

TU Delft  
Faculty of Architecture  
Department of Urbanism  
Metropolitan Spatial Structure  
**Yu-Li Chen**  
P5 presentation

First Mentor: Lei Qu  
Second Mentor: Birgit Hausleitner  
External Examiner: Frank Koopman

# ReMIXED USE

Advancing Urban Regeneration of the Resettled Tenements by  
Promoting Evolved Planning System and Urban Form in Taipei



image source: [forum.gamer.com.tw/C.php?bsn=11800&snA=16321](http://forum.gamer.com.tw/C.php?bsn=11800&snA=16321)

**CONTEXT**

RESEARCH  
FRAMEWORK

STRATEGY  
& DESIGN

PROBLEM  
STATEMENT

ANALYSIS

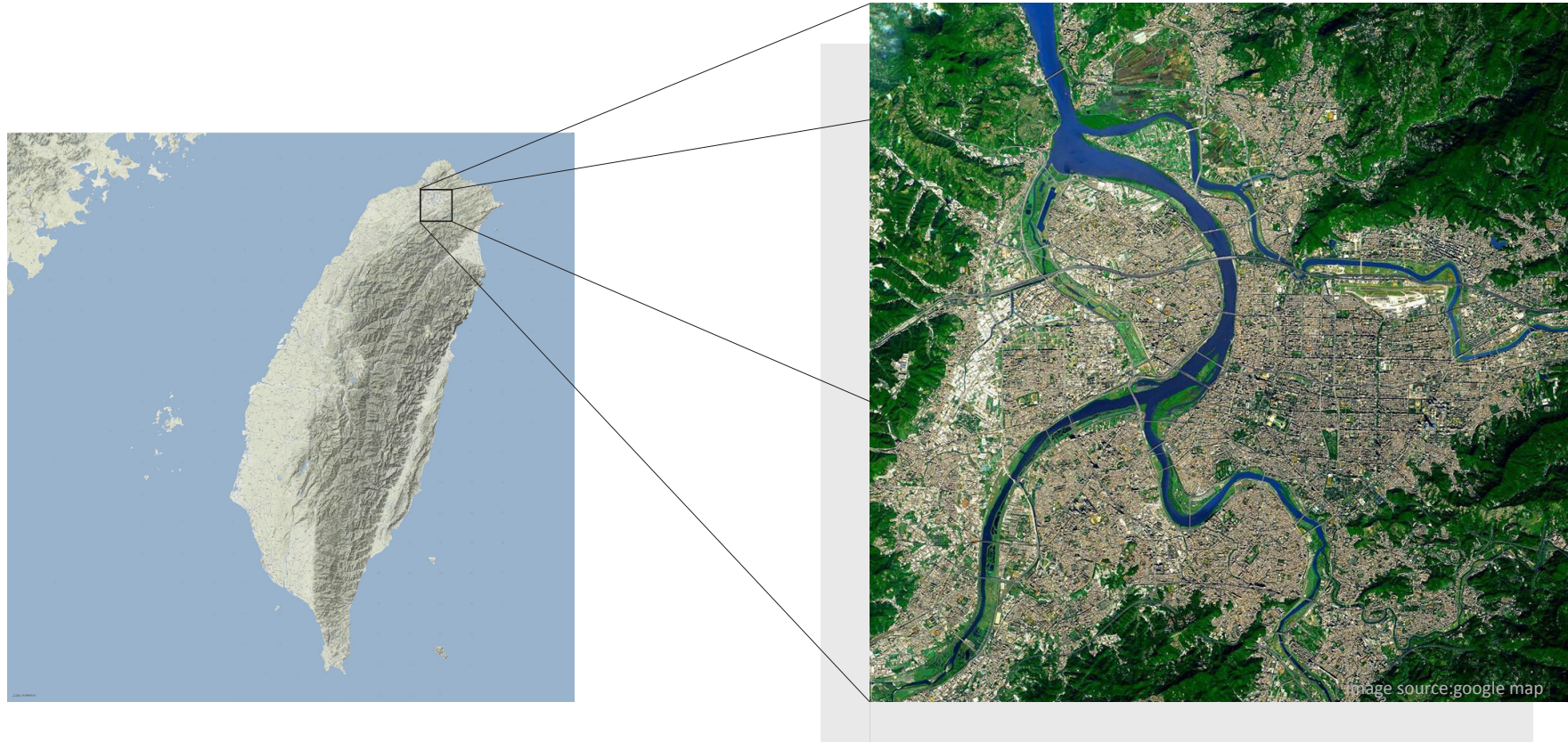
CONCLUSION

租售

現代地產 房屋·土地  
軍宅·國宅·租售服務  
(銀行信託履約保證·交易零風險)  
熱線 0911-216-797 洽



訂購專線  
0939-539672  
金幸福國際開發有限公司



**Taipei in the northern region of Taiwan**



1940



1940



1960



2012

Image source: [www.travelog.me/articles/Taipei-Past-and-Present-See-How-Much-the-City-Has-Changed-Via-Real](http://www.travelog.me/articles/Taipei-Past-and-Present-See-How-Much-the-City-Has-Changed-Via-Real)

**The characteristics of urban form**  
established during Japanese control in 1895-1945



## The characteristics of urban form

(Wang, 1996)

1. Clear relationship between uses, buildings heights and locations



2. Linear and vital street activities



3. Strong spatial relationship between buildings and streets

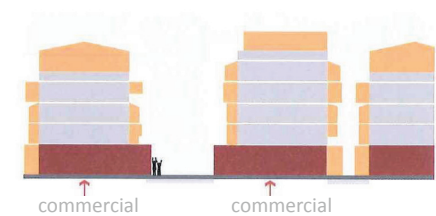
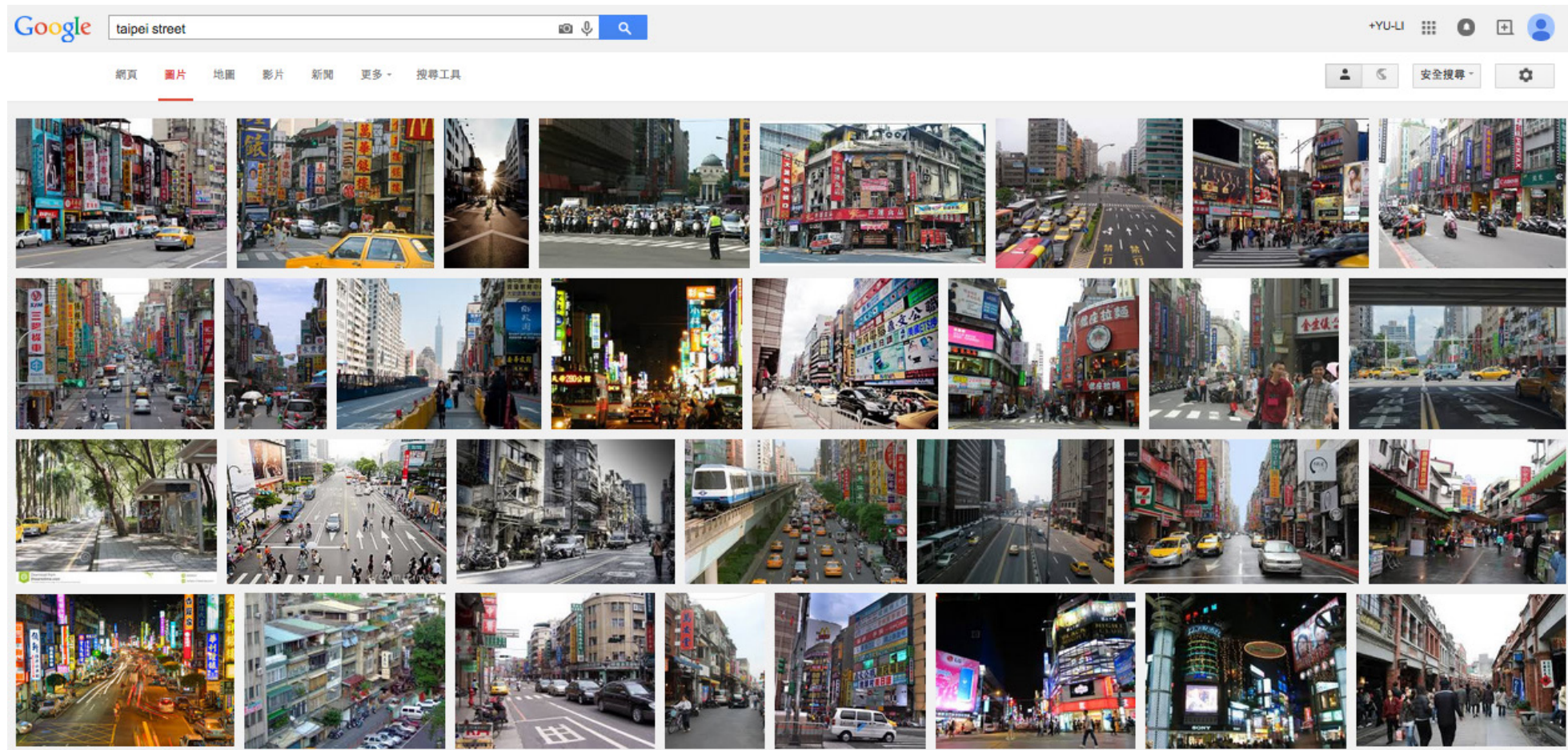


