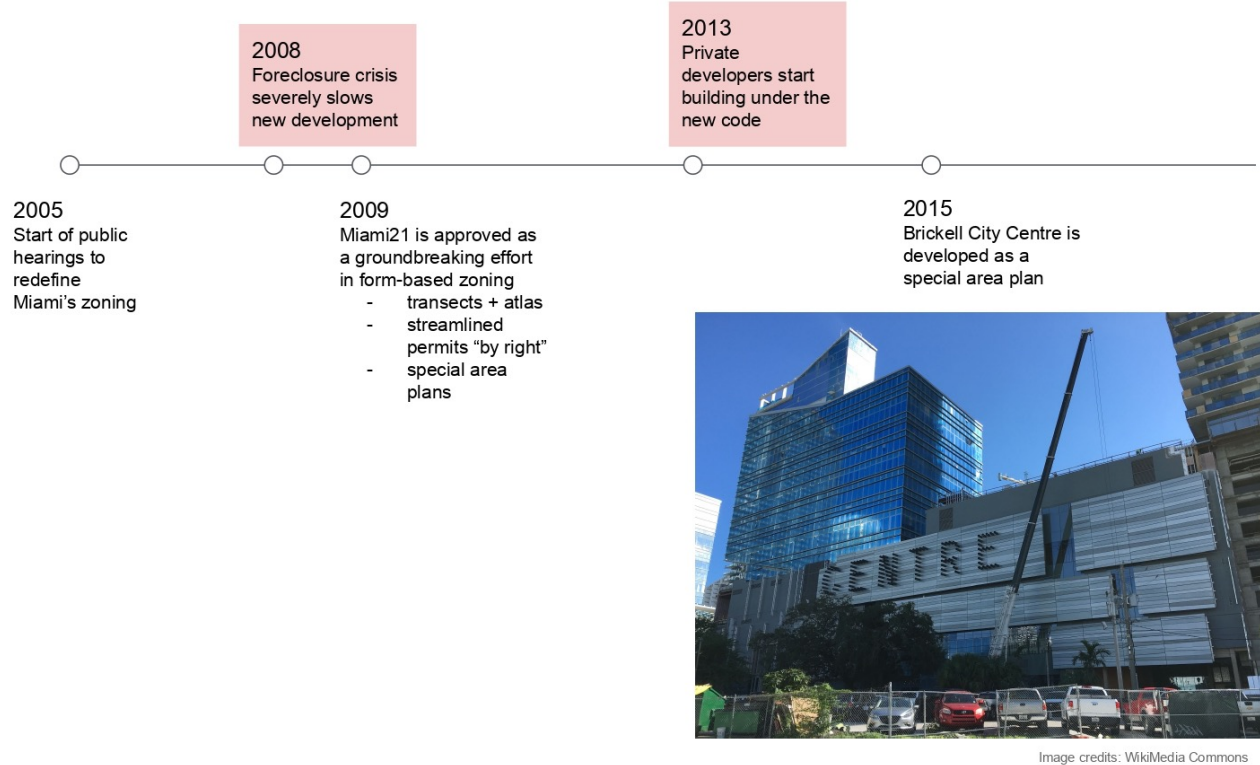


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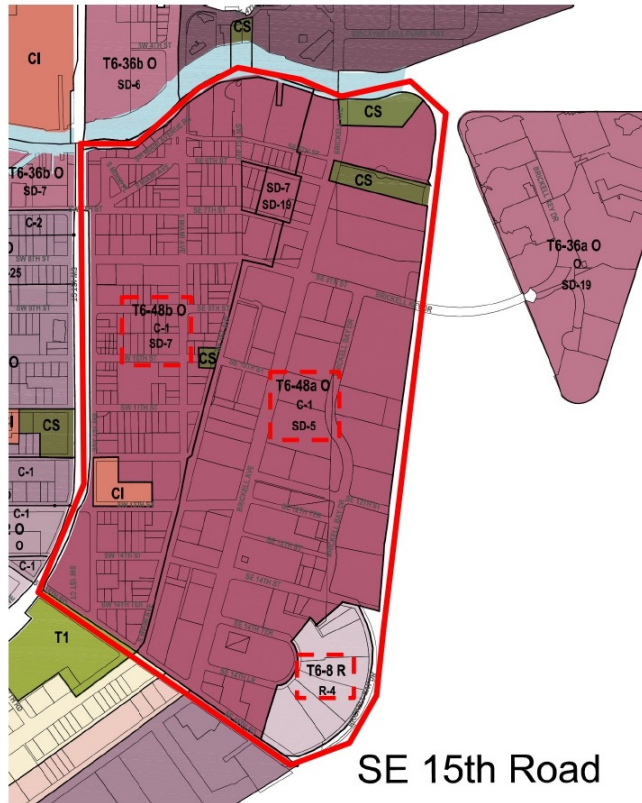
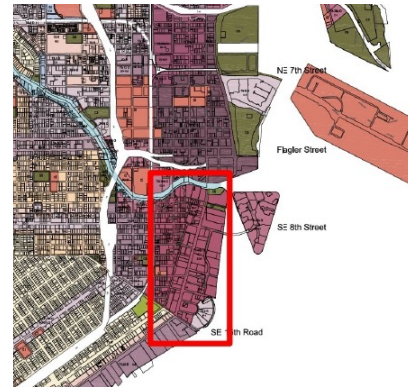
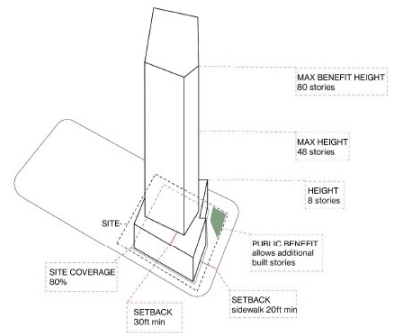


Image credits: Miami21 Zoning Code



- T1 NATURAL
- T3 SUB-URBAN
- T4 GENERAL URBAN
- T5 URBAN CENTER
- T6-8\* URBAN CORE**
- T6-12\* URBAN CORE
- T6-24\* URBAN CORE
- T6-36\* URBAN CORE
- T6-48\* URBAN CORE**
- T6-60\* URBAN CORE
- T6-80\* URBAN CORE
- D1 WORK PLACE
- D2 INDUSTRIAL
- D3 MARINE
- CS CIVIC SPACE/PARKS
- CI CIVIC INSTITUTION
- CI-HD CIVIC INSTITUTION - HEALTH DISTRICT
- R - RESTRICTED
- L - LIMITED
- O - OPEN
- \* NUMBER OF STORIES



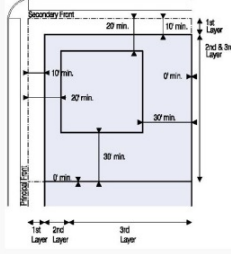
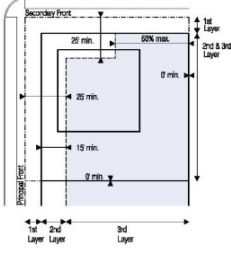
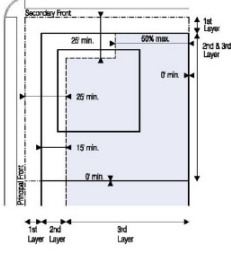
## SUMMARY OF ZONING REGULATIONS (See Appendix for supporting research)

## NOTES

1	ZONING DISTRICTS	URBAN CORE T6-48a O	URBAN CORE T6-48b O	URBAN CORE T6-8 R	NOTES
2	LAND USE	residential, lodging, office, commercial, civic, civic support, educational	residential, lodging, office, commercial, civic, civic support, educational	residential, lodging, office, commercial, civic, civic support, educational	T6-48a and T6-48b are the same except for the Floor Lot Ratio: FLR 11 and FLR 18
3	FLR (floor lot ratio)	11 / 50% additional Public Benefit	18 / 50% additional Public Benefit	5 / 25% additional Public Benefit	non-permitted uses: industrial, adult entertainment
4	SITE COVERAGE	80% (1-8 stories), 18,000 - 30,000 sf. (above 8 stories)	80% (1-8 stories), 18,000 - 30,000 sf. (above 8 stories)	80% (1-8 stories), 18,000 - 30,000 sf. (above 8 stories)	Development in a Civic Space Zone should have a minimum of fifty percent (50%) of its perimeter fronting a Thoroughfare
5	SETBACKS	10 ft min, 20 ft (above 8 stories)	10 ft min, 20 ft (above 8 stories)	10 ft min, 20 ft (above 8 stories)	18,000 sf. max. Floorplate for Residential & Lodging (above 8 stories) 30,000 sf. max. Floorplate for Office & Commercial
6	HEIGHT	2-48 floors max, with bonus up to 80 stories	2-48 floors max, with bonus up to 80 stories	2-8 stories max, with bonus up to 12 stories	(see next slide) (see illustration in next slide)



ILLUSTRATION 5.6 URBAN CORE TRANSECT ZONES (T6-48) %

BUILDING DISPOSITION		BUILDING PLACEMENT	
LOT OCCUPATION			
a. Lot Area	5,000 s.f. min.		
b. Lot Width	100 ft. min.		
c. Lot Coverage			
- 1-8 Stories	80% max.		
- Above 8th Story	18,000 sf. max. Floorplate for Residential & Lodging 30,000 sf. max. Floorplate for Office & Commercial		
d. Floor Lot Ratio (FLR)	T6-48a: 11 / 50% additional Public Benefit T6-48b: 18 / 50% additional Public Benefit		
e. Frontage at front Setback	70% min.		
f. Open Space	10% Lot Area min.		
g. Density	150 du/ac max.*		
BUILDING SETBACK		PARKING PLACEMENT	
a. Principal Front	10 ft. min.; 20 ft. min. above 8th Story		
b. Secondary Front	10 ft. min.; 20 ft. min. above 8th Story		
c. Side	0 ft. min.; 30 ft. min. above 8th Story		
d. Rear	0 ft. min.; 30 ft. min. above 8th Story		
e. Abutting Side or Rear T5	0 ft. min. 1st through 5th Story 10 ft. min. 6th through 8th Story 30 ft. min. above 8th Story		

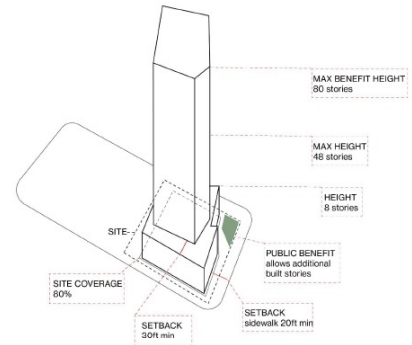


Image credits: Miami21 Zoning Code

## T6-48

## BUILDING HEIGHT

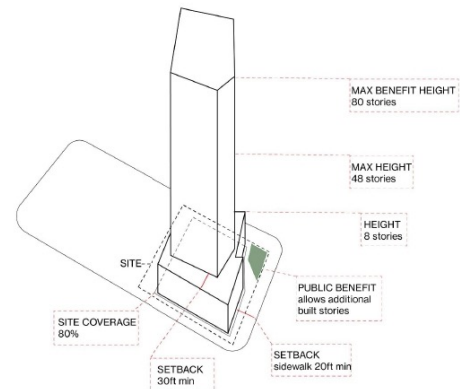
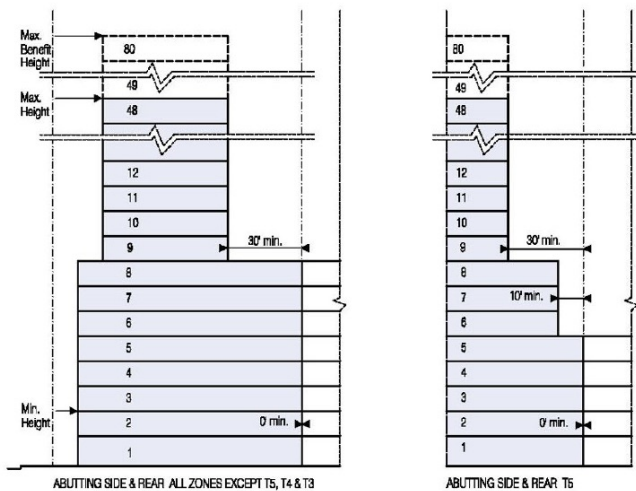
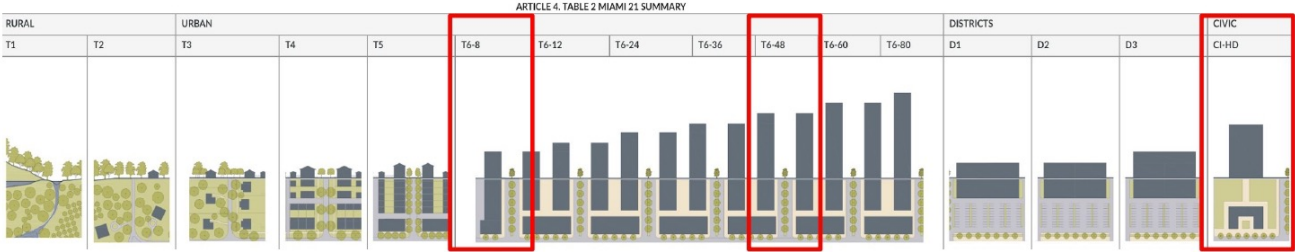


Image credits: Miami21 Zoning Code



A few areas within the studied T6 transects are zoned as Civic Zones. As illustrated below Civic Zones can be designed for all transects, from rural to densely urban. This allows the form-based code to incorporate public spaces and green spaces throughout the city adjusting to different urban environments.



Image credits: Miami21 Zoning Code

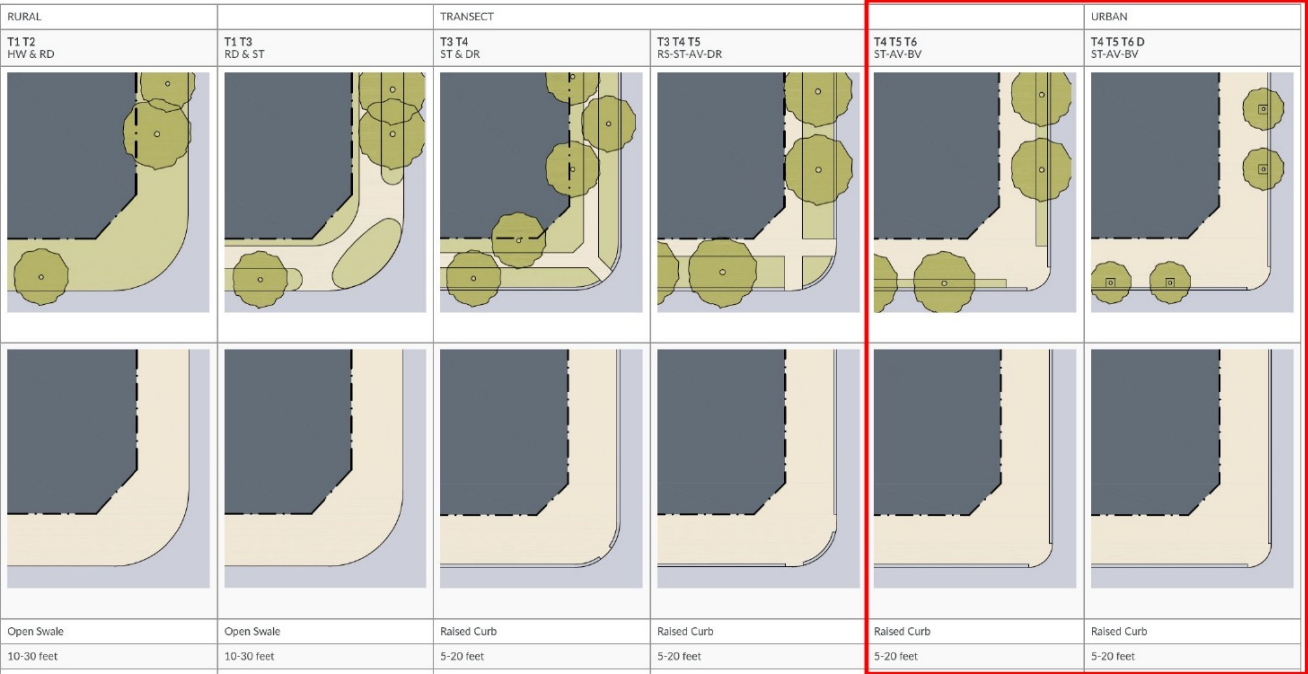


Image credits: Miami21 Zoning Code



PROS	Cons
<ul style="list-style-type: none"> <li>• Clear graphic representation of building codes, bulk and public space regulations, and guidelines for developers</li> <li>• Swift review process</li> <li>• Ensures higher standard of urban design</li> <li>• Enables a more ecologically friendly urban fabric by promoting landscaping</li> <li>• Promotes walkability and enforces pedestrian safety through design</li> <li>• Encourages active transportation and proper streetscape design</li> <li>• Allows for flexibility and changes to built form under special circumstances to promote heterogeneous urban landscapes</li> </ul>	<ul style="list-style-type: none"> <li>• Can be more difficult to implement in transects with no development pressure</li> <li>• Could be more costly to developers, especially in the context of projects for low-income communities</li> <li>• Encourages development of unaffordable housing</li> <li>• Strict design guidelines can become hard to amend or adapt over time</li> <li>• Sustainable development could fall behind on new technologies and strategies</li> <li>• Miami has promoted walkable streets in high density urban areas, yet most of these zones are marketed to tourist and high-income populations. We recommend to incorporate affordable housing by reframing Public Benefits to include equity considerations</li> <li>• High density transects are situated along the waterfront, resulting in high risk for flooding. Waterfront development should incentivize more green infrastructure strategies to manage environmental risks</li> <li>• In order to mitigate climate-related risks and promote diversity, high-density zones within urban core transects could be dispersed along a larger area, and not clustered along the waterfront</li> </ul>

