

# Privately Owned Public Space Implementation Characteristics

Doctoral dissertation title **Urbanistic Criteria for Planning Privately Owned Public Spaces**

## 1 INTRODUCTION

Accelerated urbanization processes including private investors' pressure for maximum utilization of land **impact the quality and quantity of public spaces**. The mechanism for raising their share is the procedure of **Privately owned public spaces (POPS)** implementation.

**POPS allows investors to expand their building square footage in proportion to the surface designated for public use.** The process is based on local regulations and not integrated into urban plans whereby implementation guidelines focus mainly on a single plot.

Since the **POPS method has not been thoroughly examined from an urban planning point of view** the broader research looks for the urbanistic criteria that should be integrated into the POPS systematic planning process to improve the urban quality of the wider urban context.

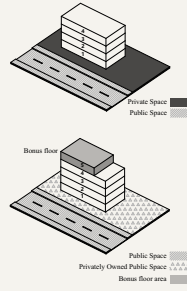


Figure 1. A simulation scheme of the urban building before and after the application of POPS process. (Source: Author)

## 3 CASE STUDY

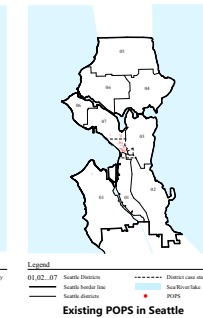
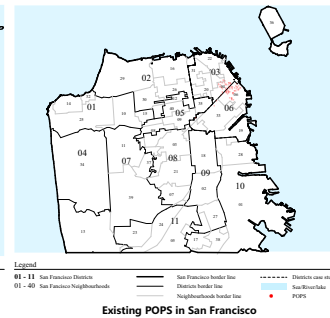
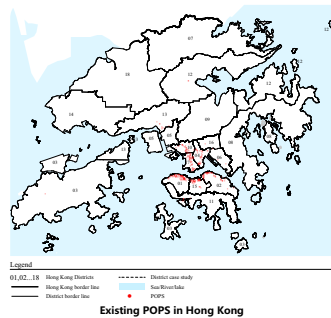
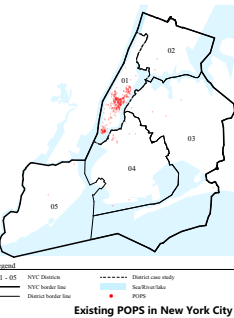


Figure 3.1-3.5 - Position of implemented POPS compared to city and district level in New York City, Hong Kong, San Francisco and Seattle. (Source: Author)

## 2 RESEARCH QUESTIONS / AIMS

### RESEARCH QUESTIONS

RQ1: Which **cities** in the world have implemented the **largest number of POPS**?

RQ2: What are the common **characteristics of POPS distribution** within the city?

RQ3: What are the urban characteristics of **areas with the highest density POPS realization**?

### AIMS

A1: To identify the **urban characteristics common for high-density POPS implementation areas**.

A2: To determine **urban factors that contribute to the POPS development** in cities.

Some of the cities in the world that implement the process of creating public spaces in private lands



Figure 3. Analyzed cities that implement the process of creating POPS. (Source: Author)

City/State which implement the process of creating public space in private land	Implemented POPS	Open source database	Digital map of POPS
Tokyo (Japan)	697	-	+/
Yokohama (Japan)	524	-	-
New York City (USA)	302	-	-
Hong Kong (China)	136	-	+
Toronto (USA)	139	-	-
San Francisco (USA)	79	-	-
London (United Kingdom)	57	-	-
Seattle (USA)	44	-	-
Boston (USA)	22	-	+/
Osaka (Japan)	-	-	-
Bangkok (Thailand)	-	-	-
Aachen (Germany)	-	-	-
Sao Paulo (Brazil)	-	-	-

Table 1 - Comparison of cities which implement the process of creating public space in private lands

- Criteria for selecting case studies
1. Cities with the largest number of implemented POPS
  2. Cities with available open source POPS database (informative and digital maps)
  3. Cities covered by scientific and professional research on POPS

Selected cities as case study	New York City (USA)	Hong Kong (China)	San Francisco (USA)	Seattle (USA)
City Area	830 km <sup>2</sup>	1108 km <sup>2</sup>	121 km <sup>2</sup>	275 km <sup>2</sup>
Population	8,304,190	7,498,100	725,000	395,123
Total number of POPS	302	136	79	44
District with highest number of POPS	Manhattan	Hong Kong Island	Districts	Downtown
Area of district with highest number of POPS	56.68 km <sup>2</sup>	78.59 km <sup>2</sup>	01 & 06	5.6 km <sup>2</sup>
Share of POPS in the district	366 (93%)	188 (56%)	79 (100%)	38 (86%)

Table 2 - Comparison of area, population and implemented POPS of selected cities as case study

## 4 RESEARCH METHODOLOGY / SOURCES

**Comparative analysis of 4 cities** with the highest number of POPS realization in the world and with accessible comprehensive POPS open databases: New York, Hong Kong, San Francisco

Two types of urban characteristics analysis: **graphic** (urbanistic) and **quantitative** (statistic spatial data) **comparative analysis**

**Analysis criteria** - spatial and demographic **urban characteristics** in relation to city areas with the highest POPS density

**Two-level comparative analysis: city level (scale), district level (scale)**

A district-level graphic analysis is based on the **modular network** (1 km x 1 km grid) introduced for POPS share/density quantification in accordance with other urban characteristics