Image source: Taipei Unveiled (Garden City, 2013)



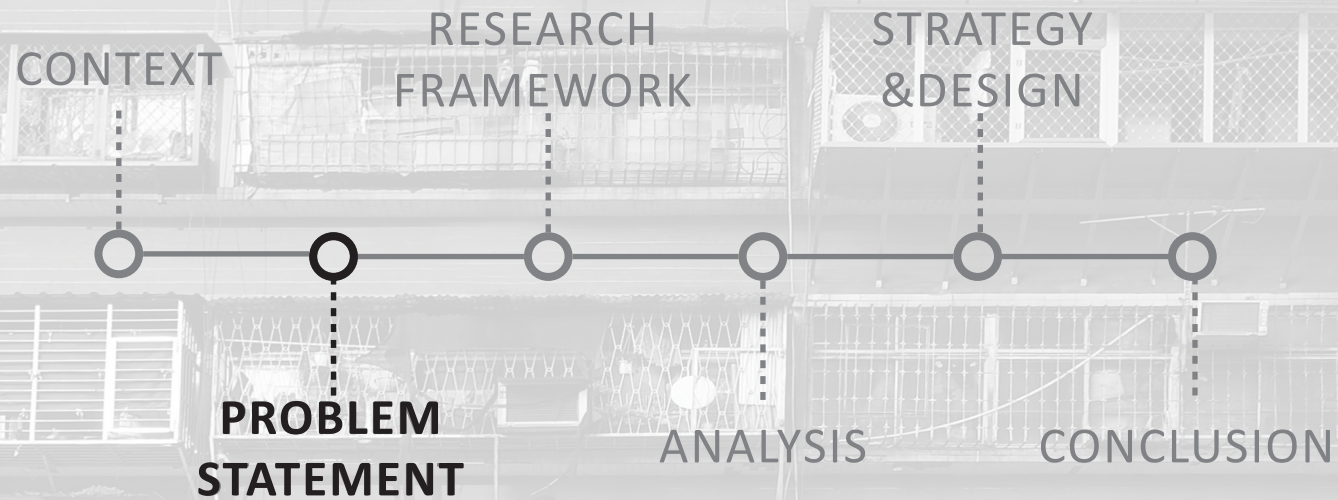
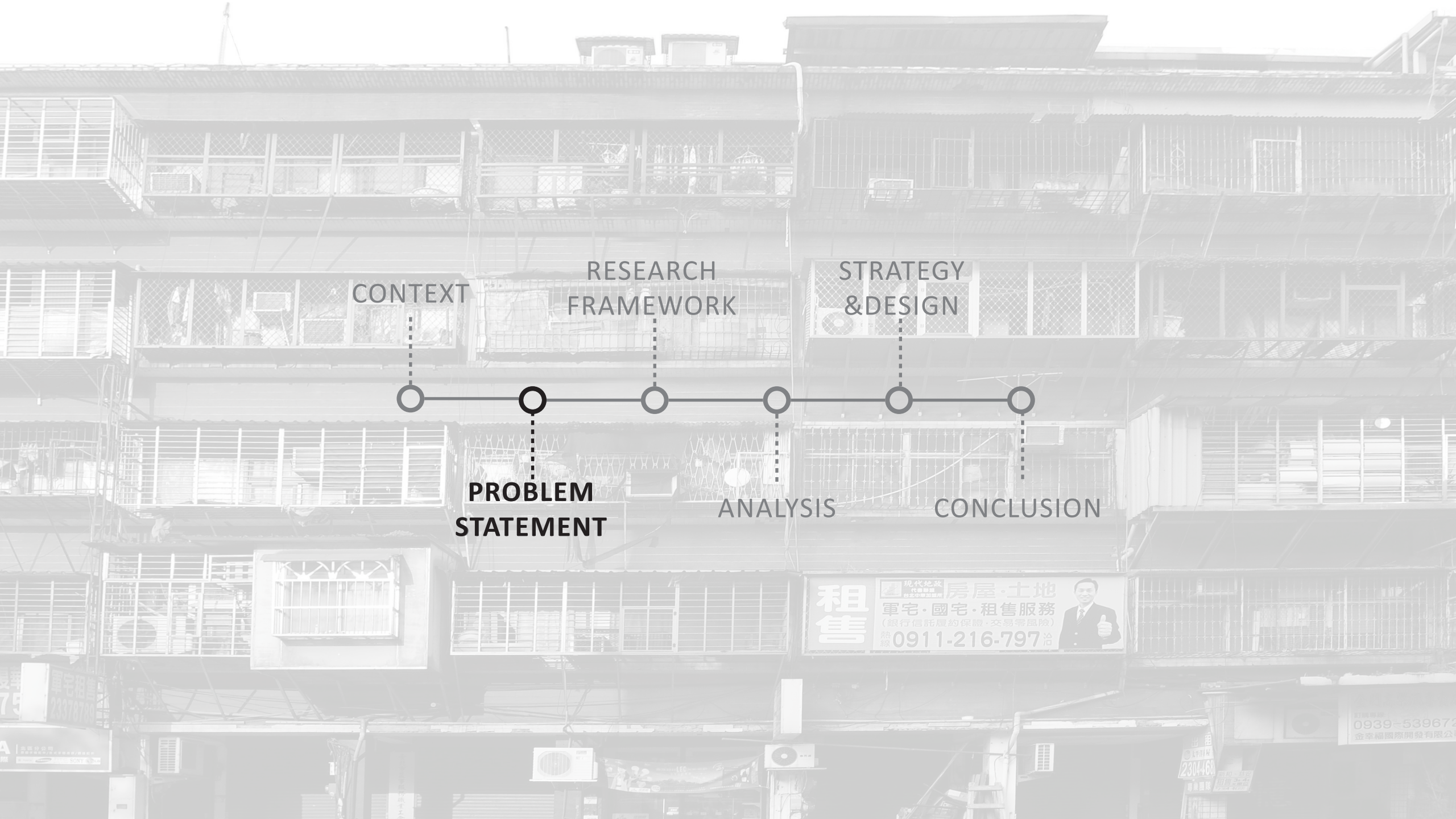
## Taipei urban life

Extra-ordinary? Extraordinary!