## 5A] APPENDIX - BIBLIOGRAPHY

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# 3 PARIS

CASE STUDY

## PARIS RIVE GAUCHE

CONTENTS

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

TEAM

Yuan Qin  
Jin Hong Kim

DATE

02/15/2021





CASE STUDY	SECTION	TITLE
<b>PARIS RIVE GAUCHE</b>	<b>1] CASE STUDY INTRODUCTION</b>	<b>1.1] LOCATION &amp; OVERVIEW</b>

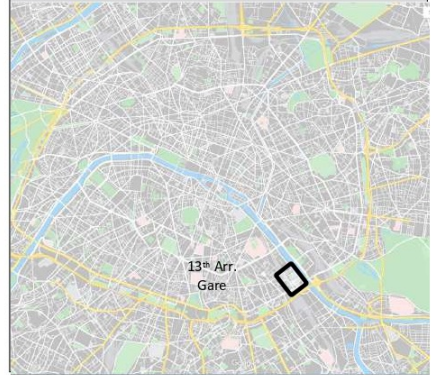
STUDY AREA



NEIGHBORHOOD



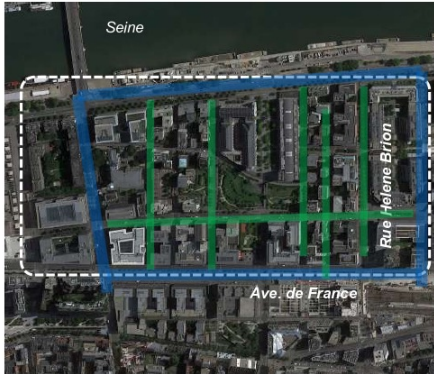
CITY



CASE STUDY	SECTION	TITLE
<b>PARIS RIVE GAUCHE</b>	<b>1] CASE STUDY INTRODUCTION</b>	<b>1.2] FOCUS AREA</b>







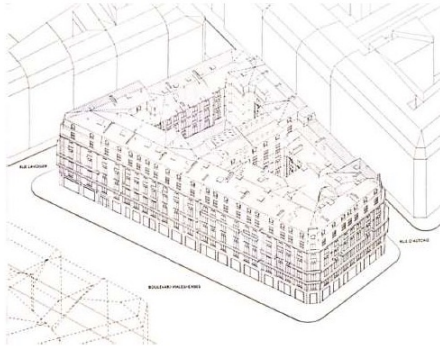
#### Primary Road

- There are 4 primary roads surrounding our case study area
- Primary roads are typically 4 way lanes and carry most of the through traffic

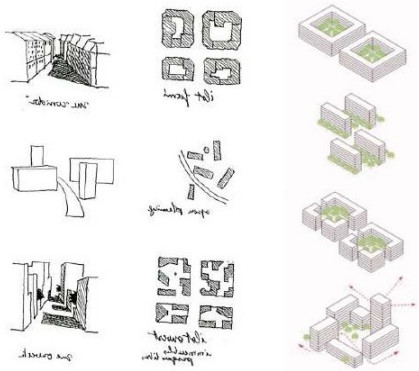
#### Secondary Road

- Secondary roads network connecting between primary road networks
- Secondary roads are typically narrower and have 2 lanes

Typical perimeter block



Îlot Ouvert (Open Block) by Christian de Portzamparc



Open block concept in the neighborhood includes student dormitory, affordable housing, gallery,







Buildings on Rue Neuve Tolbiac

- Buildings on this road are typically 7-10 story buildings
- Those buildings are often mix-used with commercial in the ground floor and office/ apartment above it
- Buildings are modern and with glass façade



Buildings on Quai Panhard et Levassor

- Buildings on this road has bigger setbacks
- Most the buildings are modern style with large glass façade
- Buildings has larger footprint



Buildings on Secondary streets

- Buildings on this road are primarily apartment and office buildings
- They are typically 7-10 stories with modern building style and lighter façade



Green space

- There is a large open/green space in the study area
- This park has a pedestrian bridge that connects the road on both sides
- The pedestrian bridge has an elevator



Urban garden

- This urban garden takes part of the building land
- There is an entrance to the garden but it seems locked from public access



Green pathway

- This pedestrian only green path way connects one primary road and one secondary road
- With bench installed, this is also a great public area to socialize



17<sup>th</sup> Century

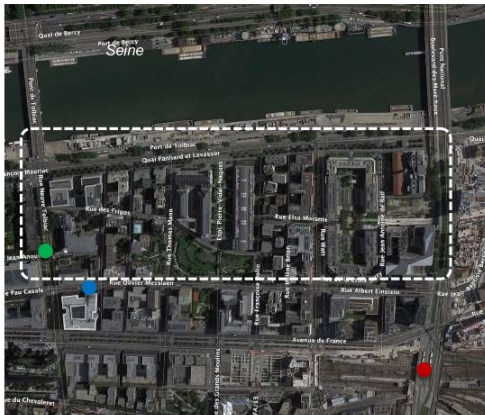
- City transformed old housing to uniform brick buildings
- City build city infrastructure such as road, bridge, and sewage system
- Projects were often built around major squares and Avenues forming complete streets

18<sup>th</sup> Century

- City had clear center line with multiple squares alongside it
- Value the relationship between public square and surrounding buildings
- Set maximum building height of 37m which is still applicable today

19<sup>th</sup> Century Haussmann's renovation

- Demolition of medieval neighborhoods that were deemed overcrowded and unhealthy
- The building of wide avenues, new parks and squares
- Annexation of the suburbs surrounding Paris



● Tram Station

- There is a tram station on Boulevard du general jean Simon
- T3a Maryse Bestie



● Transit Hub-Bibliothèque François Mitterrand

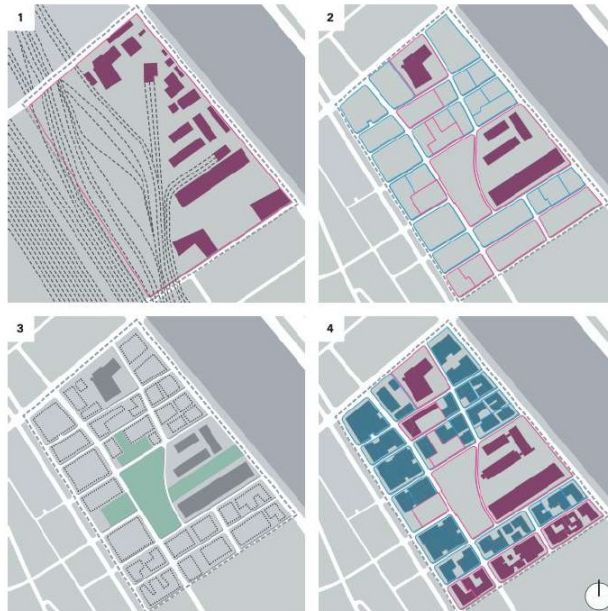
- Located on Avenue de France
- Subway service 14
- Bus stops 62, 89
- Commuter trains



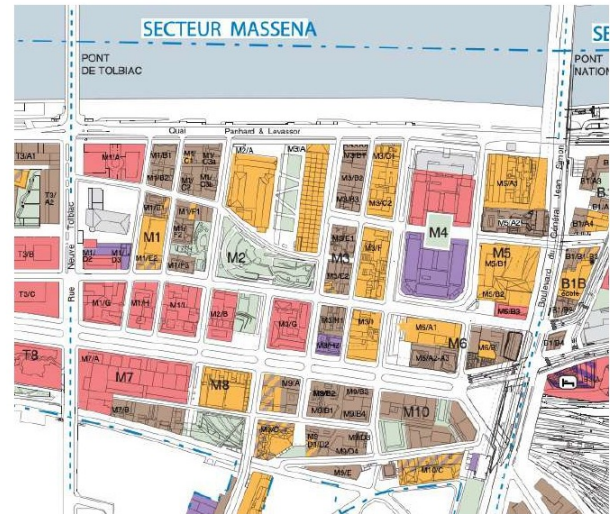
● Bike Lanes

- Clear bike lane markers
- Bike lanes are often shared with bus lanes
- There are bike parking racks on sidewalks

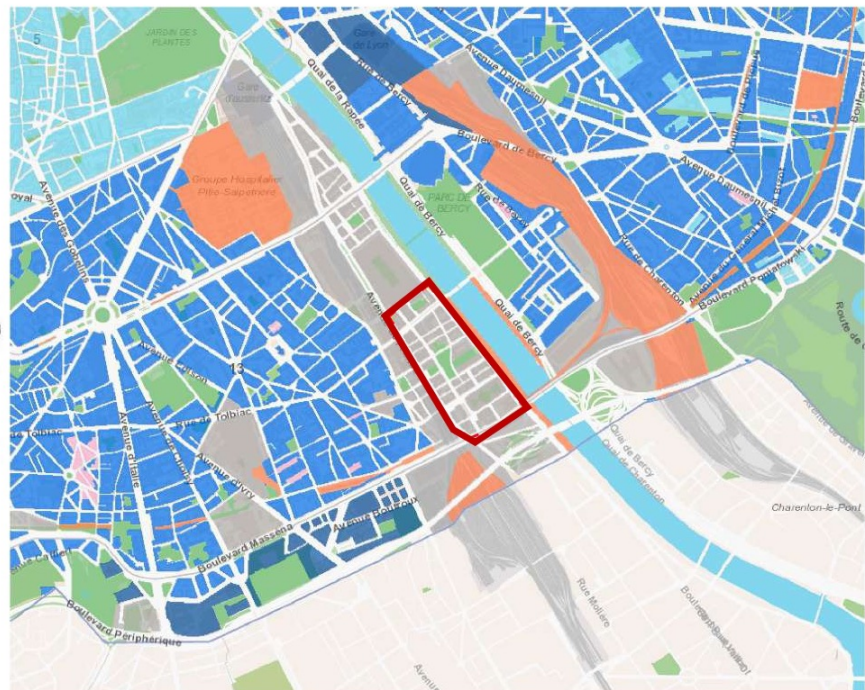
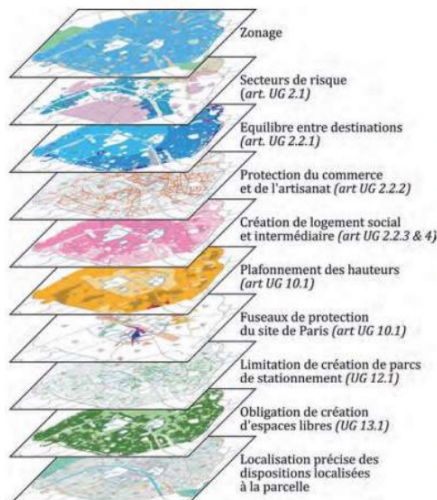
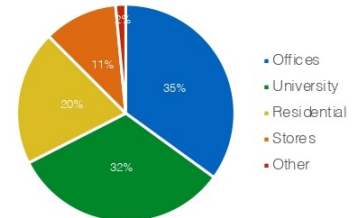




1. Conditions before intervention
2. Plot subdivision and ownership after redevelopment
3. Masterplan prescriptions for the building envelopes
4. Final state



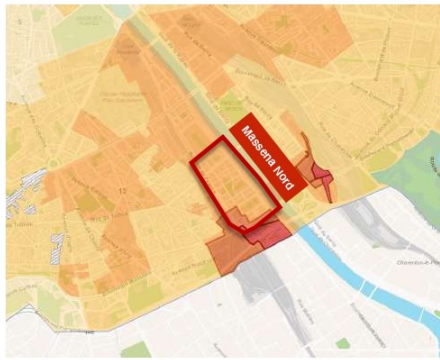
- Offices
- Residential
- Activities
- Facilities



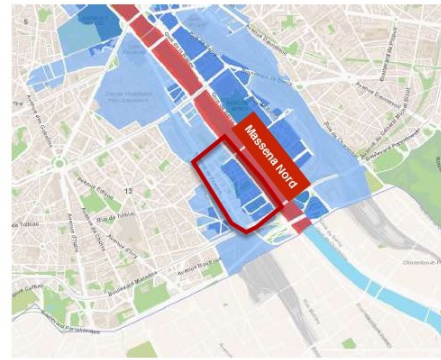
- UG (General Urban)
- UV (Green Urban)
- UGSU (Urban Services)
- N (Nature)
- UG (ZAC – Integrated Development Zone)

\* All of Rive Gauche falls under ZAC

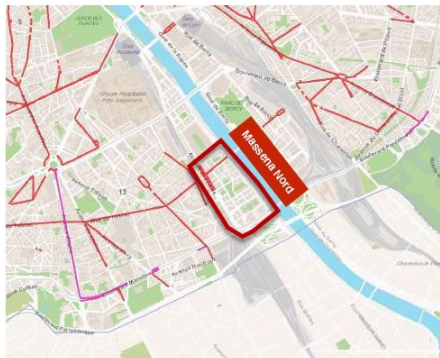




General Height Plan



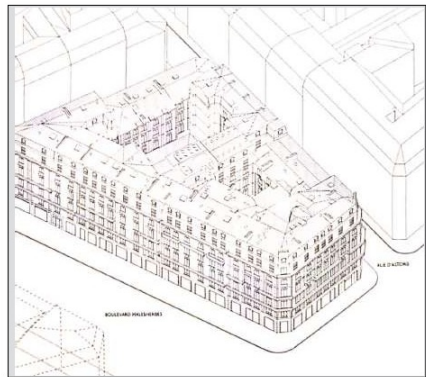
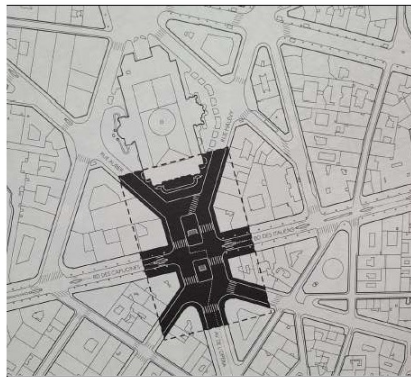
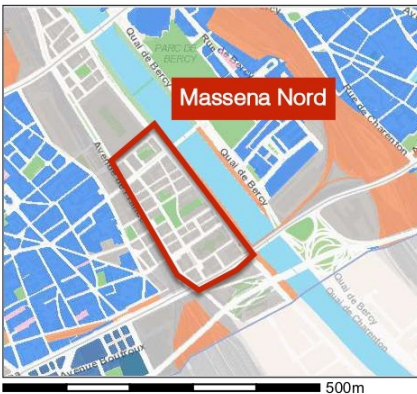
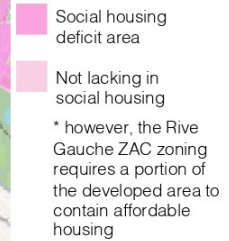
Floor Risk Prevention Plan



Retail Protection Plan



Social Housing Plan



Typical Housing Blocks in Paris  
Jallon, Benoit. Paris Haussmann: A Model's Relevance. Park Books, 2017.

SUMMARY OF ZONING REGULATIONS (See Appendix for supporting research)				NOTES:
1	ZONING DISTRICTS	UG (General Urban)	UV (Green Urban)	
2	LAND USE	Mixed-use	Green space	
3	FAR	2.69		
4	SITE COVERAGE	40-50%		
5	SETBACKS	None (with exceptions for ZAC area)		
6	HEIGHT	37m (with exceptions for ZAC area)		
OTHER NOTABLE ZONING REGULATIONS				
7	Emprise Constructible Maximale	Vertical façade height (Band E), maximum building footprint		"Band E" the vertical height of the façade is roughly the equivalent of the width of the street
8				
9				



CASE STUDY	SECTION	TITLE
<b>PARIS RIVE GAUCHE</b>	<b>4] ZONING ANALYSIS</b>	<b>4.4] EVALUATION</b>
<b>PROS</b>		<b>Cons</b>
<ul style="list-style-type: none"> <li>• The building code includes a section on sustainable energy, which allows for additional development height</li> <li>• Mixed-use nature zoning allows for a neighborhood that is well integrated in terms of amenities.</li> <li>• As can be seen in this neighborhood, Paris can be an exciting place for architectural innovation.</li> <li>• Form-based zoning codes allow for maintenance of quality-of-life standards</li> </ul>		<ul style="list-style-type: none"> <li>• Difficult to find anything specific to the agreements of the Paris Rive Gauche ZAC (the exemptions from the overall Paris zoning plan)</li> <li>• Might not be as opportune to new developments due to severe restrictions on building envelopes.</li> </ul>
CASE STUDY	SECTION	TITLE

## 5A] APPENDIX - BIBLIOGRAPHY

### REFERENCES:

Carmona, Michel, and Patrick Camiller. *Hausmann: His Life and Times and the Making of Modern Paris* (2002).

Firley, Eric, and Katharina Gron. *The Urban Masterplanning Handbook*. Chapter 2: Masséna Nord (Paris Rive Gauche) (2014).

Jallon, Benoit, and Umberto Napolitano. *Paris Hausmann: A Model's Relevance*. Park Books (2017).

Mairie de Paris. *Plan Local d'Urbanisme* (2019).

Alba, Dominique. *Récolement et comparaisons des PLU de Paris et de 21 communes de la première couronne*. Apur (2013).

Visual map of PLU de Paris. Mairie de Paris. <https://capgeo.sig.paris.fr/Apps/ParisPLU/>.