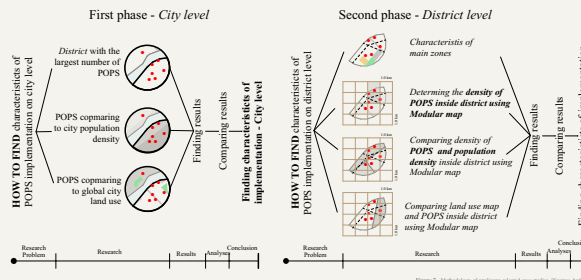


Figure 7. Methodology of analyzing selected case studies. (Source: Author)

City-level analysis criteria	District-level analysis criteria
City's administrative division (POPS distribution)	POPS density diversification (km <sup>2</sup> grid)
Centrality (relation to the city centre and/or business/commercial districts)	Prominent urban landmarks vicinity
Overall population density	Local population density
Land Use	Basic land use division (residential or commercial areas)
Dominant morphological characteristics	Main green areas and public spaces vicinity
	Building characteristics: density, typology, skyline height
	Main avenues vicinity

Table 3 - Comparison of analysis criteria, urban factors (characteristics) related to urban areas with the highest POPS density

Sources:

1. Digital maps of all implemented POPS available from an open-source city database;
2. Maps of administrative city borders (districts);
3. Population density maps;
4. Land use plans;
5. Legislation documents;
6. Scientific research.

## 5a COMPARATIVE ANALYSIS - CITY LEVEL

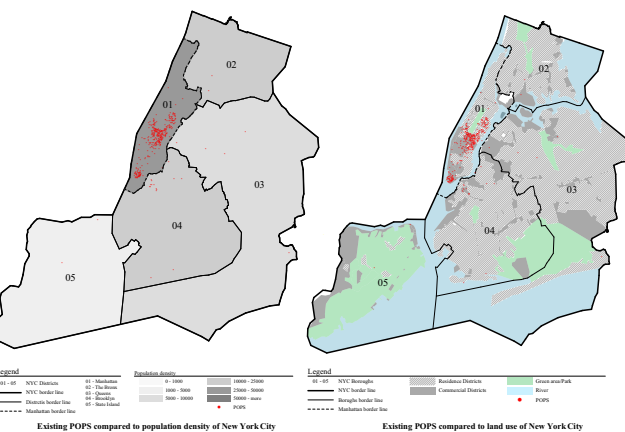


Figure 8.1-8.5 - Comparison of POPS density and land use of New York City. (Source: Author)

## 5b COMPARATIVE ANALYSIS - DISTRICT LEVEL



Figure 8.1-8.5 - Comparison of POPS density and land use of New York City. (Source: Author)

## 6 RESULTS

From the comparative analysis of four prominent cities, it is concluded that POPS are predominantly **situated in urban areas and concentrated in the planned central urban districts** (main districts) with **recognizable urban identities**. Their development is concentrated in the **most densely populated - dominantly business and commercial city districts** (Downtown). The development of POPS can only be partially linked to the oldest historical districts.

The densest POPS areas (district part) **coincide with high-rise high-density urban morphology** and are **located in close proximity to landmark** (public) buildings that define a neighbourhood's unique identity. Also, POPS are commonly situated adjacent to well-known public spaces, along the waterfronts and by the main city avenues.

URBAN CHARACTERISTICS INDICATIVE FOR HIGH DENSITY POPS IMPLEMENTATION AREAS				
City Level	What are the characteristics of the POPS densest city districts? In what district are the POPS mostly implemented?	New York	Hong Kong	San Francisco
	Concordance/matching of urban characteristics with the density of realized POPS	+	+	+
District Level	What are the characteristics of parts of a district where the highest density of POPS is realized? Where are the most dense POPS areas located within the district?	Manhattan	Hong Kong Island	Districts 01 & 06
	Concordance/matching of urban characteristics with the density of realized POPS	+	+	+
City Level	Central urban district	+	+	+
	Recognizable urban identity	+	+	+
	Planned city district	+	+	+
	Dominantly Business district (Downtown)	+	+	+
	Dominantly commercial area	+	+	+
	Most dense population district of City	+	+	+
	Historical (the oldest) district	+/	-	-
	Biggest district/region of City	+/	-	-
	Dominantly residential district	+/	+/	-
	Most populated district of City	-	-	+/
District Level	In the areas with dominant high-rise density urban morphology (skyscrapers)	+	+	+
	In the vicinity of main (biggest) public square	+	+	+
	At the city waterfront - near sea or river	+/	+	+
	By the main city avenue (arterial main road)	+/	+	+/
	In the vicinity of significant buildings (landmarks, iconic buildings)	+	+	+/
	In the vicinity of main (biggest) park of city	+/	+/	-
	In the high population density area	+/	+/	-
	In the historical core	+/	-	-
	In the vicinity of main (biggest) public square	+	+	+
	At the city waterfront - near sea or river	+/	+	+/

Table 4 - Results after analyzing urban characteristics of the distribution of density POPS within the city and district levels

## 7 CONCLUSION

Determined urban characteristics indicative for high-density POPS implementation areas confirm that **POPS could be associated with the urbanity, centrality, and identity of a city**. Identified urban factors that affect the POPS development are contributions to previous research as well as to the implementation practices and will be crucial in the following investigation in determining the urbanistic criteria of POPS incorporation in urban planning.