## Motivation

The Urban Renewal Act annouced in 1998  
Figuring out the effects on urban life

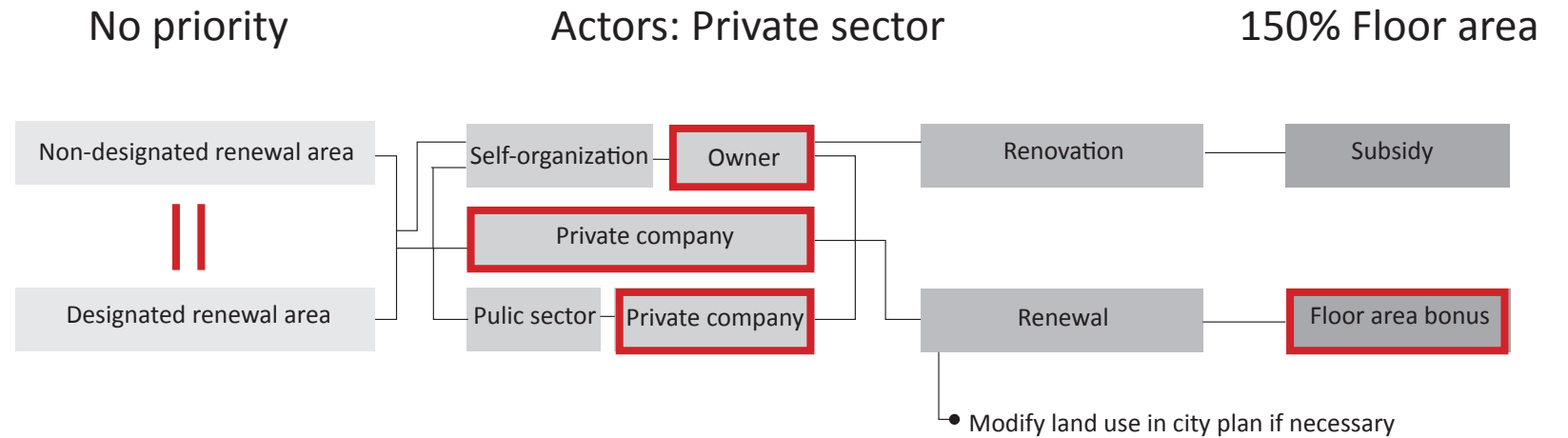


**租售**

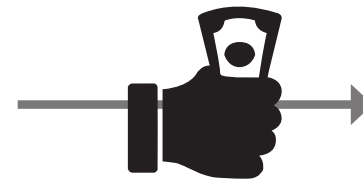
現代地產 房屋·土地  
軍宅·國宅·租售服務  
(銀行信託履約保證·交易零風險)  
熱線 0911-216-797 洽



訂購專線  
0939-539672  
金幸福國際開發有限公司

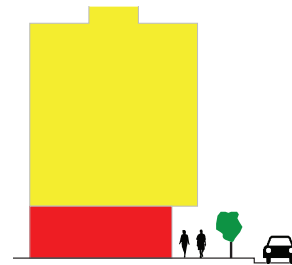
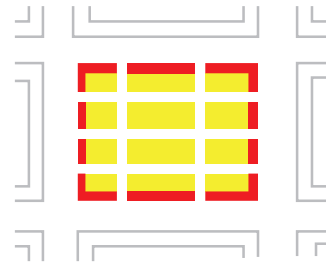


As a result...

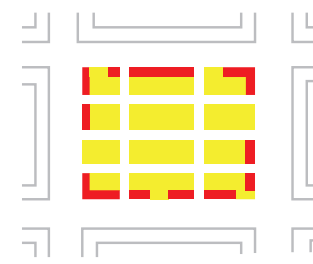


**Notorious planning system for urban regeneration**

Residential + commercial function



Residential function



Changing urban form



**Resettled tenements**  
as the deprived communities

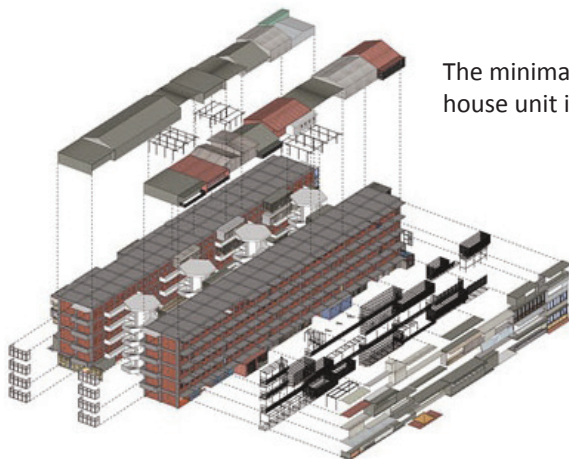


## 24 places were built in 1960s for huge immigrants

Political immigrants > Blue-collar workers

> Immigrant from other Taiwanese cities > vulnerable group

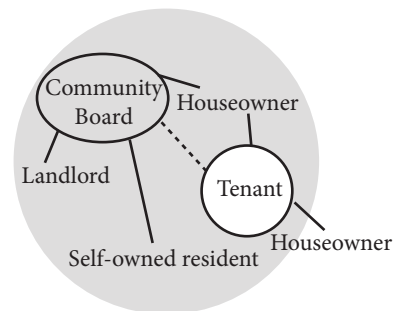
## Informal expansion on living space



The minimal area for one house unit is 26 m2.

source: [www.szdesigncenter.org/?p=1445](http://www.szdesigncenter.org/?p=1445)