# 4 HONG KONG

CASE STUDY

## HONG KONG – NORTH POINT

CONTENTS

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

TEAM

Mengqi Cao  
Zixuan Zha

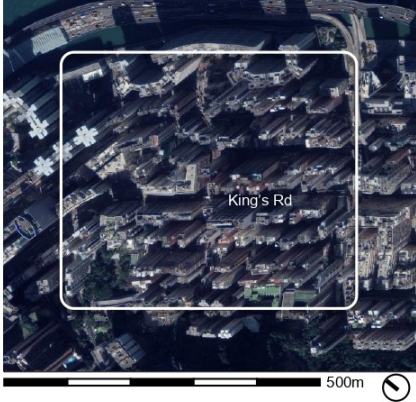
DATE

3/2021





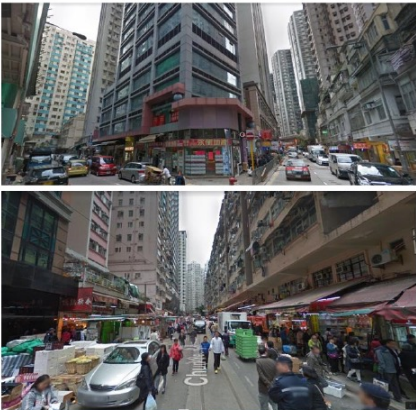
STUDY AREA



NEIGHBORHOOD



CITY







The study area consist of 4 main blocks:  
Residential \*1 + mixed-used(Residential/Commercial) \*3



Narrow sidewalks run through each block  
Other avenues in study area all take the commercial functions

No internal open space  
3 public open space  
- Provident Garden  
- Tong Shui Road Garden  
- Tin Hau Temple Road Sitting-out Area



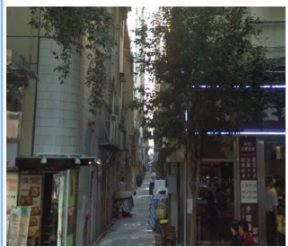


Hierarchical Road System:

- City main road: high level commercial activities
- Community commercial street
- Residential streets



- 6 lanes, double-sided pavements
- Office Buildings: Malls, Banks, Restaurants, Pharmacies
- Tramcars, buses, cars

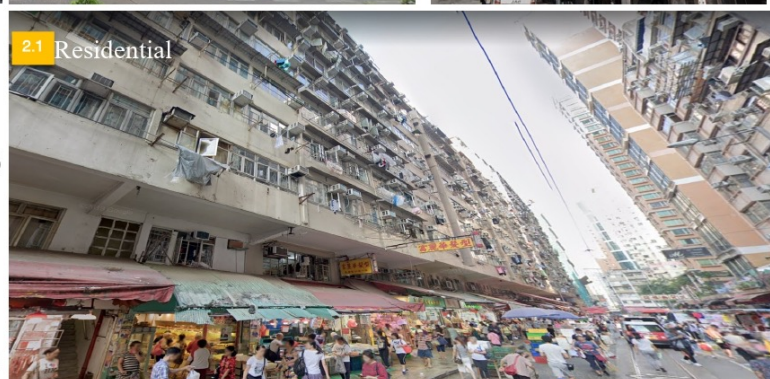


CASE STUDY	SECTION	TITLE
<b>HONG KONG – NORTH POINT</b>	<b>2] CHARACTER</b>	<b>2.2] AVENUES &amp; STREETS</b>
<p><b>Hierarchical Road System:</b></p> <ul style="list-style-type: none"> <li>City main road: high level commercial activities</li> <li>Community commercial street</li> <li>Residential streets</li> </ul>   <ul style="list-style-type: none"> <li>Private street</li> <li>2 lanes</li> <li>narrow sidewalks</li> </ul>  <ul style="list-style-type: none"> <li>Open to public</li> <li>Pedestrian only</li> </ul>		 <p>Java Street</p> <ul style="list-style-type: none"> <li>One-way streets, 3 lanes, double-sided pavements</li> <li>buses, cars</li> <li>Commerce at the bottom: home design/building material companies, restaurants, convenience stores</li> </ul>  <p>Chun Yung Street</p> <ul style="list-style-type: none"> <li>One-way streets, 2 lanes, double-sided pavements</li> <li>Tramcars, buses, cars</li> <li>Commerce at the bottom: food market, road side stores, restaurants,</li> </ul>
CASE STUDY	SECTION	TITLE
<b>HONG KONG – NORTH POINT</b>	<b>2] CHARACTER</b>	<b>2.3] BUILDINGS</b>

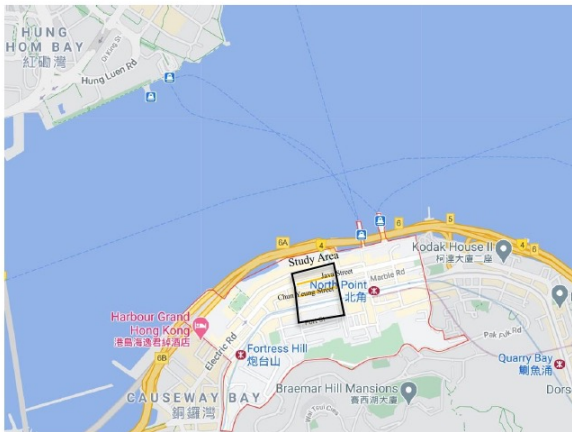


### Typical building types

- 1 office building:**  
20-30 story towers on commercial podiums (podiums are typically between 3 and 8 floors)
- 2.1 Residential Slab building**  
10-story residential street wall buildings with ground floor commercial uses
- 2.2 Residential Tower Buildings on a Base**  
20-30 story residential high-rise towers typically above a 2 to 3 story commercial podium







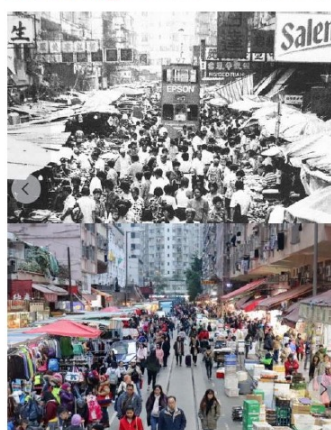
### North Point

- mixed-use urban area in the in the northeastern part of Hong Kong Island; by the end of the 1960's North Point was listed as the **most densely populated** place on the planet in the Guinness Book of World Record
- Parts of North Point have been inhabited since before the **British arrived in the mid-19th century**
- During the Chinese Civil War, a large number of the rich and middle class from Shanghai fled to Hong Kong to escape the turmoil of war, many of them settled in North Point. In 1950, North Point became known as "**Little Shanghai**", since in the minds of many, it has already become the replacement for the surrendered Shanghai in China.
- The second group that moved to North Point were the Hokkien Fujianese, who were mostly displaced by political events in China but then soon mostly moved to countries in Southeast Asia. **The area became known as "Little Fujian"**.



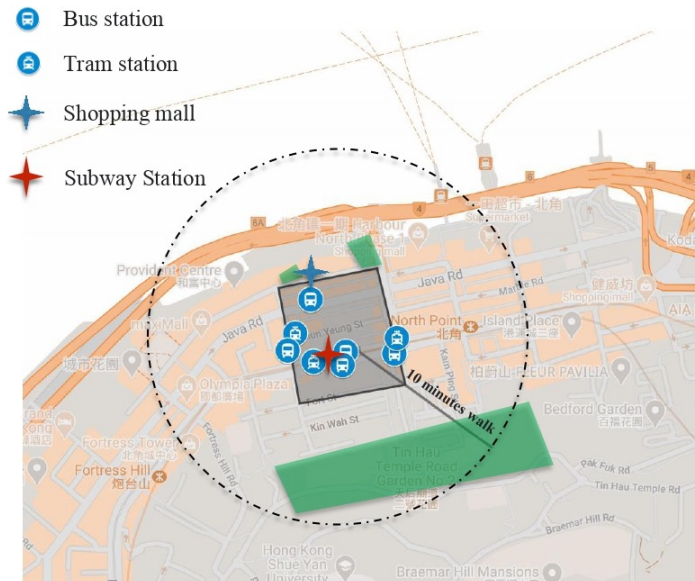
### Java Street

- 1930s: named after the Jawa Steamship Company at this area, which was specialized in passenger transport and trade with the Netherlands



### Chun Yeung Street

- 1920s: Guo Chun Yeung, a wealthy businessman from Southeast Asia's Fujian province, developed the street into residential development
- Typical Hokkien trade settlements in Hong Kong

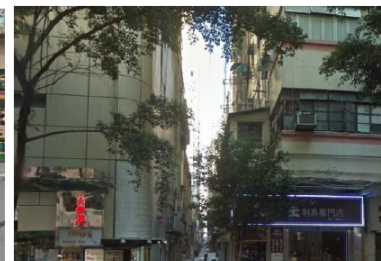


### Well served neighborhood

- Numerous Transportation Options within study area  
2 tram station; 5 bus station; 1 subway station
- Good access to Public space  
public parks & waterfront area
- Close to markets and groceries  
food market at Chun Yueng Street  
Houfu Shopping Center  
(1 of the 5 largest shopping malls at north point)
- Close to the city main road  
high level facilities: banks, government office

### Existing drawbacks:

- Vehicles occupy the sidewalks for pedestrians
- City peddlers occupy the streets and roads
- Narrow public space







#### North Point Housing related statistics

- Residents bear comparably high purchasing power (higher median income)
- Large proportion of residents have high school educational level or above (85.9%)
- Larger average living space compare to the average level of HK/East District
- High density population area

	Primary	Secondary	College
Hong Kong	20.0%	47.3%	32.7%
East District	17.0%	44.6%	38.4%
North Point	14.1%	43.4%	42.5%

	Top 25%	Medium	Last 25%
Hong Kong	HK\$ 46 250	HK\$ 25 000	HK\$ 12 000
East District	HK\$ 55 700	HK\$ 29 830	HK\$ 13 950
North Point	HK\$ 59 160	HK\$ 30 000	HK\$ 14 000

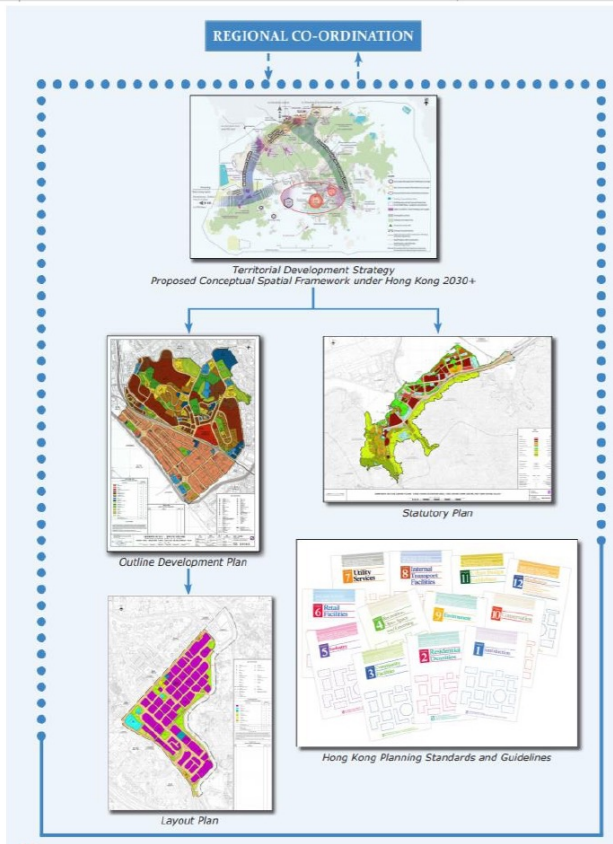
#### Average Living Space

Top 25%	Medium	Last 25%
54平方米	40平方米	32平方米
56平方米	44平方米	33平方米
62平方米	47平方米	32平方米

#### Resident population in Housing Market Area

Total population	555 034	106 822
Sex ratio	819	762

Source: Hongkong census and statistic department, 2016  
<http://census.censtat.gov.hk/hong-kong/Eastern/CHMA/North-Point>



#### Planning system:

Hong Kong Planning department prepares development strategies at the **territorial level** and **various types of statutory and departmental plans at the district/local level**. In preparing these plans, reference will be made to **the Hong Kong Planning Standards and Guidelines**

#### - Territorial Development Strategy

The territorial development strategy provides a broad territorial planning framework to guide future development and provision of strategic infrastructure and serves as a basis for the planning of strategic growth areas and the preparation of district plans.

#### - Statutory Plans

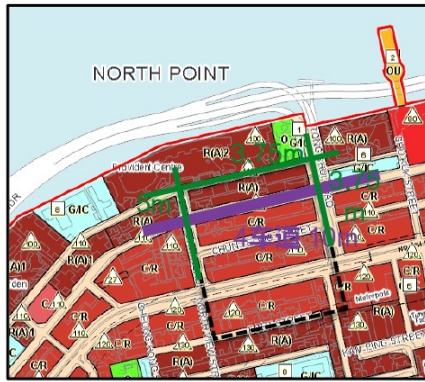
The statutory plans has the following 3 major functions: 1) regulating development through specifying the types of permitted land-uses and development parameters on individual parcels of land; 2)reserving land for various types of uses; 3)undertaking enforcement and prosecution actions against unauthorized developments in the rural New Territories.

#### - Departmental Plans - layout plans

The departmental plans and layout plans zoom into a more specific level and provide more detailed level planning parameters

Source: Hongkong Planning department, Annual Report 2019  
[https://www.pland.gov.hk/pland\\_en/press/publication/ar\\_19/pdf/ar2019\\_en.pdf](https://www.pland.gov.hk/pland_en/press/publication/ar_19/pdf/ar2019_en.pdf)





## OZP Zoning

More Information

CDA Comprehensive Development Area

O Open Space

RE Residential (Group E)

GB Green Belt

R(A) Residential (Group A)

C/R Commercial/Residential

R(C) Residential (Group C)

C Commercial

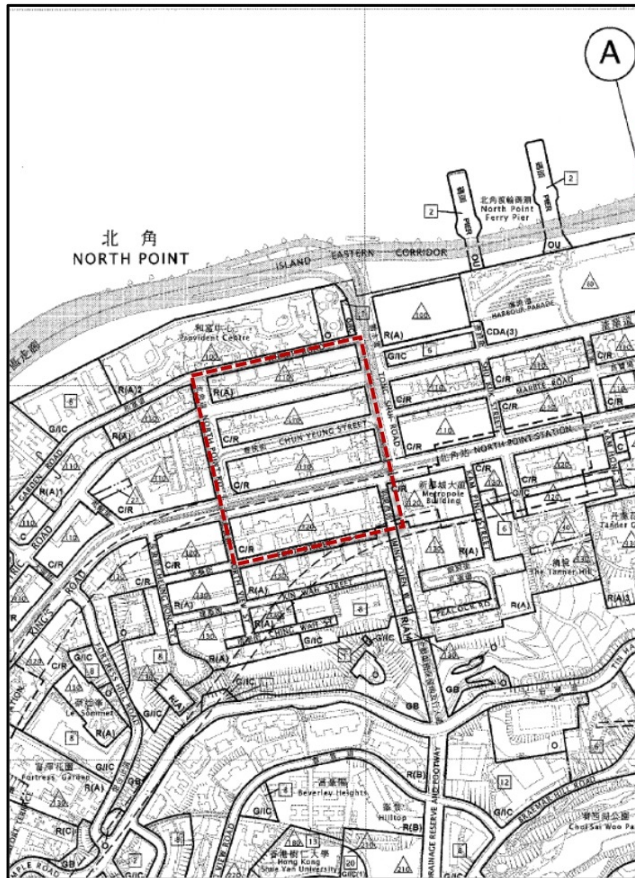
G/IC Government, Institution or Community

OU Other Specified Uses

R(B) Residential (Group B)

△140 Maximum Building Height (In Metres Above Principal Datum)

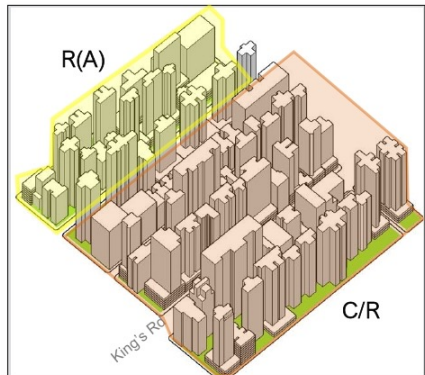
△5 Maximum Building Height (In Number of Storeys)



## ZONES

- C COMMERCIAL
- CDA COMPREHENSIVE DEVELOPMENT AREA
- C/R COMMERCIAL/ RESIDENTIAL
- R(A) RESIDENTIAL (GROUP A)
- R(B) RESIDENTIAL (GROUP B)
- R(C) RESIDENTIAL (GROUP C)
- R(E) RESIDENTIAL (GROUP E)
- G/IC GOVERNMENT, INSTITUTION OF COMMUNITY
- O OPEN SPACE
- OU OTHER SPECIFIED USES
- GB GREEN BELT
- BOUNDARY OF COUNTRY PARK
- BUILDING HEIGHT CONTROL ZONE BOUNDARY
- △140 MAXIMUM BUILDING HEIGHT (IN METRES ABOVE PRINCIPAL DATUM)
- △5 MAXIMUM BUILDING HEIGHT (IN NUMBERS OF STOREYS)
- NBA NON-BUILDING AREA

SOURCES:  
TOWN PLANNING ORDINANCE,  
HONG KONG TOWN PLANNING BOARD  
HONG KONG PLANNING AREA NO.8 – NORTH POINT – OUTLINE ZONING PLAN



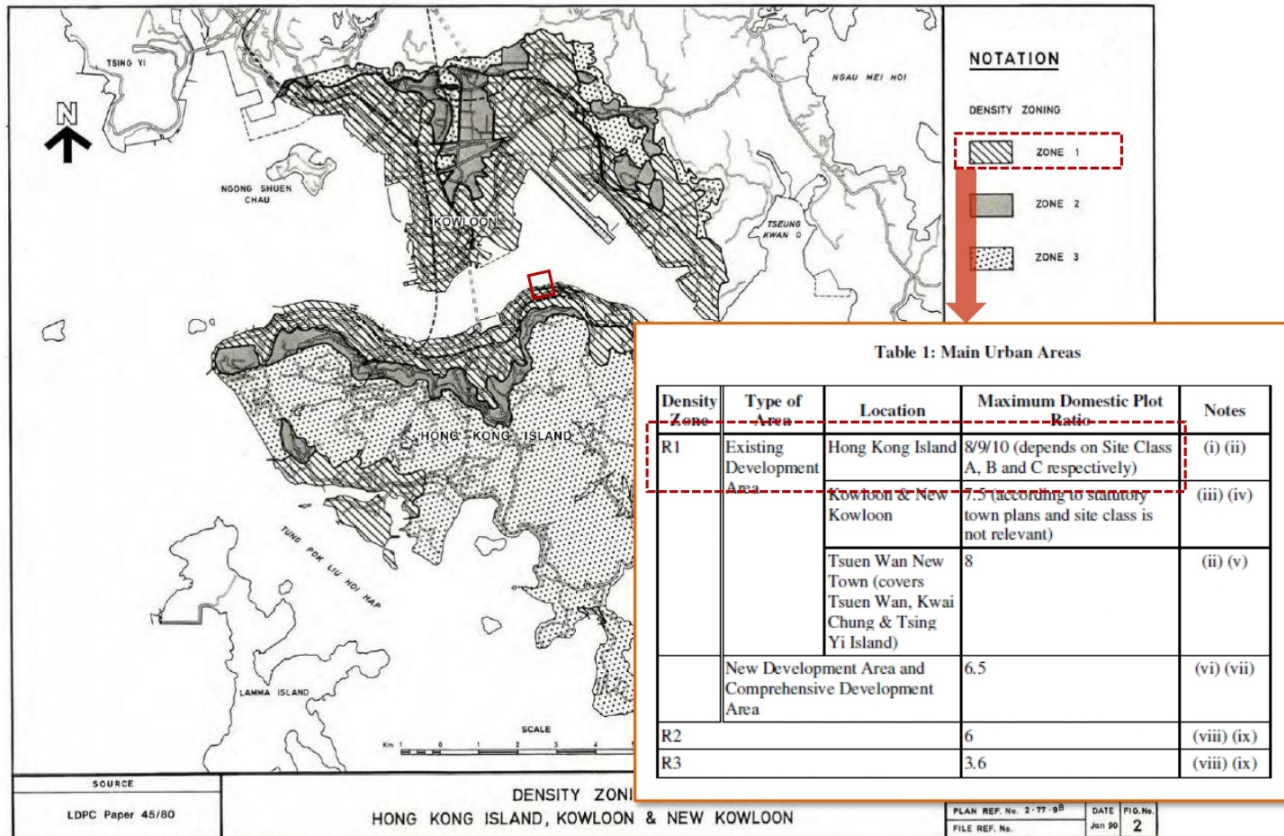
## SUMMARY OF ZONING REGULATIONS (See Appendix for supporting research)

NOTES: See notes explained in the APPENDIX

1	ZONING DISTRICTS	C/R	R(A)	
2	LAND USE	COMMERCIAL/ RESIDENTIAL	RESIDENTIAL (GROUP A)	Group A for residential is intended primarily for high-density residential developments. Commercial uses are always permitted on the lowest three floors of a building or in the purpose-designed non-residential portion of an existing building.
3	FAR	8/9 for residential	8/9	8 FAR for Zone 1, Class A residential - see p19
4	SITE COVERAGE	33.33%/ 37.5% for buildings higher than 61m	33.33%/ 37.5% for buildings higher than 61m	Depends on the types of specific streets it abuts on and the height of buildings - see p19
5	SETBACKS	/	/	
6	HEIGHT	110m/120m (IN METERS ABOVE PRINCIPAL DATUM)	110M (IN METERS ABOVE PRINCIPAL DATUM)	Specific building height restrictions are imposed for various development zones to provide better control of the building height profile, to preserve views to the ridgelines and to improve air ventilation within the area.
OTHER NOTABLE ZONING REGULATIONS				
7	ROADSPACE	Roadspace is assumed to be one sixth(16.7%) of DSA(Development Site Area) except for podium development in which no internal roads are required.		
8	OPEN SPACE	1m <sup>2</sup> of LOS(Local Open Space) per person when there are more than 500 persons.		
9	SCHOOL FACILITIES	Depend on the combination of site area and demographic information		



### DENSITY ZONING: ZONE 1 → R(A) in Hong Kong Island → Maximum Domestic Plot Ratio = 8/9/10



#### Urban Design Guidelines:

- 1] Reducing Site Coverage and Allow for more Open Space at grade:

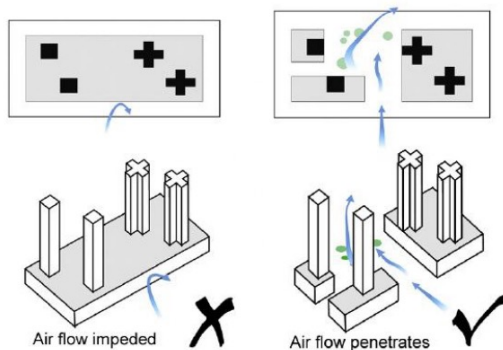
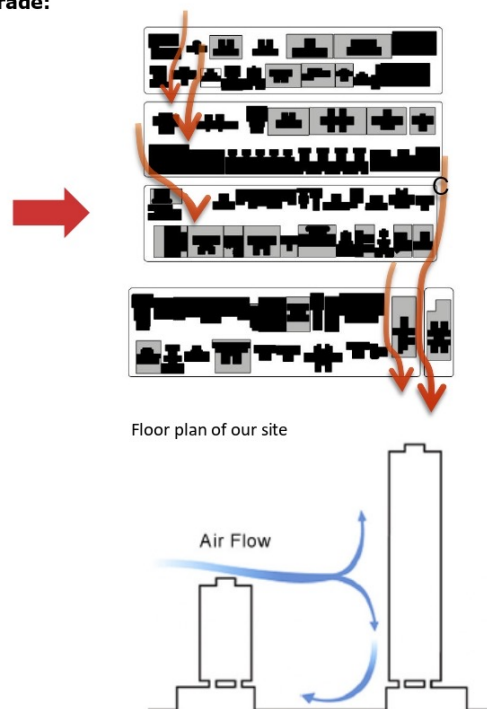


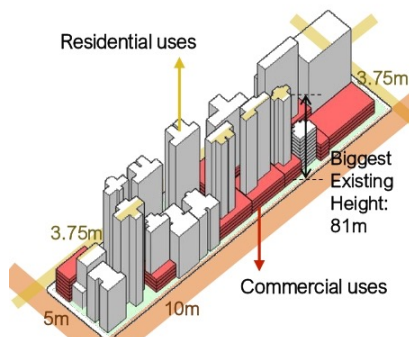
Figure 47 Reducing Site Coverage of the Podia to Allow More Open Space at Grade

Compact integrated developments and podium structures with full or large ground coverage on extensive sites typically found in Hong Kong are particularly impeding air movement and should be avoided where practicable. The following measures should be applied at the street level for large development/ redevelopment sites particularly in the existing urban areas:

- providing setback parallel to the prevailing wind;
- designating non-building areas for sub-division of large land parcels;
- creating voids in façades facing wind direction; and/or
- reducing site coverage of the podia to allow more open space at grade (Figure 47).



Stepping building height concept can help optimize the wind capturing potential of development itself.

**District: R (A)****Landuse:****Residential (Group A)**

- Group A: **high-density residential developments** Commercial uses are always permitted on the lowest three floors of a building or in the purpose-designed non-residential portion of an existing building.
  - Commercial uses permitted on the lowest three floors
- Height limitation: 110mPD(principal datum)  
Site Coverage: 33.33%/37.5% for buildings higher than 61m

**ZONES FOR RESIDENTIAL (GROUP A)**

Column 1 Uses always permitted	Column 2 Uses that may be permitted with or without conditions on application to the Town Planning Board
For 'Residential (Group A)' zone and sub-zones of 'Residential (Group A)' zone except 'Residential (Group A)-1'	
Ambulance Depot Flat Government Use (not elsewhere specified) House Library Market Place of Recreation, Sports or Culture Public Clinic Public Transport Terminus or Station (excluding open-air terminus or station) Residential Institution School (in free-standing purpose-designed building only) Social Welfare Facility Utility Installation for Private Project	Commercial Bathhouse/Massage Establishment Eating Place Educational Institution Exhibition or Convention Hall Government Refuse Collection Point Hospital Hotel Institutional Use (not elsewhere specified) Mass Transit Railway Vent Shaft and/or Other Structure above Ground Level other than Entrances Office Petrol Filling Station Place of Entertainment Private Club Public Convenience Public Transport Terminus or Station (not elsewhere specified) Public Utility Installation Public Vehicle Park (excluding container vehicle) Religious Institution School (not elsewhere specified) Shop and Services Training Centre
In addition, the following uses are always permitted (a) on the lowest three floors of a building, taken to include basement; or (b) in the purpose-designed non-residential portion of an existing building, both excluding floors containing wholly or mainly car parking, indoor vehicle lots and/or plant room.	
Eating Place Educational Institution Institutional Use (not elsewhere specified) Off-course Betting Centre Office Place of Entertainment Private Club Public Convenience Recyclable Collection Centre School Shop and Services Training Centre	

**Site Coverage & Maximum Domestic Plot Ratio**

Table 4 Maximum Permitted Site Coverage and Plot Ratio in Relation to Building Height for Domestic Buildings under First Schedule of B(P)R

Height of building as defined under B(P)R in metres	Maximum domestic site coverage (%)			Maximum domestic plot ratio		
	Class A Site	Class B Site	Class C Site	Class A Site	Class B Site	Class C Site
up to 15	66.6	75	80	3.3	3.75	4.0
up to 18	60	67	72	3.6	4.0	4.3
up to 21	56	62	67	3.9	4.3	4.7
up to 24	52	58	63	4.2	4.6	5.0
up to 27	49	55	59	4.4	4.9	5.3
up to 30	46	52	55	4.6	5.2	5.5
up to 36	42	47.5	50	5.0	5.7	6.0
up to 43	39	44	47	5.4	6.1	6.5
up to 49	37	41	44	5.9	6.5	7.0
up to 55	35	39	42	6.3	7.0	7.5
up to 61	34	38	41	6.8	7.6	8.0
over 61	33.33	37.5	40	8.0	9.0	10.0

**Class A Site** means a site, not being a Class B site or Class C site, that abuts on **one** specified street, as defined under B(P)R, not less than 4.5m wide.

**Class B Site** means a corner site that abuts on **two** specified streets, as defined under B(P)R, neither of which is less than 4.5m wide.

**Class C Site** means a corner site that abuts on **three** specified streets, as defined under B(P)R, none of which is less than 4.5m wide.

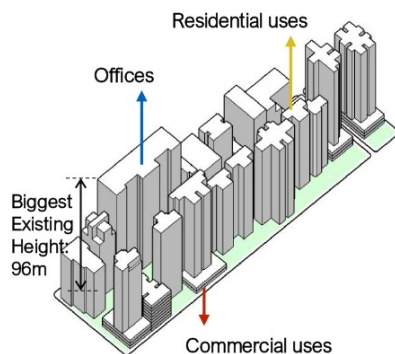
If there is non-domestic floor space, maximum domestic plot ratio will be reduced according to the provisions of the B(P)R composite building formula.

Maximum domestic **site coverage**: **33.33/37.5**

Maximum domestic **plot ratio**: **8.0/9.0**

Practicum: Residential Planning in Global Cities | Columbia GSAPP - PLAN6121 2021 | Mengqi Cao & Zixuan Zha

19

**District: C/R****Landuse:****Commercial/ Residential as Mixed-Use Zones**

- Help balance travel flows at peak hours

Height limitation: 110mPD/120mPD (principal datum) depends on its location

Site Coverage: 33.33% for buildings higher than 61m

**ZONES for COMMERCIAL/ RESIDENTIAL**

Column 1 Uses always permitted	Column 2 Uses that may be permitted with or without conditions on application to the Town Planning Board
Ambulance Depot Eating Place (not elsewhere specified) Exhibition or Convention Hall Flat Government Use (not elsewhere specified) Hotel House Library Market (not elsewhere specified) Off-course Betting Centre Office Place of Entertainment Private Club Public Clinic Public Utility Installation Public Vehicle Park (excluding container vehicle) Residential Institution School (in free-standing purpose-designed school building, in a commercial building or in the purpose-designed non-residential portion* of an existing building only) Shop and Services (not elsewhere specified) Social Welfare Facility Utility Installation for Private Project	Broadcasting, Television and/or Film Studio Commercial Bathhouse/Massage Establishment Eating Place (Cooked Food Centre only) Educational Institution Government Refuse Collection Point Hospital Information Technology and Telecommunications Industries Institutional Use (not elsewhere specified) Market (Hawker Centre only) Mass Transit Railway Vent Shaft and/or Other Structure above Ground Level other than Entrances Petrol Filling Station Place of Recreation, Sports or Culture Public Convenience Public Transport Terminus or Station Recyclable Collection Centre Religious Institution School (not elsewhere specified) Shop and Services (Motor-vehicle Showroom and Printing, Publishing and Allied Industries only) Training Centre

**Commercial/ Residential Zones as "Mixed Use Zones"**

- Residential and office uses are complementary in terms of the demands they make on transport systems in that when one is generating trips the other is attracting them and vice versa. This may be expected to **help balance travel flows in each direction at peak hours**.

**Regulations on Height:**

- On land designated "**Commercial/Residential**", no new development, or addition, alteration and/or modification to or redevelopment of an existing building shall result in a total development and/or redevelopment **in excess of the maximum building heights**, in terms of metres above Principal Datum, as stipulated on the Plan, **or height of the existing building, whichever is the greater**.

SOURCE: HONG KONG PLANNING AREA NO.8 APPROVED NORTH POINT OUTLINE ZONING PLAN NO.S/H8/26



### Urban Design Guidelines:

- 2] Building Free Zone: building heights are capped so as to stay below the skyline

It has been generally supported by the community that **ridgelines / peaks are valuable assets and their preservation should be given special consideration** as far as possible in the process of development.

The Metroplan (1991) guidelines which recommended **20% to 30% building free zone below selected sections of ridgelines (Figure 2) could be used as a starting point**, but allowing flexibility for relaxation on individual merits and for special landmark buildings to give punctuation effects at suitable locations.

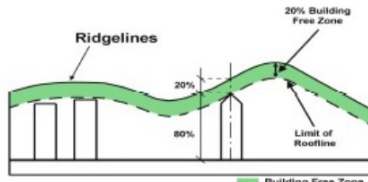


Figure 2 Building Free Zone to Preserve Views to Ridgelines



### 2] Considerations of Views to the Ridgelines: Building Height Restriction

The building height restrictions are to **preserve the views to the ridgelines from public viewpoints and to maintain a stepped building height concept** recommended in the Urban Design Guidelines Study **with lower buildings along the waterfront**, taking into account the local area context, **the findings of an Expert Evaluation on Air Ventilation Assessment (AVA EE) of wind circulation in the area**, and the need to **maintain visually compatible building masses in the wider setting**.

There are four height bands in general – 100 metres above Principal Datum (mPD), 110mPD, 120mPD and 130mPD in the Area for the “C”, “C/R”, “R(A)” and “R(E)” zones - increasing progressively from the waterfront to the inland and foothill areas. The proposed building height bands **help preserve views to the ridgelines, achieve a stepped height profile for visual permeability and wind penetration and circulation, reduce the solidness of the Area and maintain a more intertwined relationship with the Victoria Harbour edge.**

## 5] URBAN DESIGN GUIDELINES

### 3] Human Scale:

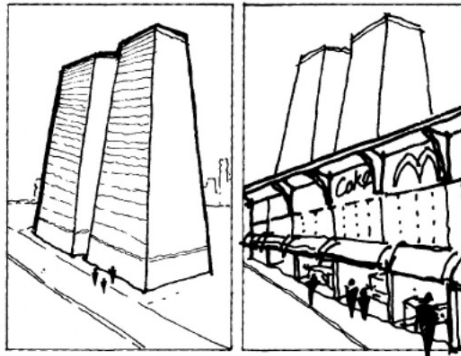


Figure 17 Dwarfed by Tower Podium Reinforces Human Scale

Human scale design elements such as perimeter arcades should be provided in order to create an intermediate scale between human and building. **Building façade** and **podium edge**, in terms of architectural design, architectural detailing and in the choice of building materials, should have interest, particularly at ground and first floor level.

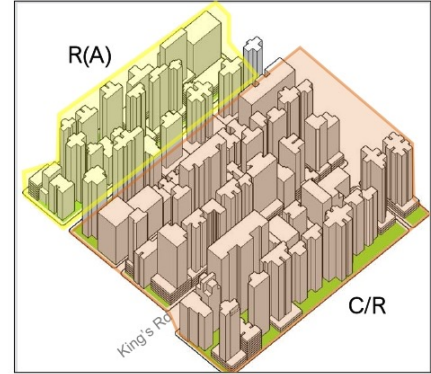
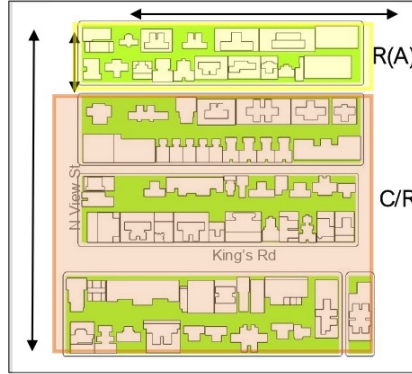


Façade of tall buildings are always several meters set back from the façade of podium edge





CASE STUDY	SECTION	TITLE
HONG KONG – NORTH POINT	4] ZONING ANALYSIS	4.4] EVALUATION



## PROS

- Maximize the residential density to the extent by planning terms to augment the supply of land and living space of people
- Define different residential types based on the amount of broad streets it abuts on and apply different site coverage and plot ratio standard to guarantee not only the sunlight and ventilation conditions of streets, but also the provision of open space within each district (performance-based)
- To protect and enhance the relationship of the city and its natural landscape context, Take the view for ridgelines into account for building height regulations
- Encourage mixed uses within each district in both horizontal and vertical perspective
- Consider a lot about basic sanitary, ventilation and sunlight conditions for public space to alleviate the negative effects high density brings about

## Cons

- Sunlight condition for each residential building hasn't been considered a lot
- Streets are too narrow and setbacks are not clearly regulated, which results in negative impacts on districts concerning noises
- Located in the site close to the waterfront districts, consider few about flood risk

CASE STUDY	SECTION	TITLE
HONG KONG – NORTH POINT	4] ZONING ANALYSIS	4.5] SUGGESTIONS

### Cultivating community green networks

Identify projects for community gardens, gardens in home/ office/ schools and urban farms, and encourage communal open spaces in developments at multiple scales and levels

### Reinventing the “Green and Blue System” networks

The study area is closed to the waterfront area. However, current green space and waterways are fragmented. Cultivating the community green networks and gradually developing a green and blue system would be the next step to better the community environment.

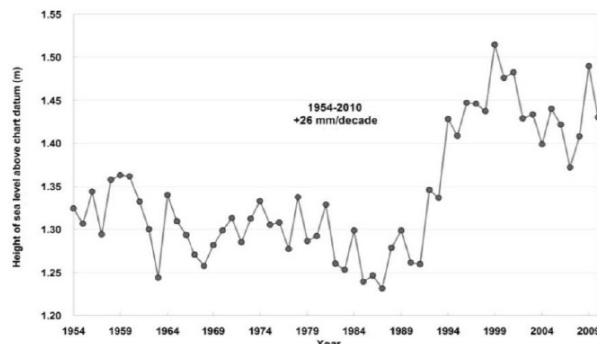


Figure 2. The annual mean sea level at North Point/Quarry Bay (1954–2008). Adapted from Zhang, Xie, and Liu (2011).

### Sunlight for Residence

When regulated the height for each building, take into account the sunlight condition of residential buildings nearby

### Climate issues: Flood risk

The mean sea level has risen by 30mm per decade between 1954 and 2015 .