## Complex social structure/ ownership



Source: The organization of Urban Re-s

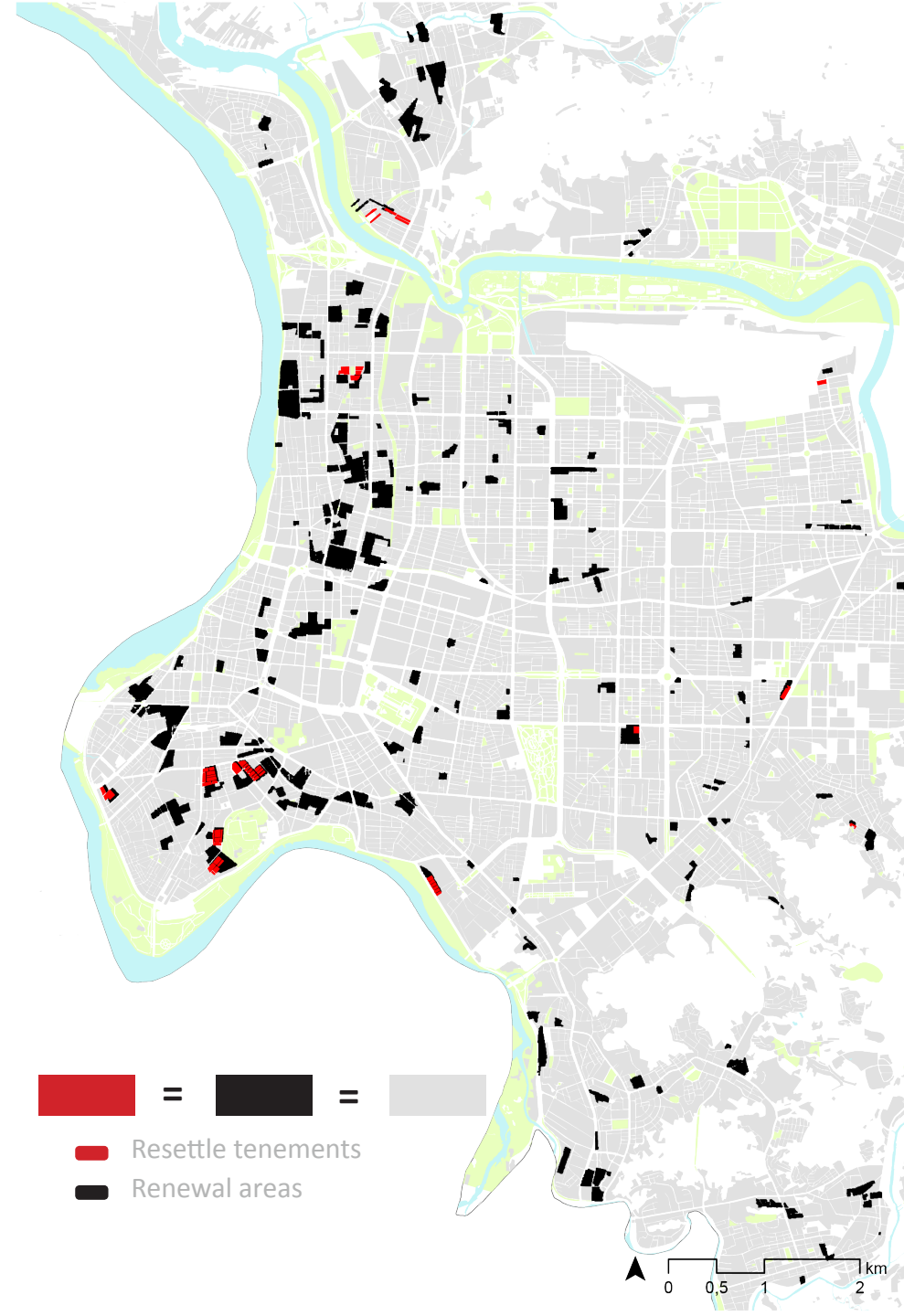
## Higher ratio of vulnerable group

	Household	Rental ratio	Ratio of vulnerable group
Taiwan	7,378,039	10.9%	Lack of info
Taipei	943,310	13%	4.3%
Resettled tenements	11,105	40~60%	16.06%

Source: The organization of Urban Re-s

## Challenges for urban regeneration

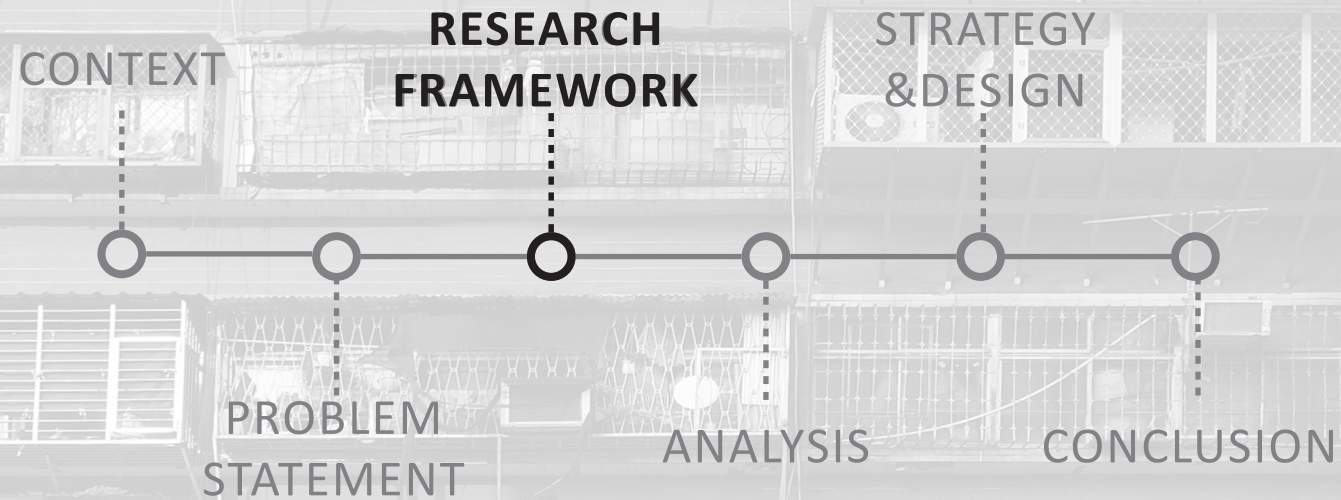
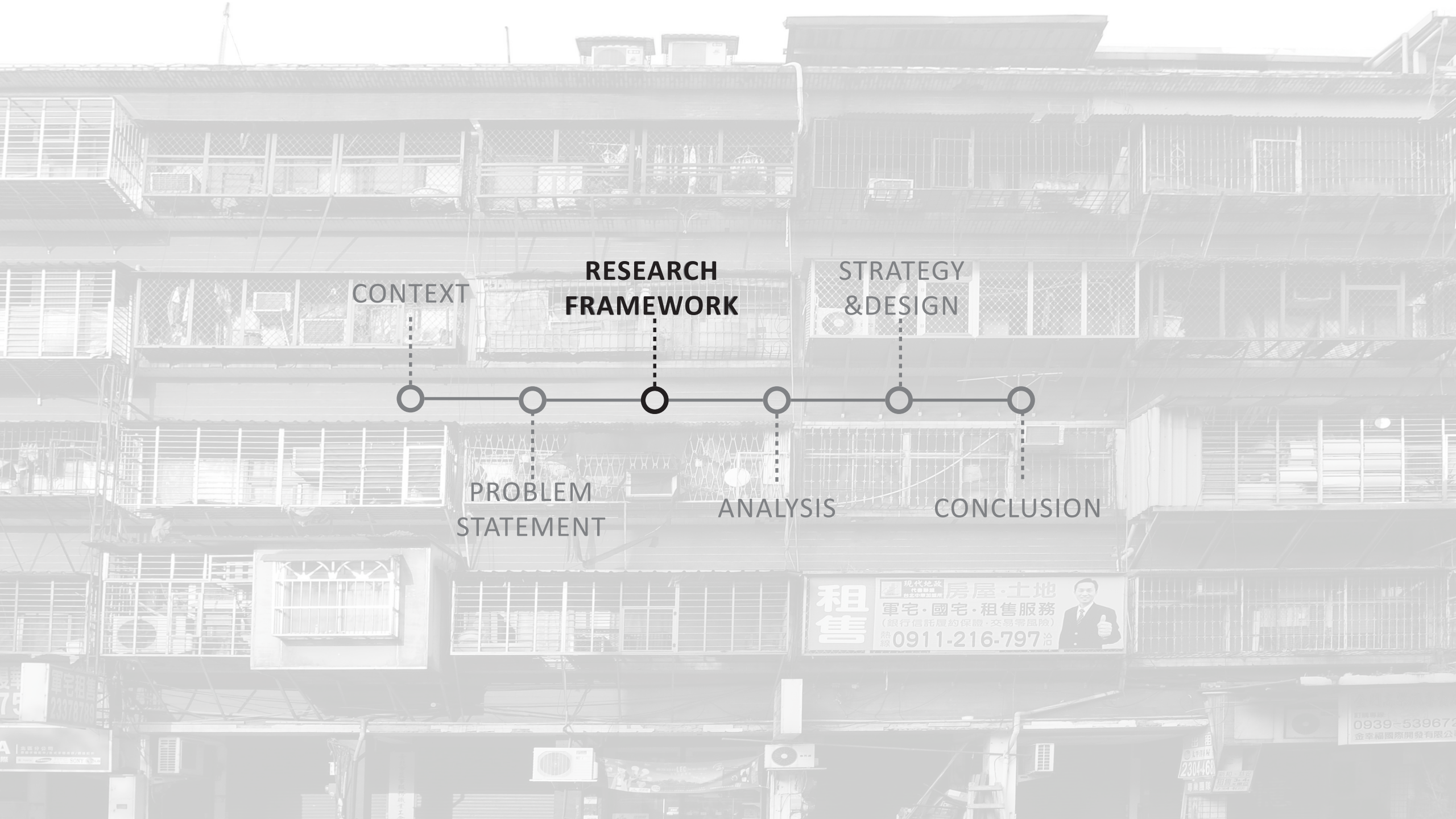
No rational priorities in renewal plan





## Problem Statement

Existing regeneration planning system is not helping those deprived communities, and is not contributing to vibrant urban life corresponded to Taipei.