### Responding actions:

- Appraise and identify the risk level for places in coastal floodplains and map the “100-year floodplain”, which is the area that will be inundated by the flood event having a 1-percent chance of being equaled in any given year
- Develop and implement guidelines for coastal flood-risk management that will enable authorities to seek different rules:
  1. Optional regulations for height or building façade or setback should be allowed for buildings in areas with flood risk
  2. Regulations would exempt floor area or specific land-use regulations to encourage new and existing buildings to meet or exceed the flood resistant construction standards
- Restrict or avoid new development in high-flood-risk zones in Hong Kong unless the stakeholders agree to face the flood risk or to adapt practices



## 1] RESIDENTIAL DENSITY GUIDELINES: MAXIMUM DOMESTIC PLOT RATIO

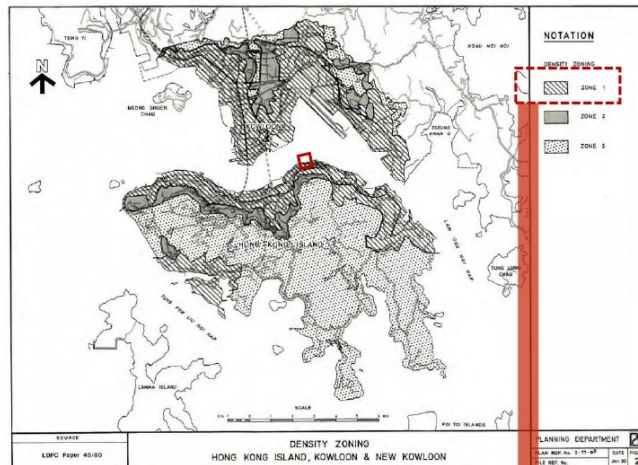


Table 1 Maximum Domestic Plot Ratios – Main Urban Areas

Density Zone	Type of Area	Location	Maximum Domestic Plot Ratio	Notes
R1	Existing Development Area	Hong Kong Island	8/9/10	(i) (ii)
		Kowloon & New Kowloon	7.5	(iii) (iv)
		Tsuen Wan New Town (covers Tsuen Wan, Kwai Chung & Tsing Yi Island)	8	(ii) (v)
	New Development Area and Comprehensive Development Area		6.5	(vi) (vii)
R2			6	(viii) (ix)
R3			3.6	(viii) (ix)

### Objectives and Functions of Residential Density Guidelines

- Residential density: Measured by which land is occupied by **either development or population**.
- Provide implications **for the provision of public facilities**, such as transport, utilities and social infrastructure.
- Boost the short- to medium- term land supply for housing use **by maximizing the residential density** to the extent in order to **augment the supply of land in Hong Kong and living space of Hong Kong people**.

### Residential Zone 1:

- Highest density of residential development** and applies to districts **well served by high capacity public transport systems** such as rail station or other major transport interchange.
- Buildings **often incorporate a significant component of commercial floorspace on the lower one to three floors**.

- Maximum domestic plot ratio of 8, 9 and 10 depends on Site Class A, B and C respectively.**
- If there is non-domestic floorspace, **maximum domestic plot ratio will be reduced** according to the provisions of the B(P)R composite building formula. → applies to Commercial/ Residential Zones

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Lawrence W.C. Lai, Daniel C.W. Ho, K.W. Chau, Mark H. Chua, Repeated planning applications by developers under statutory zoning: A Hong Kong case study of delays and design improvements in private residential development, *Land Use Policy*, Volume 57,2016,Pages 709-718,ISSN 02648377,<https://doi.org/10.1016/j.landusepol.2016.06.031>.

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# 5 TAIPEI

## CASE STUDY

### TAIPEI - ZHONGSHAN

臺北 - 中山區

台北 - 中山区

## CONTENTS

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

## TEAM

Hui Lu  
Jiuyu Wang

## DATE

3/2021



Practicum: Residential Planning in Global Cities | Columbia GSAPP - PLANA6121 2021 | Kate Dunham



CASE STUDY <b>TAIPEI – ZHONGSHAN</b>	SECTION <b>1] CASE STUDY INTRODUCTION</b>	TITLE <b>1.1] LOCATION &amp; OVERVIEW</b>
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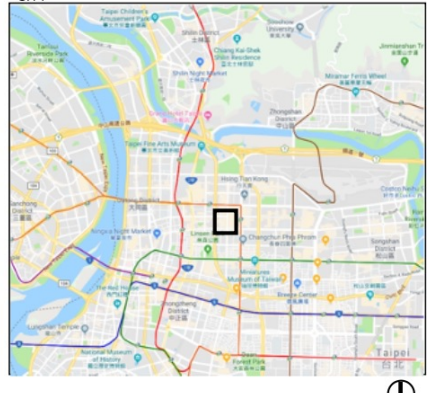
STUDY AREA



NEIGHBORHOOD



CITY



CASE STUDY <b>TAIPEI – ZHONGSHAN</b>	SECTION <b>1] CASE STUDY INTRODUCTION</b>	TITLE <b>1.2] FOCUS AREA</b>
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Source: Google Streetview

First Floor  
(Private  
parking space)



Source: Google Streetview

Sunlight  
(unaccessible  
to first floor)



Source: Google Streetview

First Floor  
(Shop)



Source: Qulizoutoutou (video)

Fire lane  
between  
buildings in  
one housing  
complex



Jilin Road

1. Classification: two-way four lane
2. Veranda serves as one way of making a setback
3. Parking area boundary was especially drawn to avoid motorbikes parking on veranda in 2010

Source: Google Streetview

1



2009

2



3



2020





### Lane 236

Between buildings are lanes with the east-west direction.

- Classification: single lane one-way traffic organization
- No setback  
There is no building setback on those lanes so that no pedestrian system exists.
- Transportation: Motorbikes, slowly driven cars



Source: Google Streetview



### Zhongyuan Street

Zhongyuan Street runs through the middle of the study area (between two blocks).

1. Classification: bi-directional single lane
2. Veranda  
Veranda serves as a kind of building setback, providing pedestrian ways.

1



2



Source: Google Streetview



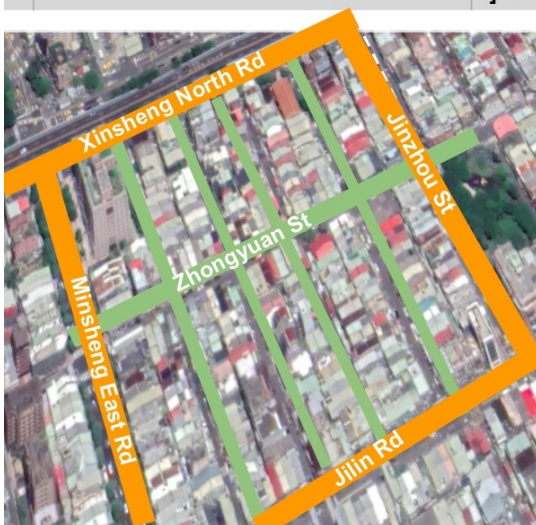


Source: Google Streetview

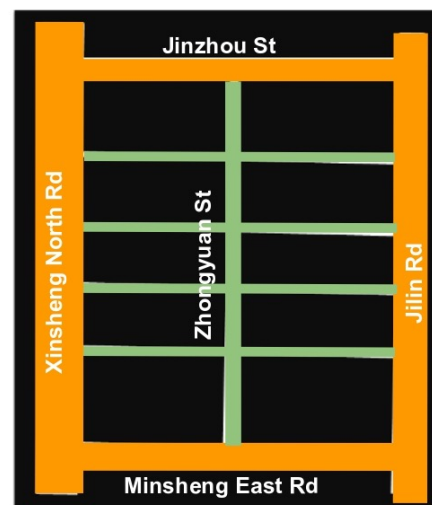
The building heights vary a lot. Roughly, the width to height ratio within the study area are in the range [1:3 -- 1:1]

Mostly, it remains 1:1.5

In narrow lanes, it keeps 1:2

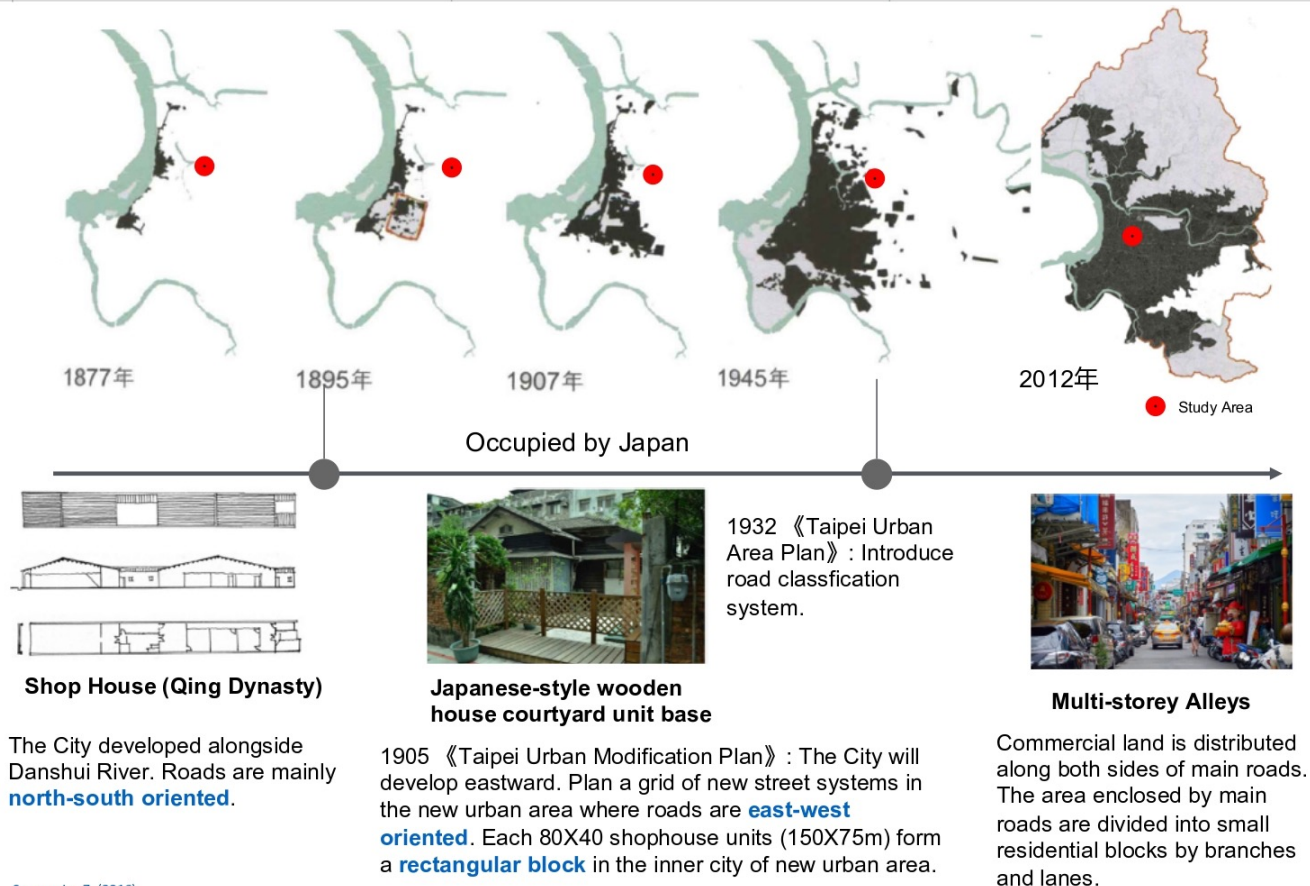


Source: Google Streetview



Xinsheng North Road	47m (Elevated + Ground)	Zhongyuan Street	8.5m	Lane 119, Section 2, Xinsheng North St	4m
Jinzhou Street	15m	Lane 127, Section 2, Xinsheng North St	6m	Lane 218, Jilin Road	6m
Section 2, Minsheng East Road	15m	Lane 123, Section 2, Xinsheng North St	4m	Lane 115, Section 2, Xinsheng North St	4m
Jilin Road	20m	Lane 236, Jilin Road	4m	Lane 200, Jilin Road	4m





### A Typical Family:

- A couple with one child
- Live in a multi-unit apartment buildings
- Have above average income
- Live closely with old neighbors
- Frequently participate in neighborhood activities



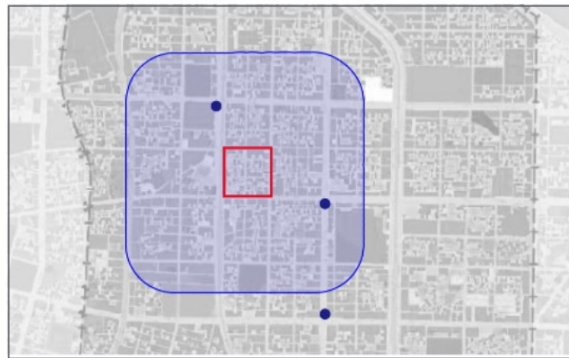
	Population density ( per ha)	Aged population density (65+) (per ha)	Average number of Residents per household
<b>Study Area Neighborhood</b>	<b>280</b>	<b>53</b>	<b>/</b>
Zhongshan District	196	/	2.3
Taipei City	115	/	2.55



- ★ Metro Station
- Metro Line
- Express Way
- Main Road
- Secondary Road

#### Transportation Condition:

- Metro stations are one block away
- Main roads and second roads are mostly designed for automobiles
- Little space left for motorbikes and bikes



- Metro Station
- Study Area
- 5min-walk Distance Area (from study area)

#### Usage:

- Bus stop demand-supply ratio is 0.83 (demand less than supply)
- Motorbike parking demand-supply ratio is 1.38 (demand more than supply)
- The study area highly rely on motorbikes for commuting



Child Day Care Center



Senior Service Center



Green Space 500m Service Area

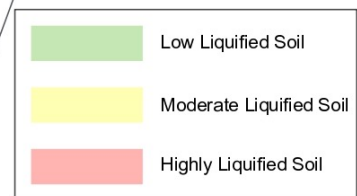
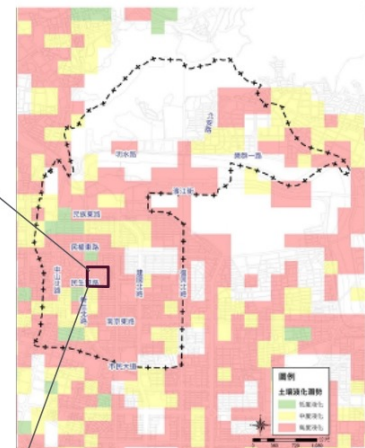
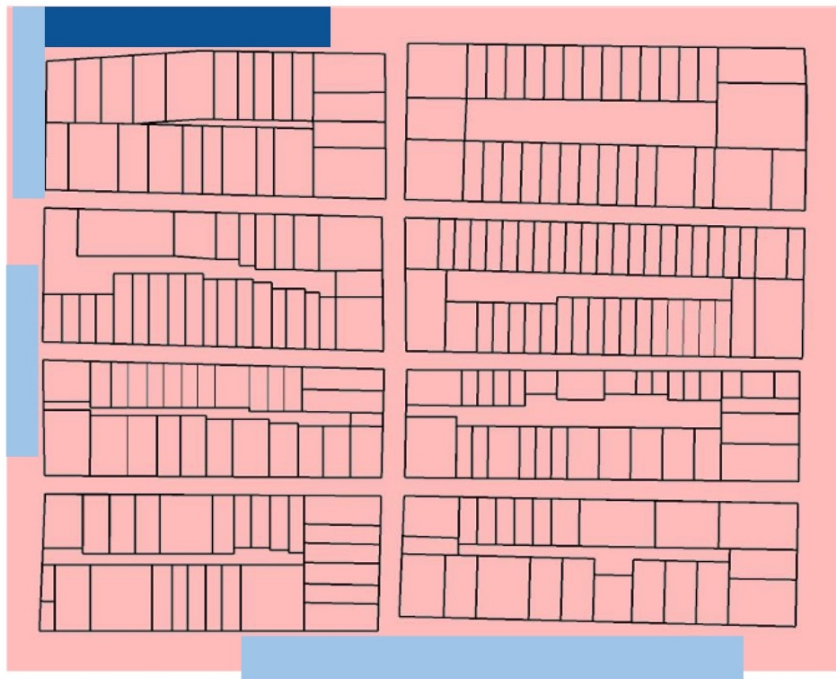
Jinzhou Park



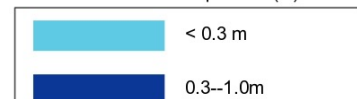
Source: Taipei City Urban Planning Commission



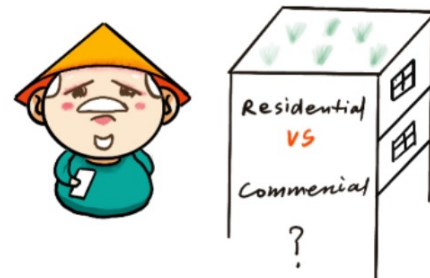
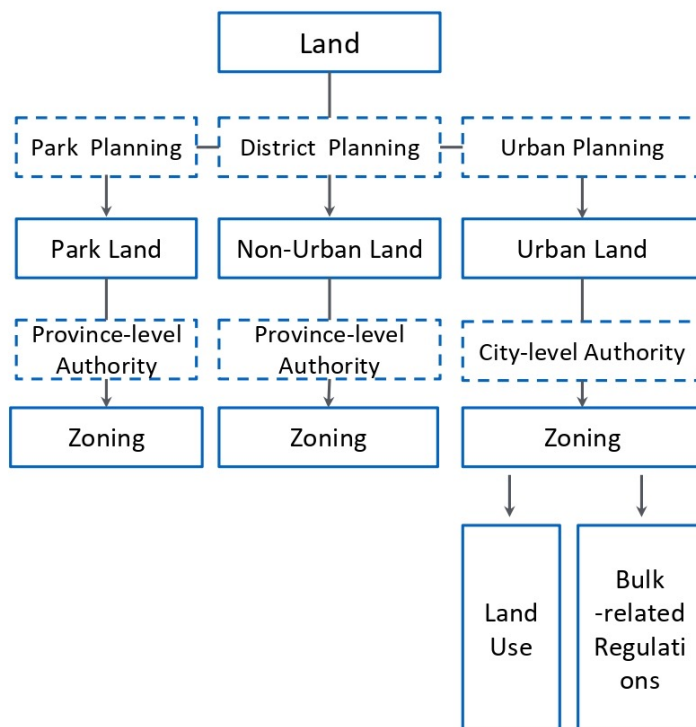
- All on highly liquified soil
- Ground floor face with the danger of flood



Possible flooding range and depth under 130mm rainfall per hour (m)