**租售** 現代地產 房屋·土地  
軍宅·國宅·租售服務  
(銀行信託履約保證·交易零風險)  
熱線 0911-216-797 洽

A small portrait of a man in a suit, giving a thumbs up, is located to the right of the text.

訂購專線  
0939-539672  
金幸福國際開發有限公司

Taking **resettled tenements** as the crucial point

- To explore **vital urban form** in Taipei
- To review the existing **regeneration process**

**Project aim**



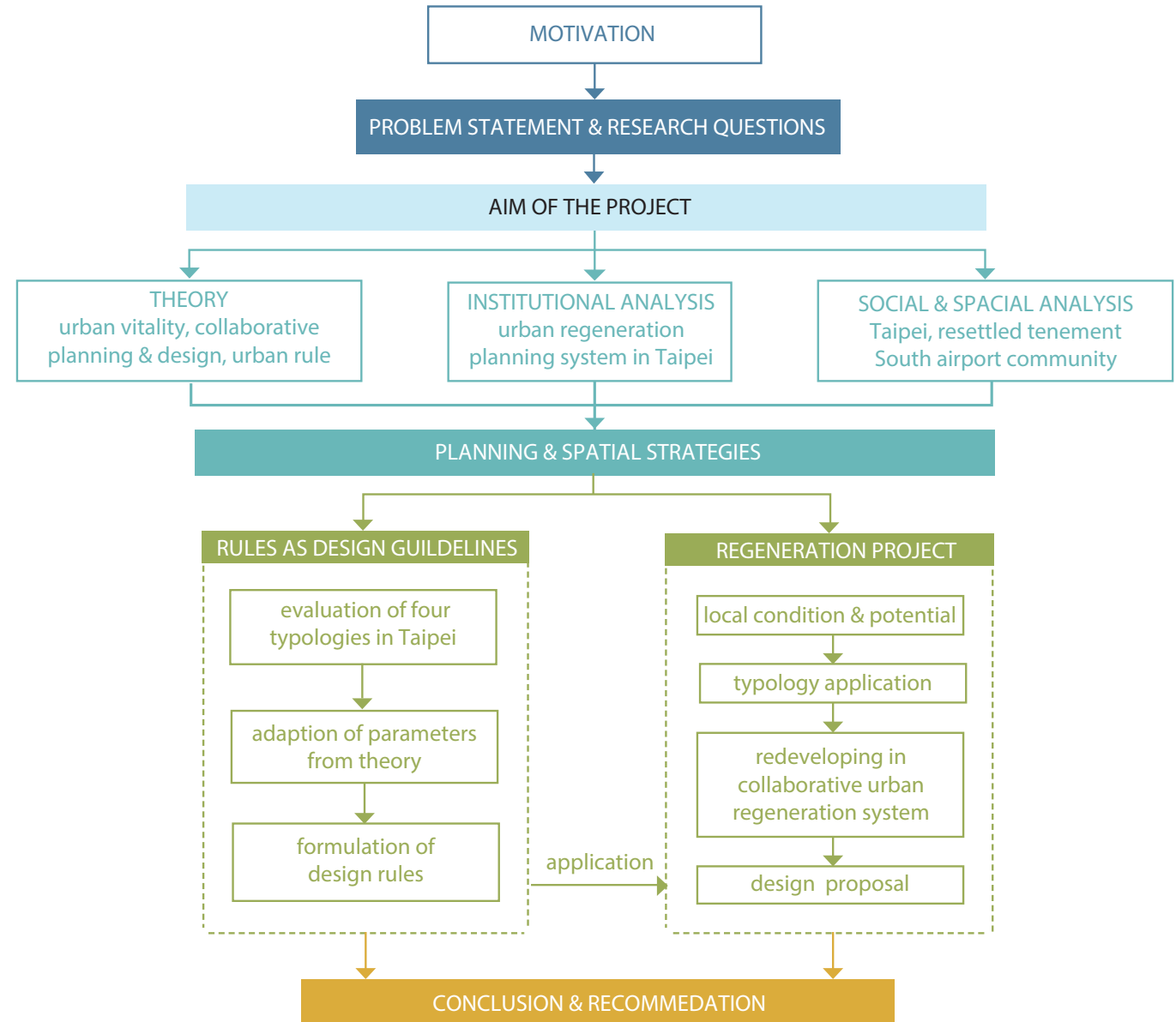
?

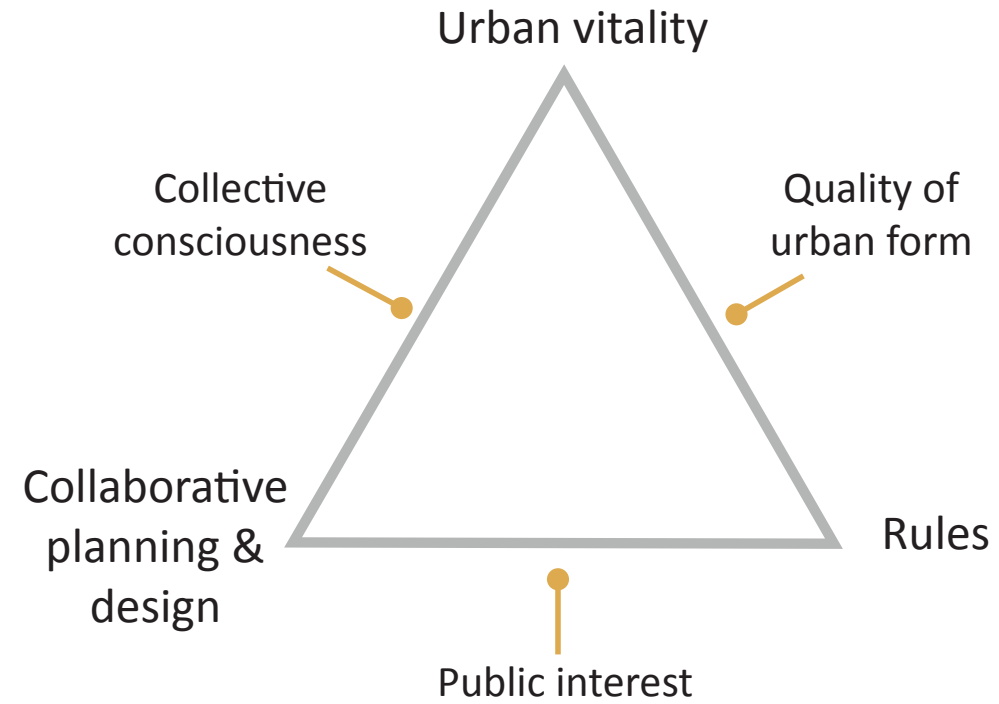


## Research Question

1. How to generate urban vitality?
2. How to redefine urban vitality in Taipei?
3. How to integrate the urban form within urban regeneration process in Taipei?