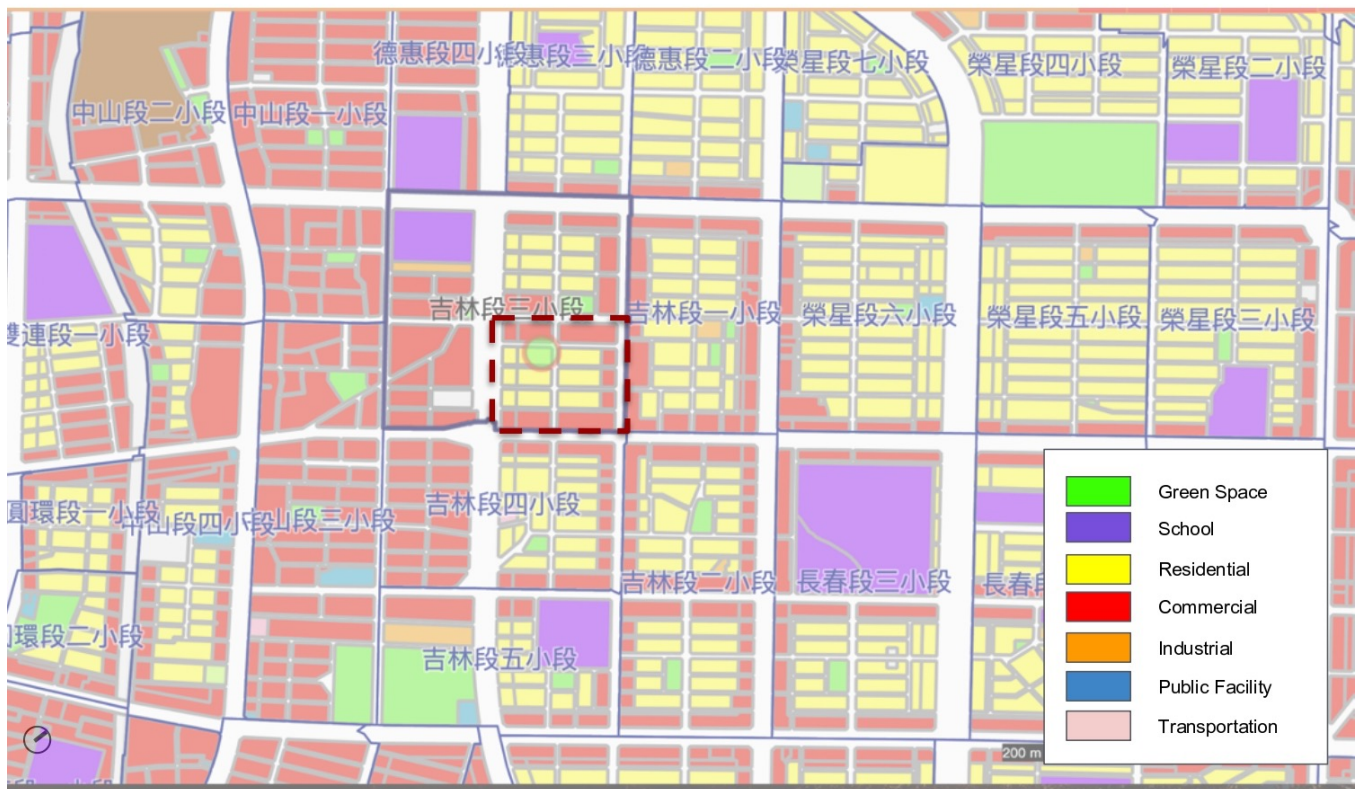
Source: Taipei City Urban Planning Commission



### How to change zoning?

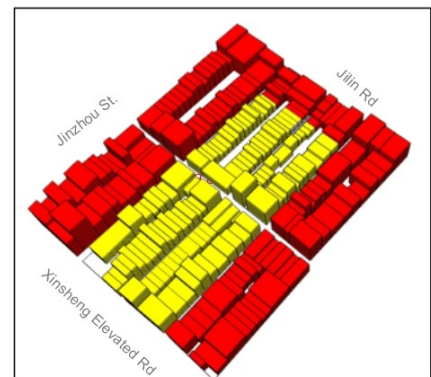
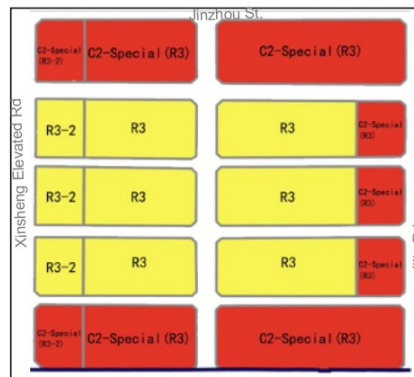
- **Individual** - Land owners who have land that matching requirements can apply for zoning modification (to Urban Planning Commission)
- **Authority** - Taipei Urban Planning Commission enact Urban Redevelopment Plan to rezone areas

CASE STUDY	SECTION	TITLE
TAIPEI - ZHONGSHAN	4] Zoning Analysis	4.1] ZONING MAP



Source: Taipei City Urban Planning Commission

CASE STUDY	SECTION	TITLE
TAIPEI – ZHONGSHAN	4] ZONING ANALYSIS	4.2] ZONING SUMMARY



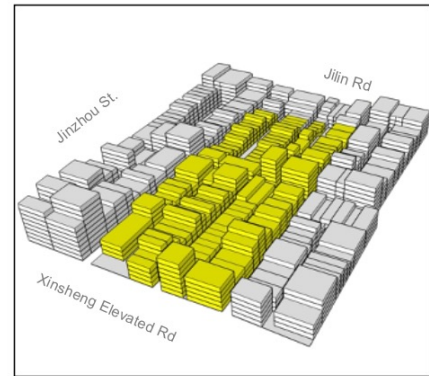
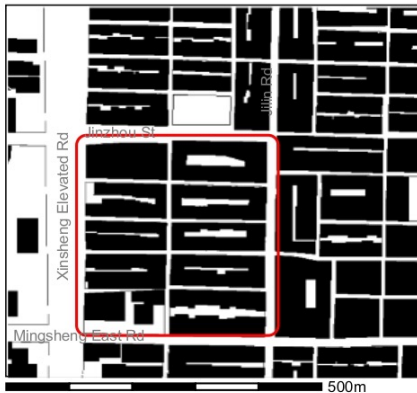
#### SUMMARY OF ZONING REGULATIONS (See Appendix for supporting research)

1	ZONING DISTRICTS	R3	R3-2	C2-Special (R3)	C2-Special (R3-2)
2	LAND USE	Residential*	Residential*	Commercial*	Commercial*
3	FAR	2.25	4.00	2.25	4.00
4	SITE COVERAGE	45-50%	45-50%	45-50%	45-50%
5	SETBACKS	Front: 3m, Rear: 2.5m, Side:3m			
6	HEIGHT	4 Floors			

\* Mix used are allowed, mostly are in first floor

Source: Taipei City Urban Planning Commission





## SUMMARY OF ZONING REGULATIONS (See Appendix for supporting research)

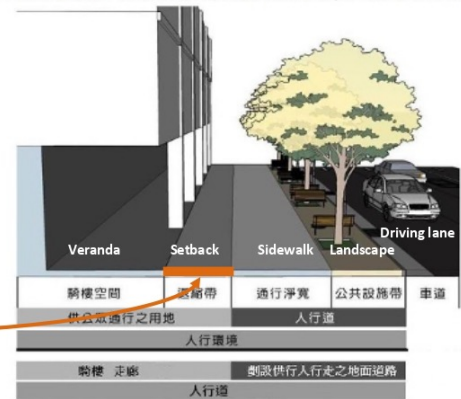
1	ZONING DISTRICTS	R3	R3-2
2	LAND USE	Residential*	Residential*
3	FAR	2.25	4.00
4	SITE COVERAGE	45-50%	
5	YARD DEPTH (SETBACK)**	Front: 3m, Rear: 2.5m, Side: 3m **	
6	HEIGHT	minimum: 4	

Source: Taipei City Urban Planning Commission; Bureau of Civil Affairs

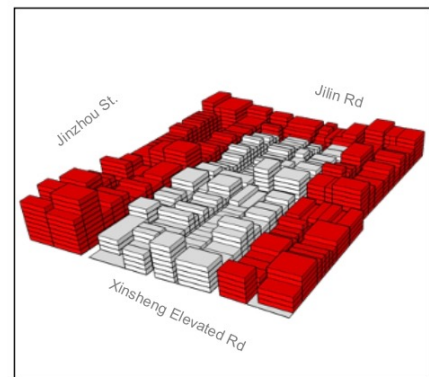
\* Mixed use are allowed.

\*\* Setbacks and veranda can be each other's alternative in some residential districts

\* 內政部營建署 都市本交通道路規劃設計手冊(第二版 2018年11月)



\* 道路交通管理處罰條例第3條第3項



## SUMMARY OF ZONING REGULATIONS (See Appendix for supporting research)

1	ZONING DISTRICTS	C2-Special (R3)	C2-Special (R3-2)
2	LAND USE	Commercial*	Commercial*
3	FAR	2.25	4.00
4	SITE COVERAGE	45-50%	
5	YARD DEPTH (SETBACK)	Front: 3m, Rear: 2.5m, Side: 3m	
6	HEIGHT	4 Floors	4 Floors

Source: Taipei City Urban Planning Commission; Bureau of Civil Affairs

\* Mixed use are allowed.

\*\* Setbacks and veranda can be each other's alternative in some residential districts



Veranda

Sidewalk

CASE STUDY <b>TAIPEI – ZHONGSHAN</b>	SECTION <b>4] ZONING ANALYSIS</b>	TITLE <b>4.3] EVALUATION</b>
---	--------------------------------------	---------------------------------

PROS	Cons
<ul style="list-style-type: none"> <li>• Streets: A crisscross, hierarchical road network make the neighborhood walkable</li> <li>• Buildings : Regulations encourage to take advantage of green roof to address water issue</li> <li>• Open space: <ul style="list-style-type: none"> <li>- Green space are accessible within 500m (Jinzhou Park)</li> <li>- In front of the shops on the crossroads, a small area can be used for informal interaction</li> </ul> </li> <li>• Climate adaptation: The terraces and roofs of buildings should be greened, and the greening area should reach 50%.</li> </ul>	<ul style="list-style-type: none"> <li>• Street: Trash and other stuff piles up on the lanes; Does not meet current requirement about setback</li> <li>• Parking: Delimit parking areas on the road, compressing motor vehicles use, pedestrian use space</li> <li>• Building: cannot ensure sufficient sunlight; D/H is not comfortable</li> <li>• Veranda: Regulations are not clear</li> </ul>

CASE STUDY <b>TAIPEI – ZHONGSHAN</b>	SECTION <b>4] ZONING ANALYSIS</b>	TITLE <b>4.4] RECOMMENDATIONS</b>
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#### Environmentally

- **Green space**  
Evaluate buildings based on conditions regarding building safety, building age, land suitability. If buildings are in a dangerous condition, then consider transforming buildings into a green space
- **Veranda**  
Veranda affects the load-bearing of the building, stipulating the width of the veranda and building requirements; promote urban style, highlighting the pedestrian space under the veranda
- **Sunlight**  
For buildings located inside the neighborhood, add special review for adding floor

#### Economically

- **Setback**  
Improve setback regulations to make gourmet business district (including food vendors and food stores) more attractive via allowing adequate space



## 5A] APPENDIX - BIBLIOGRAPHY

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# 6 TOKYO

## CASE STUDY

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

## CONTENTS

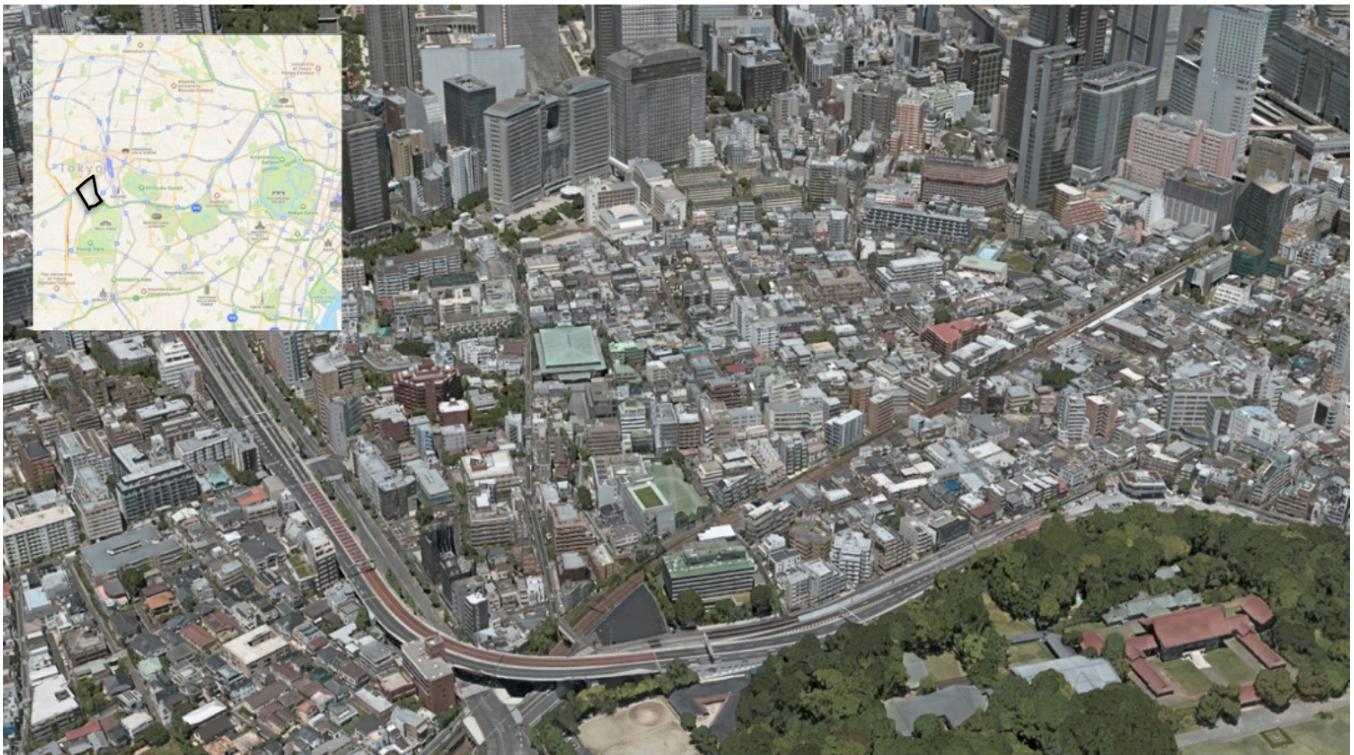
1. INTRODUCTION
2. CHARACTER
3. BACKGROUND
4. ZONING ANALYSIS
5. APPENDIX

## TEAM

Hanzhang Yang  
Priska Marianne

## 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**

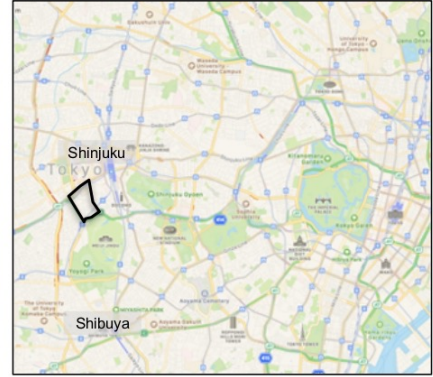
STUDY AREA



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

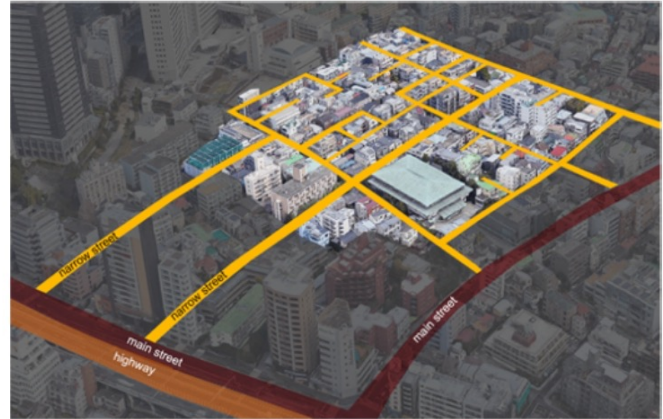
### Building-street relations along main streets (boulevards)

- 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.

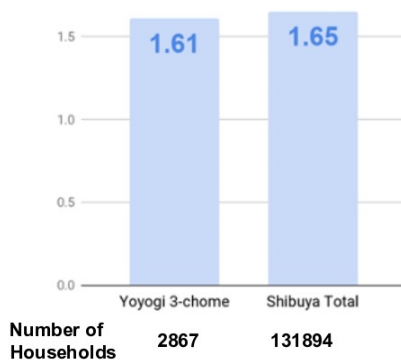
The development of transit in this area in the early 20th century makes Yoyogi a dense residential area. Today Yoyogi 3-chome is **well connected by transit**:

- **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

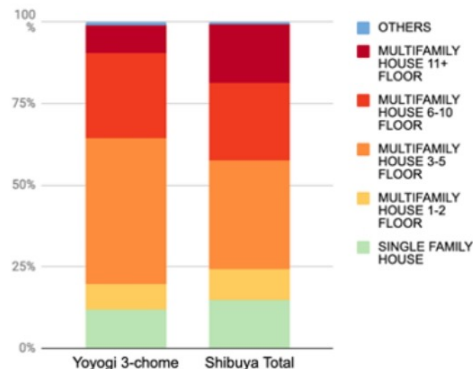
North to Yoyogi, Shinjuku's redevelopment started in the 1960s and the former site of Yodobashi water purification plant now sits the new CBD.

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).

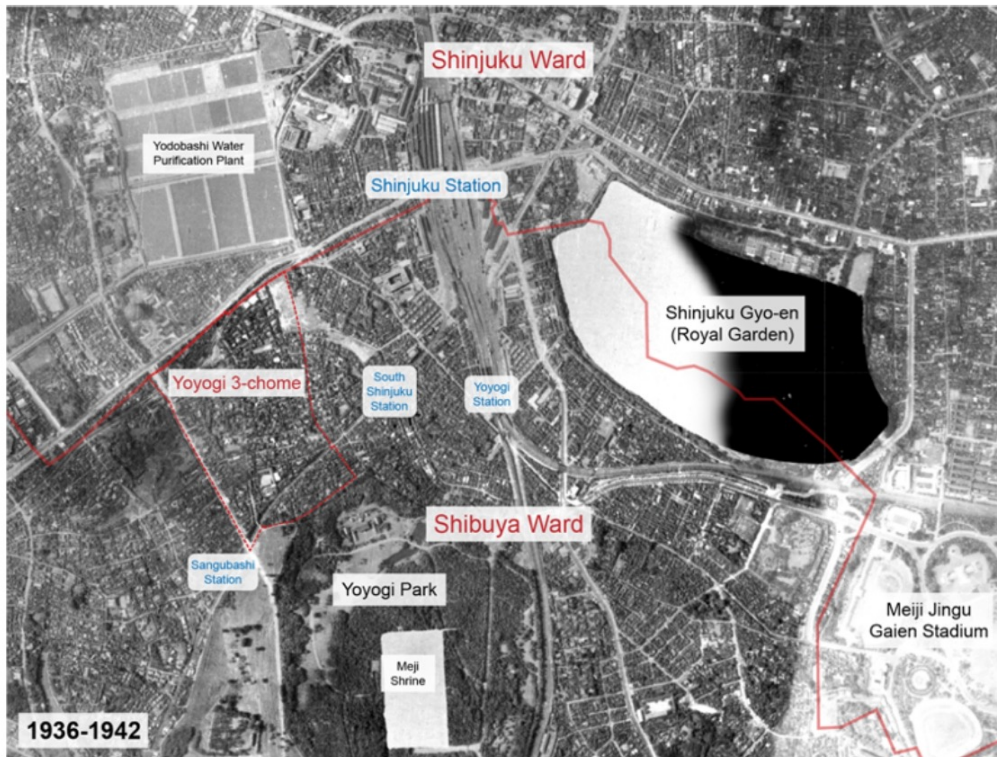


14 stories

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

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





Source: Geospatial Information Authority of Japan

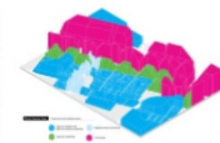
Although located in the Shibuya ward of Tokyo, Yoyogi is more close to the Shinjuku station area, the busiest transit hub in the world.