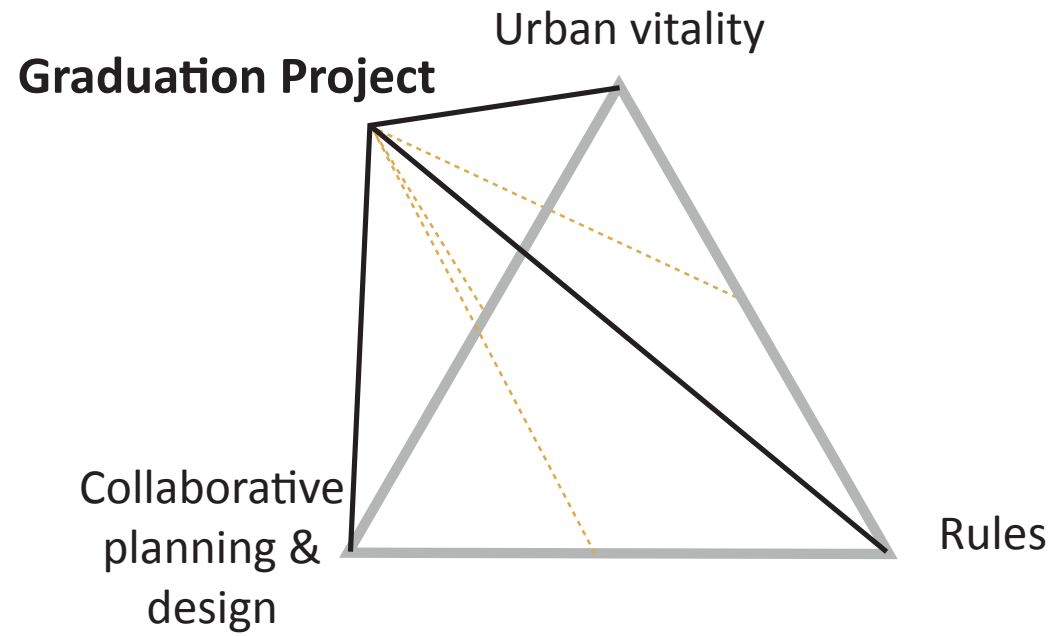
# Methodology





## Theoretical study

The relations between the three theories



## Position of the graduation project

To integrate the three elements to produce desirable spatial outcomes

CONTEXT

RESEARCH  
FRAMEWORK

STRATEGY  
& DESIGN

PROBLEM  
STATEMENT

ANALYSIS

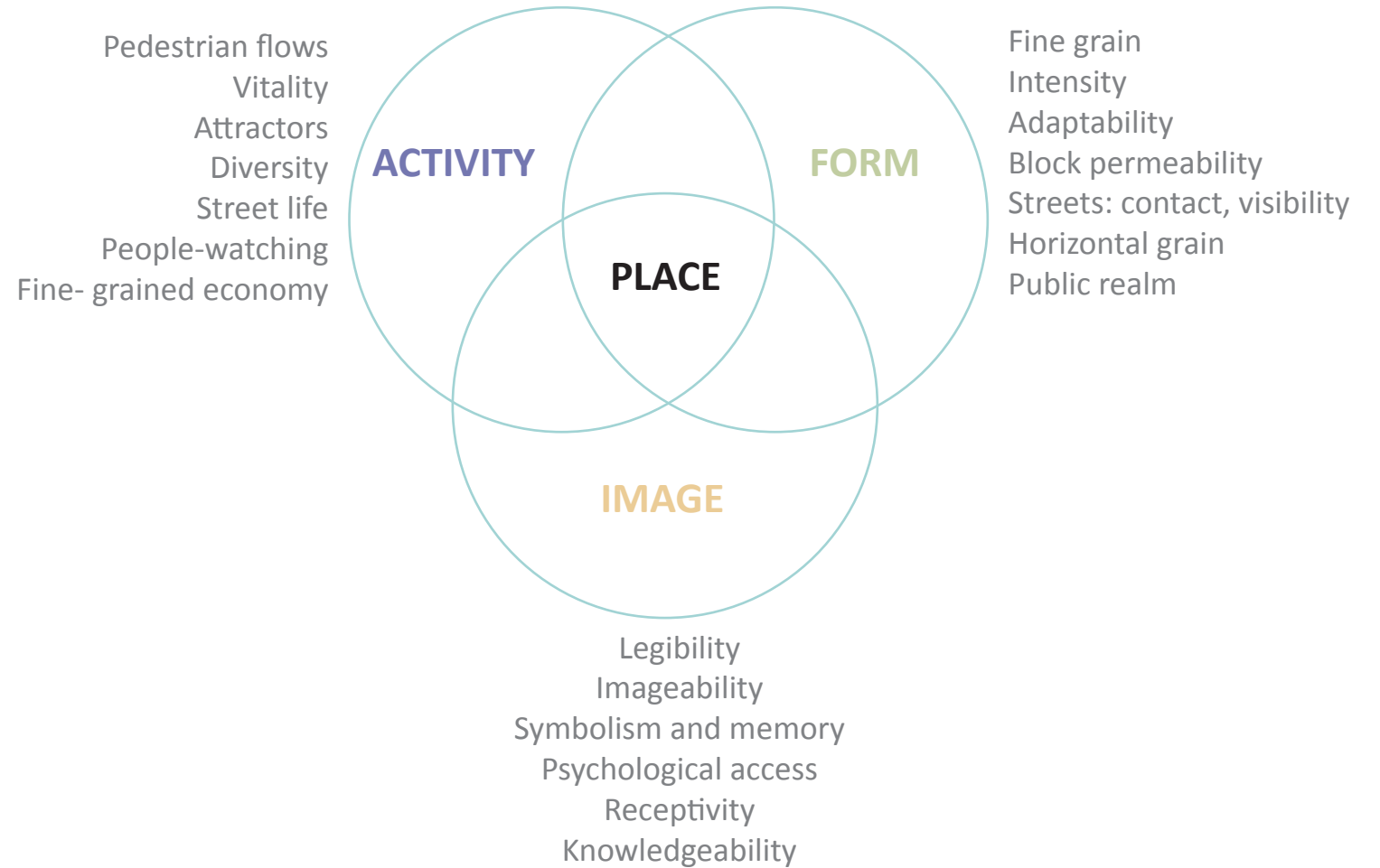
CONCLUSION

租售

現代地產 房屋·土地  
軍宅·國宅·租售服務  
(銀行信託履約保證·交易零風險)  
熱線 0911-216-797 洽



訂購專線  
0939-539672  
金幸福國際開發有限公司

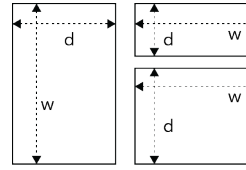


## 1. How to generate urban vitality?

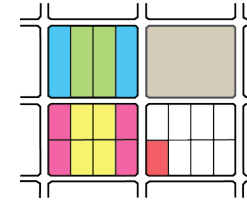
Vital place making factors for the project, based on Montgomery (1998).

# 1. How to generate urban vitality?

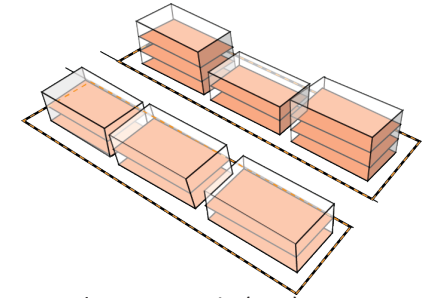
Key physical indicators from theoretical study



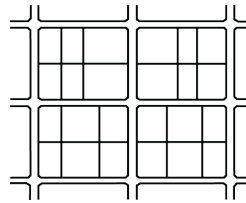
Block proportion



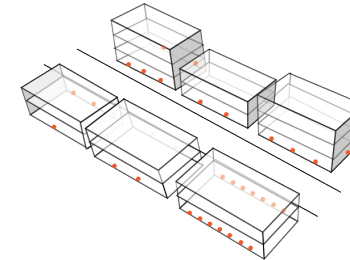
Plot types



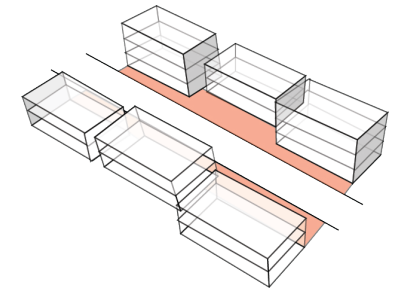
Floor area ratio (FAR)



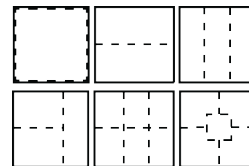
Variety of plot size



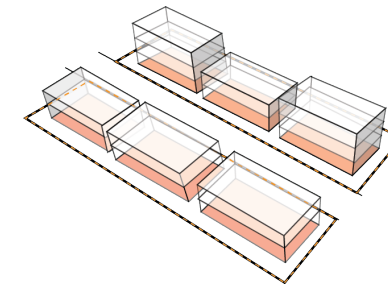
Building's entrances.



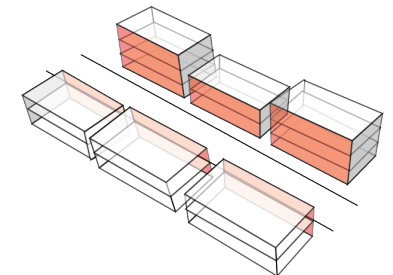
Frontality



Plot division

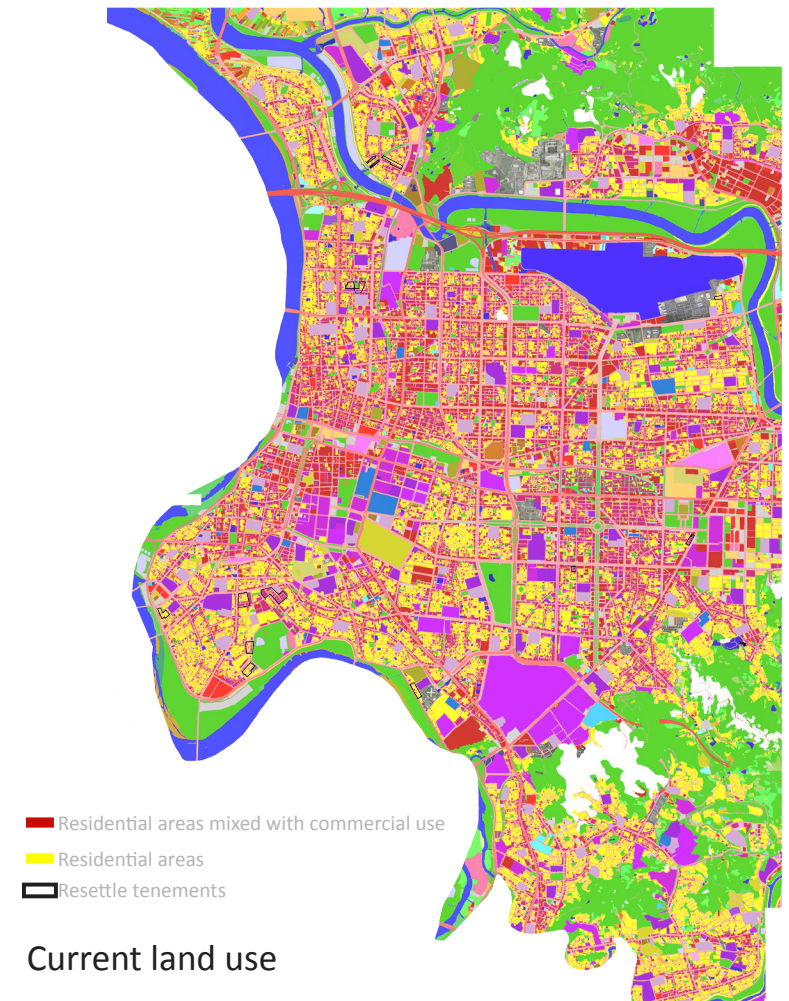
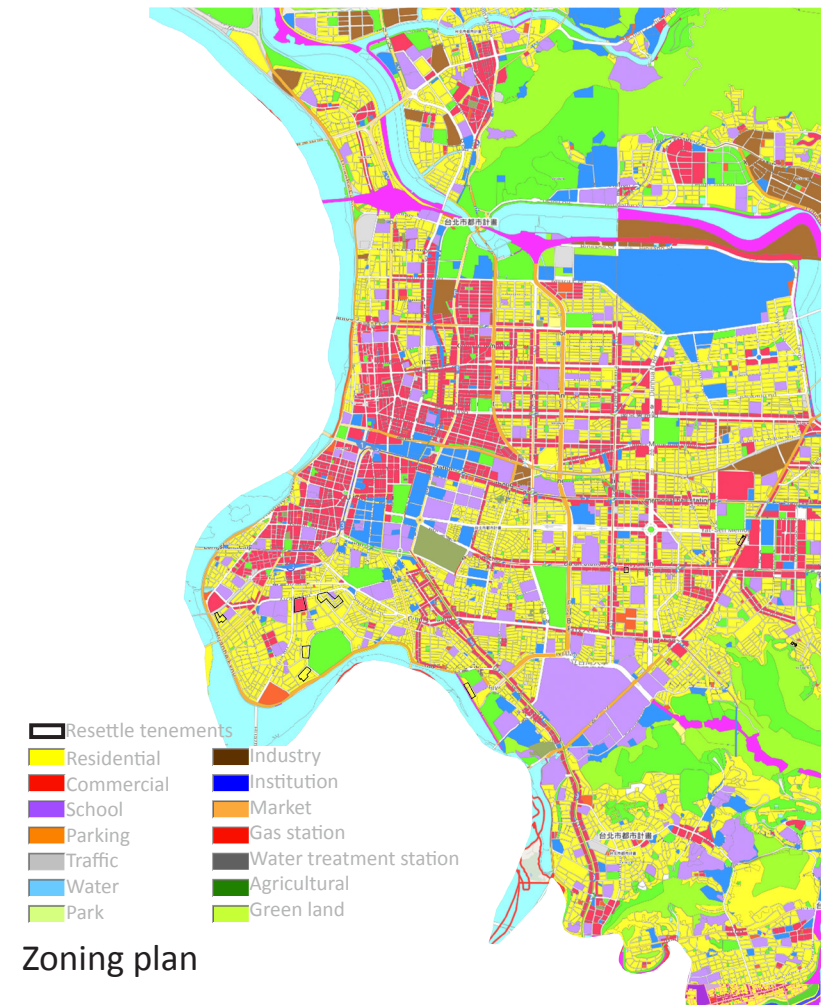


Ground coverage



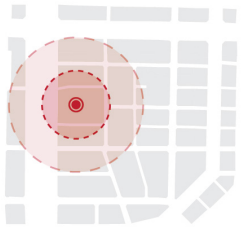
Confrontation

Rules provide a common basis of coordination, and its characteristics of rules are ubiquitous, making control adjustable, and stay operational. (Lehnerer, 2009)

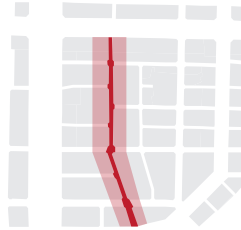


## Current control mechanism can't represent the reality

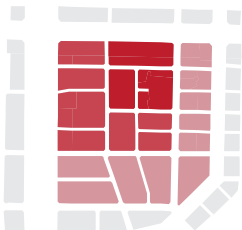
- Tolerant use group in the subdivision of zoning plan
- Organic urban transformation