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.



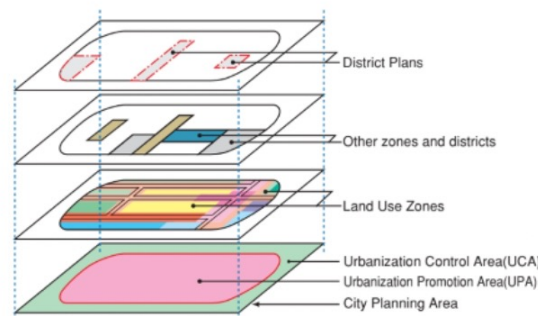
Zoning and Max. Building Volume.  
Source: [Gollway et al.](#), (n.d.)



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).

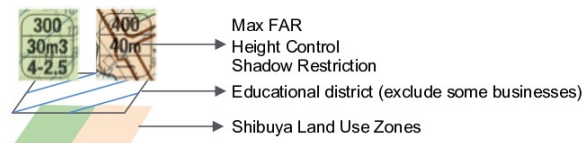
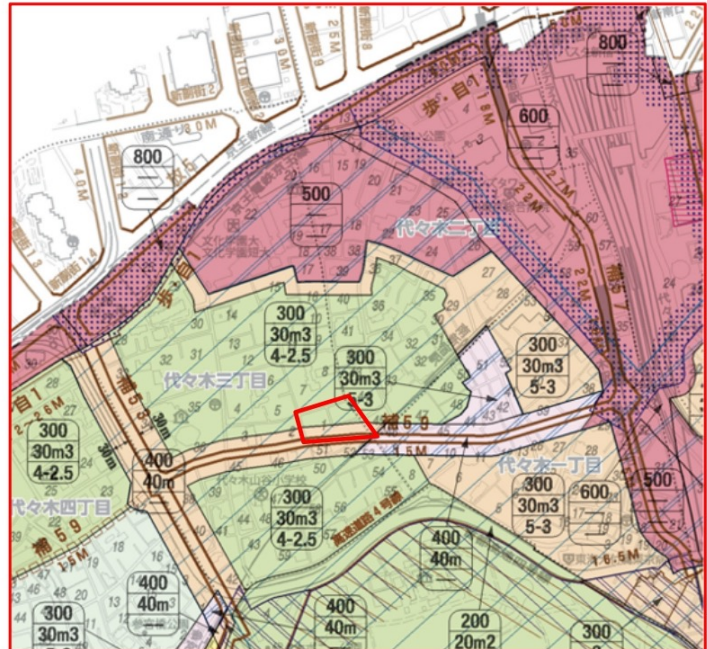




Land use zones in Shibuya Ward, Tokyo

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).



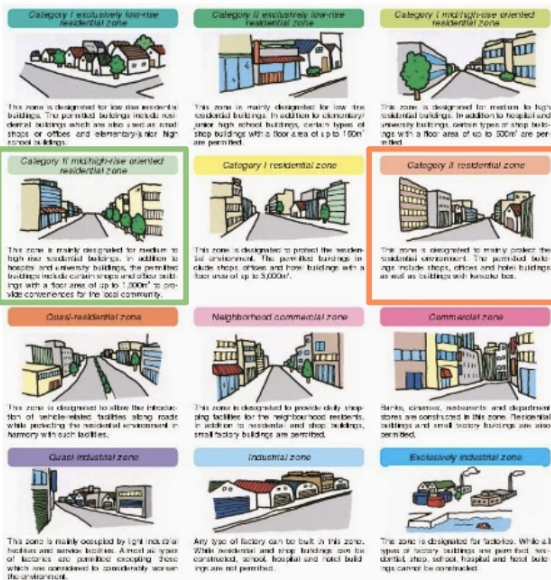
## SUMMARY OF ZONING REGULATIONS (See Appendix for supporting research)

## 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)												
Gymnasiums, Temples, Churches, Clinics												
Hospitals, Universities												
Stores (mainly selling daily commodities), Restaurants with floor space of 100m² max. on the first or second floor (including)												
Stores/Restaurants with floor space of 500m² max. on the first or second floor (including)												
Stores/Restaurants not specified above (including)												
Offices, etc. not specified above												
Habitable houses												
Karaoke boxes (including)												
Theaters, Movie theaters (including)												
cin Theaters, Movie theaters, Stores, Restaurants, Amusement facilities and so on, with more than 10,000m² of floor area												
Bathhouses with private rooms												
Independent garage with floor space of 500m² max. on the first or second floor												
Factories with working capacity, Independent garage if the type for specified items												
Auto repair shops												
Factory with some possibility of danger or environmental degradation												

Note A: Must not be built on the third floor or higher. Must not exceed a floor area of 1,500m².  
 B: Must not exceed a floor area of 3,000m².  
 C: Audience seating floor area must not exceed 200m².  
 D: Stores and restaurants must not be built.  
 E: Floor area must not exceed 500m².  
 F: Floor area must not exceed 100m².  
 G: Floor area must not exceed 300m².

## Strict Zoning Districts &amp; 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.

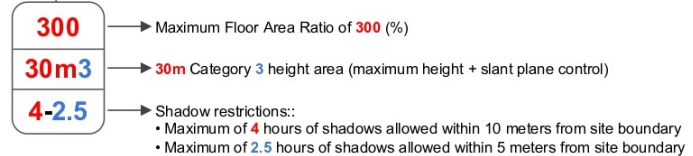
Zoning district	Land use	FAR	Site coverage	Setback	Height	Slant plane
Category II mid/high-rise oriented residential zone	Residential	300%	60%	N/A	Max: 30m	Yes



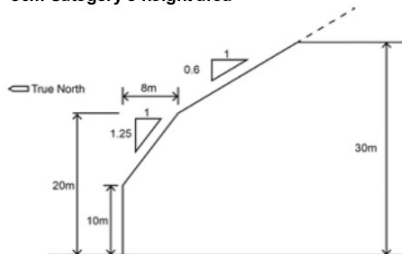
Source: Tatsuo AKASHI (2007)



Source: Google Maps, Google Earth

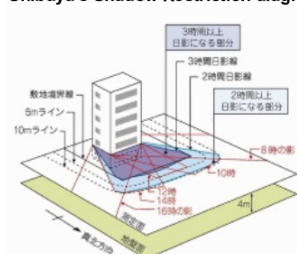


## 30m Category 3 height area



▲ 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

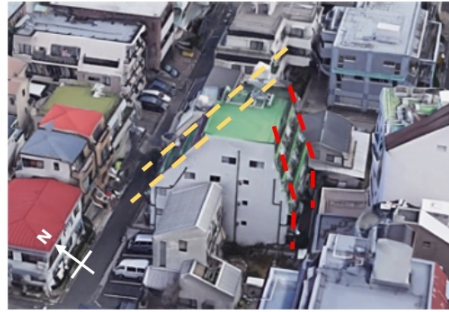
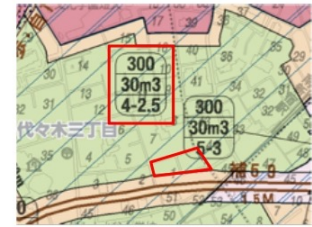


For zoning other than "exclusively low-rise residential," shadow restrictions are measured at the 4m elevation, because most of the ground floor are used for shops or garages.  
 (Source: Shibuya City Office, n.d.)

### 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.

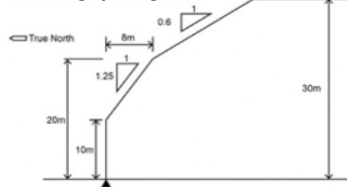
Zoning district	Land use	FAR	Site coverage	Setback	Height	Slant plane
Category II mid/high-rise oriented residential zone	Residential	300%	60%	N/A	Max: 30m	Yes



- Height Control
- Shadow Restrictions

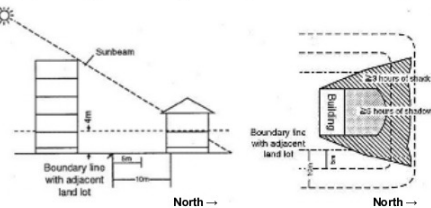
#### Slant Plane (Height Control)

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.

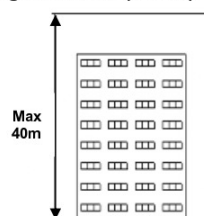
Zoning district	Land use	FAR	Site coverage	Setback	Height	Slant plane
Category II residential zone	Residential	400%	60%	N/A	40m	N/A



Source: Tatsuo AKASHI (2007)



#### Height Control (Direct)



— Height control

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"> <li>• <b>Mix of uses in most zoning districts.</b> 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.</li> <li>• <b>Ensuring sunlight access by combining prescriptive zoning and performance-based zoning approaches.</b> The prescriptive slant plane regulations ensures predictability of shadow effects while the performance-based sunlight control regulations gives the flexibility to the built form.</li> <li>• <b>Zoning rules guided at the national level but local governments have planning power to create special district zones.</b> This makes enforcement of zoning effective and efficient while allowing municipalities some flexibility to a certain extent.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>National zoning code lacks the flexibility to local context</b> Zoning and land use system didn't response to unique local characteristics, but to a broader national interest.</li> <li>• <b>Zoning doesn't consider aspects of affordable housing</b> No affordable housing requirements in the zoning text and maps</li> <li>• <b>No minimum FAR requirements promotes sprawl</b> 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.</li> <li>• <b>Open Spaces and Green Areas are not part of land use zoning in cities</b> No land use reserved for parks or open spaces in urban areas.</li> </ul>

### 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.

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# 7 SEOUL

CASE STUDY

## SEOUL SOUTH KOREA

CONTENTS

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

TEAM

Soyeon Kim  
Yiyi Jiang

DATE

03/2021





CASE STUDY	SECTION	TITLE
<b>GEUMHO-DONG 3-GA, SEOUL</b>	<b>1] CASE STUDY INTRODUCTION</b>	<b>1.1] LOCATION &amp; OVERVIEW</b>

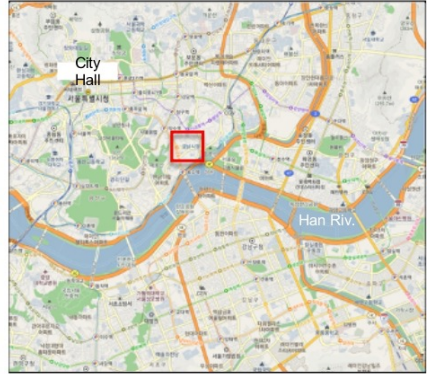
STUDY AREA



NEIGHBORHOOD



CITY



CASE STUDY	SECTION	TITLE
<b>GEUMHO-DONG 3-GA, SEOUL</b>	<b>1] CASE STUDY INTRODUCTION</b>	<b>1.2] FOCUS AREA</b>





CASE STUDY	SECTION	TITLE
GEUMHO-DONG 3-GA, SEOUL	2] CHARACTER	2.1] URBAN PATTERN



### Contrast of Urban Pattern between apartments and low-rise housings

- Despite the same land use (General Residential Area 2), Seoul City allows significantly different types of housing:  
*Apartment Complexes & Low-rise Buildings*

CASE STUDY	SECTION	TITLE
GEUMHO-DONG 3-GA, SEOUL	2] CHARACTER	2.2] BUILDING TYPOLOGIES

1 Apartments



General Residential Area 2 (or 3)

- High-rise** housings: 10-15 stories
- Buildings are new
- Large footprints-large lots

2 Low-rise housings



General Residential Area 2 (or 1)

- Mid- / Low-rise** housings: 3-7 stories
- Buildings are old
- Buildings are built by themselves, no uniform style

3 Market place



Neighboring Commercial Area

- Low-rise** buildings: 2-4 stories
- Buildings are old
- Ground floor is occupied by local retail, restaurants, banks, etc.



focus area



CASE STUDY	SECTION	TITLE
GEUMHO-DONG 3-GA, SEOUL	2] CHARACTER	2.3] BETWEENNESS

In Apartment



- Streets are wide: 6-9 meters
- Two-way streets
- Newly built
- Clean

*Between  
Apartments & Low-rise housings*



In Low-rise housings



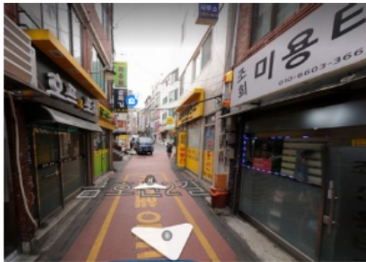
- *Big wall*
- *No connections/interactions*

- Streets are narrow: 2-6 meters
- One-way streets
- Bikes and motorbikes park at the sides

*Between  
Low-rise housings & Marketplace*



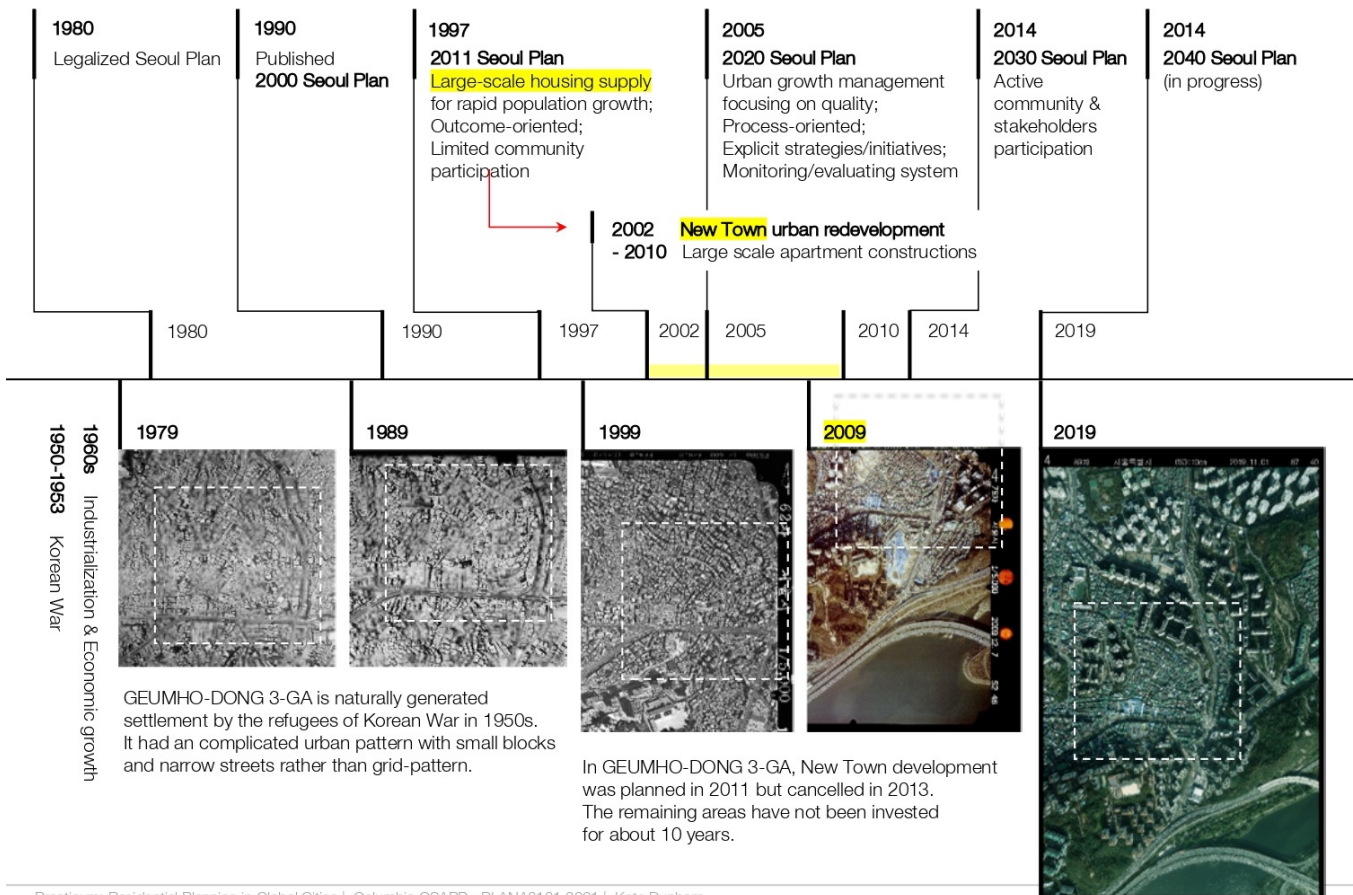
In Marketplace



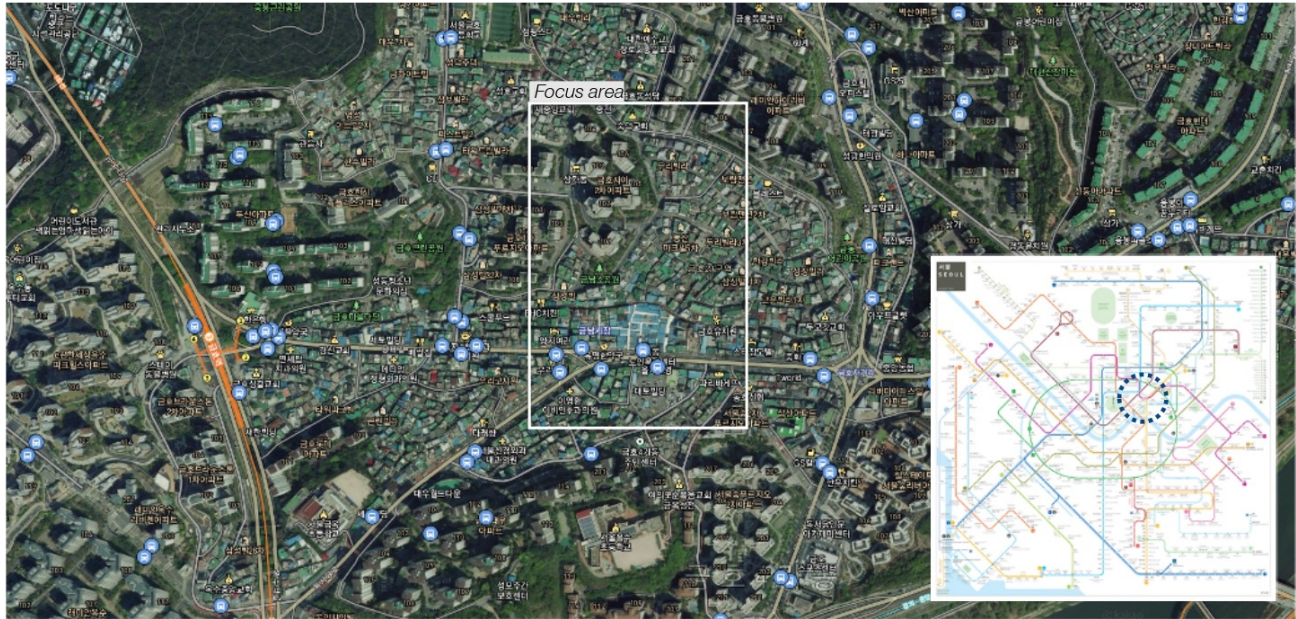
- *Spontaneously mixed*
- *No boundaries*

- Similar to low rise building streets

CASE STUDY	SECTION	TITLE
GEUMHO-DONG 3-GA, SEOUL	3] BACKGROUND	3.1] RELEVANT HISTORY







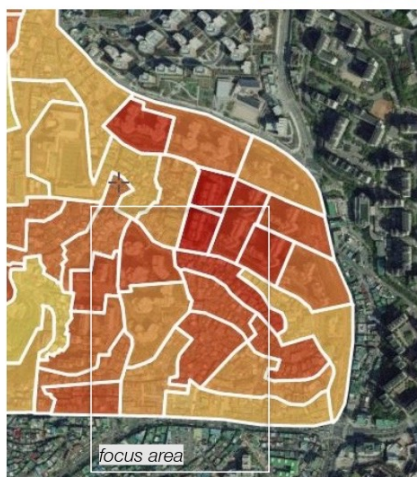
### *Good location, worth investing. High real-estate value*

- 10-minute walk to the subway station (Geumho Station, Line 3), bus stops – easy access to public transit
- Around 30 minutes to the city center (City Hall) or central business districts (Gangnam, Jongro) by public transit
  - to Gangnam, 27 min by subway / to City Hall, 35 min by subway

### *Zoning Reflected on Demographics – Does zoning create disparities?*

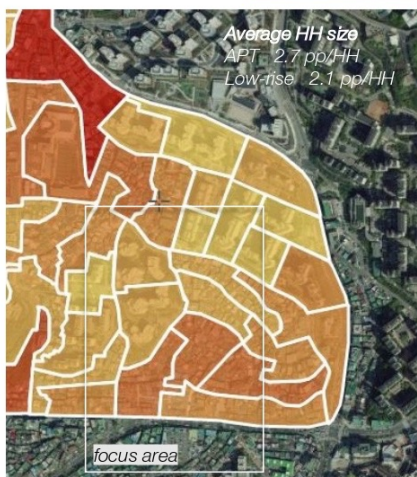
- Relatively denser population in low-rise neighborhoods
- More people who live alone, and much older in low-rise neighborhoods than apartment complexes
- Geumho-dong 3-ga seems socially mixed as a whole, but significant disparities exist among different zoning districts.

Population Density Low High



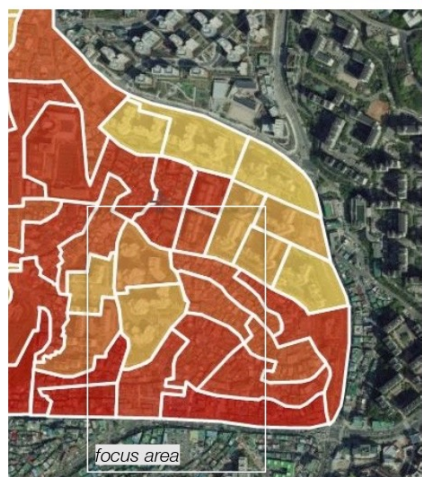
APT high density  
LOW-RISE low to mid density

Single-person Households Low High



APT less single-person HHs (18.5%)  
LOW-RISE more single-person HHs (40.1%)

Average Age Low High

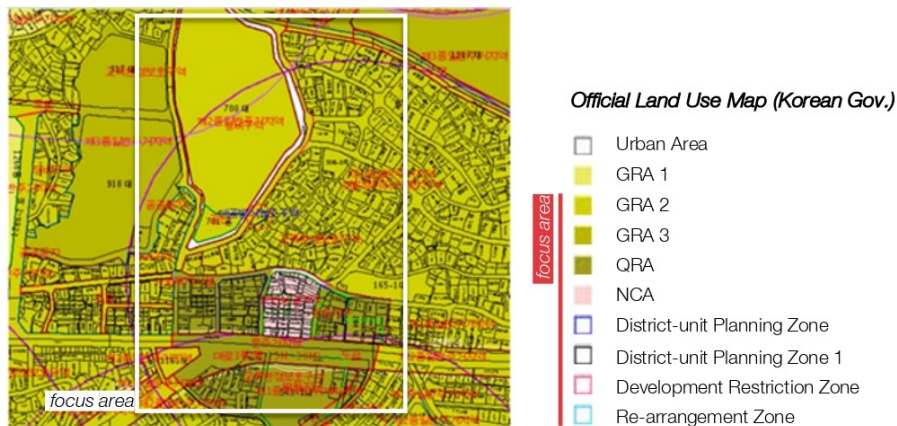


APT younger (av. 38.6 year-old) LOW-RISE older (av. 53.8 year-old)



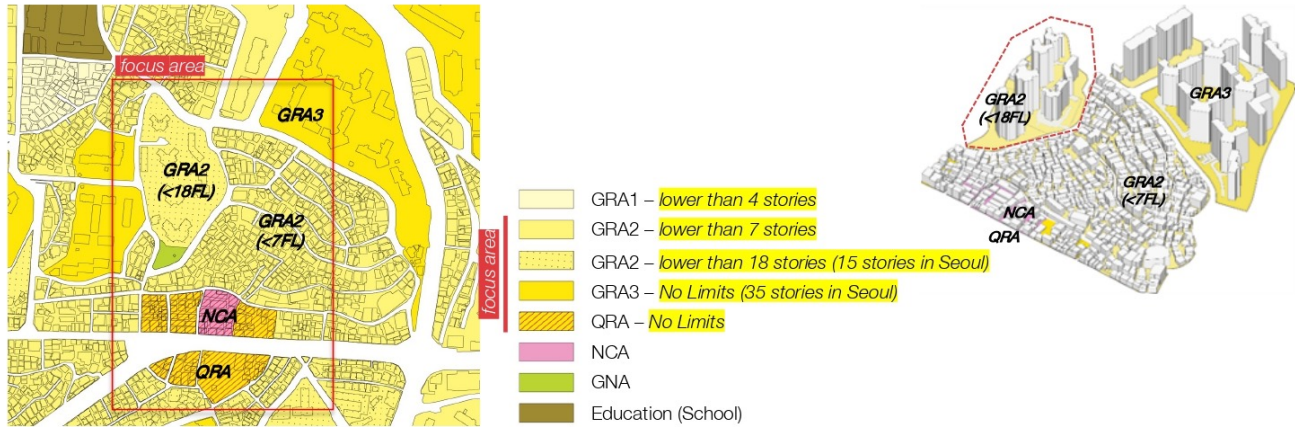
### Land Use / Urban Planning in Korea

- Land use framework at National Level
- Comprehensive plan for Metropolitan Areas (focusing on metropolitan cities, e.g., Seoul, Busan, Daegu, Gwangju, etc.)
- Master plan for Community Areas (3-5 big communities in a city)

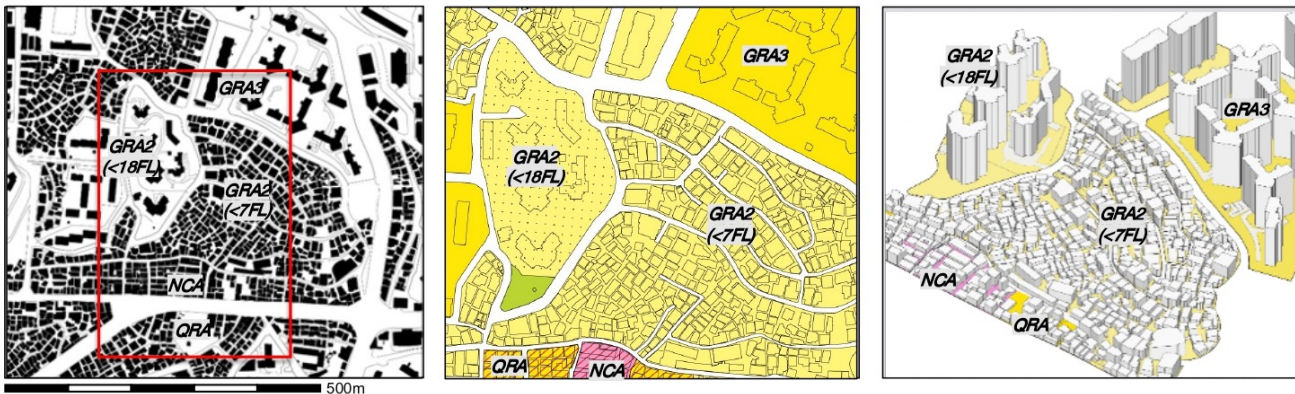


#### 4 Land Uses

RESIDENTIAL	ERA	Exclusive Residential	ERA1: independent housing ERA2: multi-unit housing
	GRA	General Residential	GRA1: low-floor housing GRA2: mid-floor housing GRA3: mid- & high-floor housing
	QRA	Quasi-residential	Residential + Commercial + Business
COMMERCIAL	CCA	Central Commercial	Center/Subcenter of a metropolis
	GCA	General Commercial	General commercial + business
	NCA	Neighboring Commercial	Supplying the daily necessities and services in the neighboring area
	CiCA	Circulative Commercial	Increasing the circulation function in the city and between the areas
INDUSTRIAL	EI / GI / QI	Exclusive Industrial / General Industrial / Quasi-industrial	
GREEN	GC / GP / GN	Green Conservation / Green Production / Green Natural	



Up-zoning (more permissions) ↓	focus area	GRA1	Lower than 4 stories	Housings Neighboring Amenities under floor area of 1000m2	Single family, Multi family Neighboring Amenities 1 Daycare, Museums, Religious institutions, Schools, Parking, etc.
		GRA2	Lower than 7 stories / Lower than 18 stories	Housings Neighboring Amenities under floor area of 1000m2	Single family, Multi family Neighboring Amenities 1 Religious institutions, Museums, Schools, Parking, etc.
		GRA3	No Limits	Housings Neighboring Amenities	Single family, Multi family Neighboring Amenities 2 (including Neighboring Amenities 1) Retailers, Hospitals, Sports, Offices under 3000m2, Storages, Gas stations, etc.
		QRA	No Limits	Housings Neighboring Amenities	Single family, Multi family Neighboring Amenities 2 (including Neighboring Amenities 1) Recreations, Hotels, Junkyards, Stock Farms, Cemetery, Logistics, etc.



SUMMARY OF ZONING REGULATIONS (See Appendix for supporting research)				NOTES:
1 ZONING DISTRICTS	GRA2	GRA3	QRA	See Appendix 5.1
2 LAND USE	Residential	Residential	Residential + Commercial + Business	
3 FAR	200%	250%	400%	
4 SITE COVERAGE	60%	50%	60%	
5 SETBACKS	If adjacent to other buildings or lots: 1.5m setback If adjacent to roads wider than 6m: no setback			See Appendix 5.2
6 HEIGHT	7 or 15 of floors	35 of floors	No limits	See Appendix 5.1
OTHER NOTABLE ZONING REGULATIONS				
7 Sunlight and Setbacks	To secure sunlight, building forms are controlled by setback regulations – specific diagram is shown in Appendix.			See Appendix 5.2
8 District-unit Planning Zone	Special zoning (plans) for selected district to improve the aesthetics and a livable environment			
9 Improvement Zone	Special zoning (plans) for selected neighborhoods that have concentrated low-income population/substandard housings			See Appendix 5.4



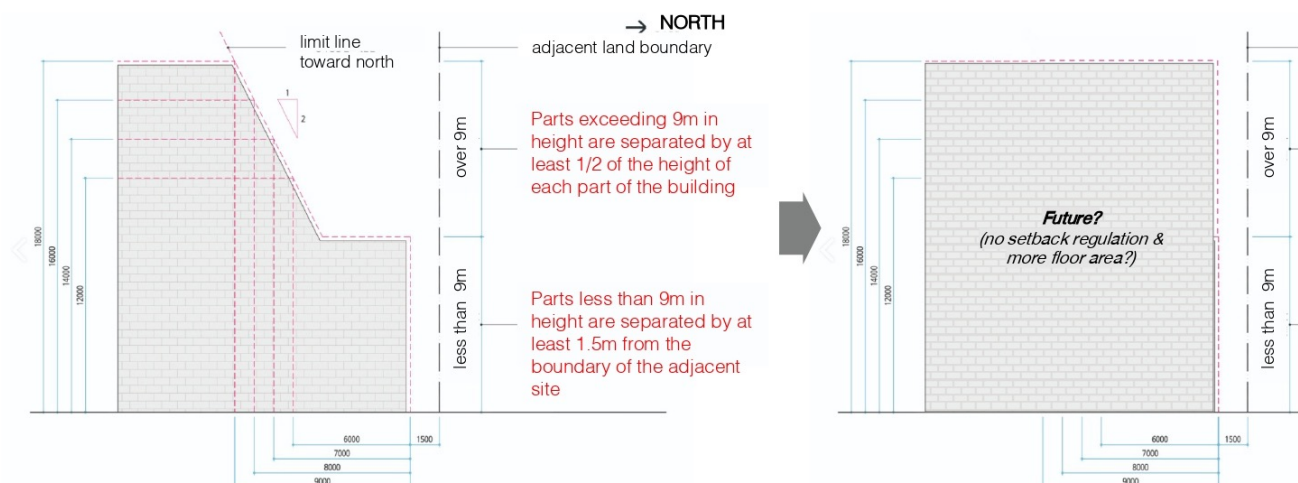
### Use Areas

- Based on *THE NATIONAL LAND PLANNING AND UTILIZATION ACT*

RESIDENTIAL	ERA	Exclusive Residential	Class I: independent housing Class II multi-unit housing
	GRA	General Residential	Class I: low-floor housing Class II: mid-floor housing Class III: mid- & high-floor housing
	QRA	Quasi-residential	Residential + Commercial + Business
COMMERCIAL	CCA	Central Commercial	Center/Subcenter of a metropolis
	GCA	General Commercial	General commercial + business
	NCA	Neighboring Commercial	Supplying the daily necessities and services in the neighboring area
	CiCA	Circulative Commercial	Increasing the circulation function in the city and between the areas
INDUSTRIAL	EIA	Exclusive Industrial	Mainly the heavy chemical industry, pollutive industries, etc
	GIA	General Industrial	Allocating the industry not impeditive to the environments
	QIA	Quasi-industrial	The light industry and other industries, but need of supplementing the residential, commercial functions and business function
GREEN	GCA	Green Conservation	Conservation of natural environment, scenery, forest and green areas
	GPA	Green Production	Reservation on development for the main purpose of agricultural production
	GNA	Green Natural	Preservation for securing green area space, prevention of city's expansion, supply of future city sites, etc, in which restrictive development is allowed for only inevitable cases

### Basic principles of setback regulation in Korea

- Based on *BUILDING ACT* (Article 61, Paragraph 1) and *ENFORCEMENT OF BUILDING ACT* (Article 86)
- Korea's sunlight/setback regulation enforces the buildings to be apart from the other buildings or roads on the north side; thus, it allows the buildings to secure indoor sunlight and makes the wedding-cake shape of buildings.
- However, the regulation is controversial now. Since the 2010s, many architects and developers have attempted to demolish the setback regulation. It is grounded on three main reasons: 1) it reduces about 30-40% of housing units in new developments, especially for small parcels under 1500m<sup>2</sup>; 2) this regulation does not meet the widely accepted norm in Korea – the south-side sunlight is preferable than north-side; 3) often people in low-rise housings make illegal structures on the void created by setback regulation, so the regulation is not practically working but also contributes to the informal appearance of low-rise housings (Appendix 5.2). Because the Korean government faces the difficulties of supplying housing in the urban center, now the regulation is under consideration to be changed.



CASE STUDY	SECTION	TITLE
GEUMHO-DONG 3-GA, SEOUL	4] ZONING ANALYSIS	4.4] EVALUATION

PROS	Cons
<ul style="list-style-type: none"> <li>• <b>Socially mixed neighborhoods</b> <ul style="list-style-type: none"> <li>- mixture of different housing types and lifestyles</li> <li>- have opportunity to learn more about other groups</li> </ul> </li> <li>• <b>Easy access to urban amenities</b> <ul style="list-style-type: none"> <li>- easy access to living essentials by adjacent marketplace</li> <li>- retails, restaurants, stores are in 10-min walk</li> <li>- good walkability</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>Socially mixed but separated</b> <ul style="list-style-type: none"> <li>- whole neighborhood looks socially mixed, but</li> <li>- separation between different housing types is</li> </ul> </li> <li>• <b>Inconsistency made by zoning variance</b></li> <li>• <b>Discontinuity of neighborhood communities</b></li> <li>• <b>Gentrification Risk</b></li> <li>• <b>Noise issues</b></li> <li>• <b>Disparities in living environment</b> <ul style="list-style-type: none"> <li>- housing quality</li> <li>- safety conditions</li> <li>- sunlight access</li> </ul> </li> </ul>

### Recommendations

- **Reframe the zoning regulations for consistent neighborhoods – flexible zoning?**
- **Improve low-rise neighborhoods' living conditions**
  - subsidize the renovation/remodeling works in low-rise neighborhoods
  - enhance street environment to reduce the separation between apartments and low-rise neighborhoods
- **Mediate gentrification risk by mandating affordable housing units in new developments**
  - require some number or percentage of affordable housing units in newly built apartments; or
  - guarantee some units in new developments for original residents to prevent displacements
- **Promote tourism to boost neighborhood's economy e.g., Tsing Tao City in China**
- **Restrict open time of marketplace to reduce the noise (e.g., close before 9 pm)**



## 5A] APPENDIX - BIBLIOGRAPHY

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