Radiant commerce



Linear temporary market



Commerce in neighborhoods

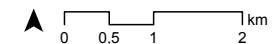
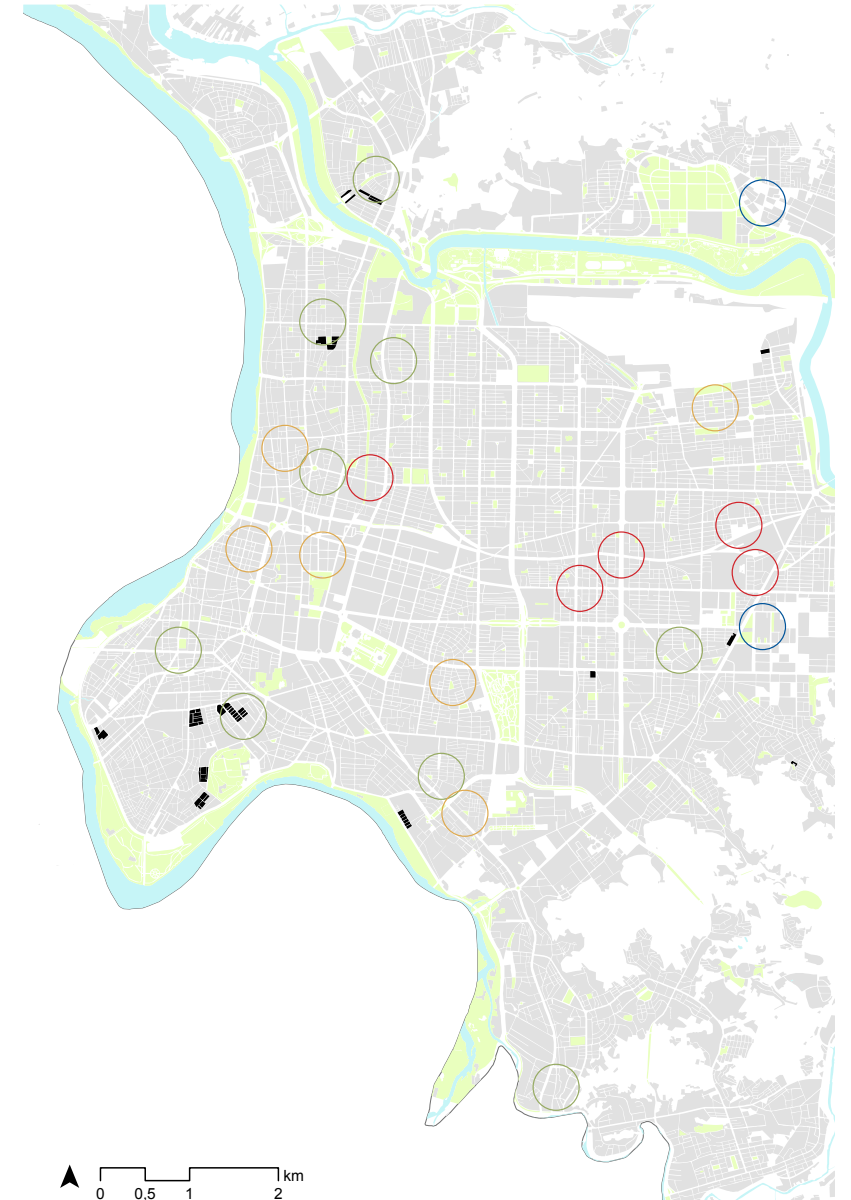


Separation of commerce and residence



## 2. How to redefine urban vitality in Taipei?

To find out the mixed-use typologies

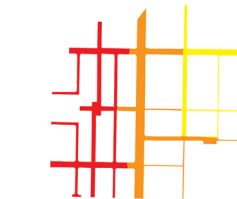
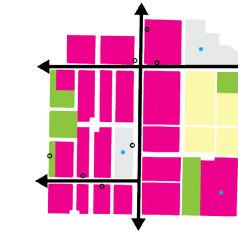
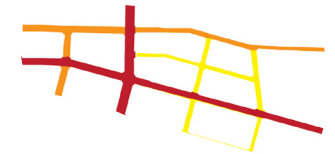
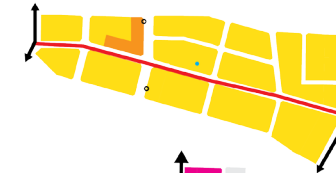
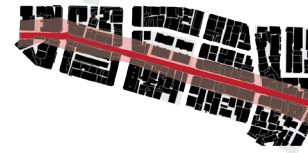
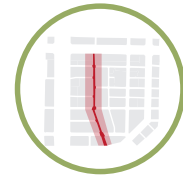
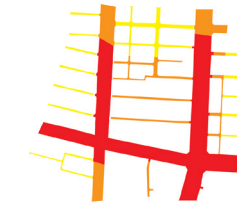
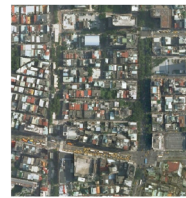
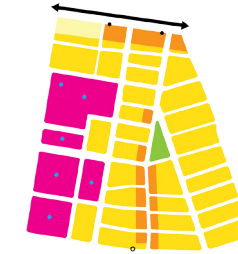


Example

Urban fabric

Building types & surroundings

Urban vitality



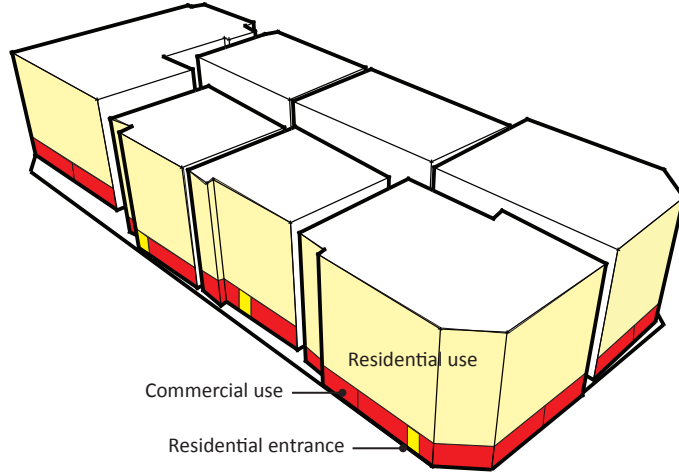
- Public facility
- Metro station
- Bus stop
- ↔ Main road
- Public space
- Single building
- Business building
- Shophouse
- Apartment
- High-floor (>12) apartment

- High
- Medium
- Low

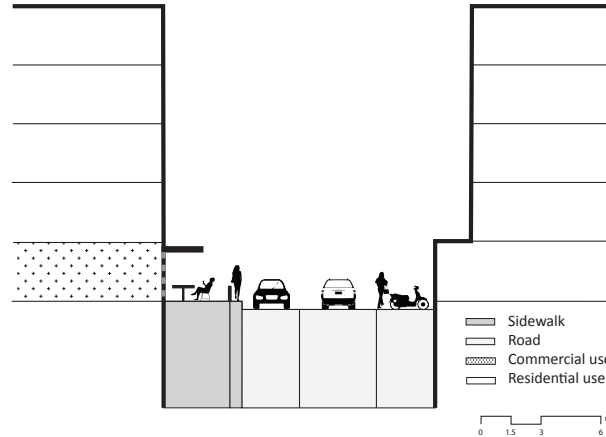
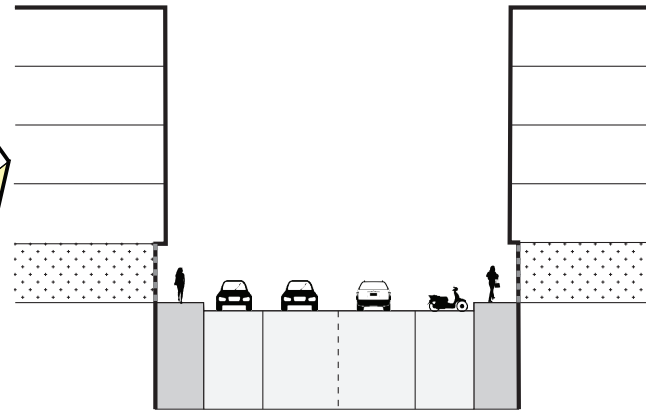
## 2. How to redefine urban vitality in Taipei?

To analyze the mixed-use typologies

## Block typology



## Street profile



## Program-User



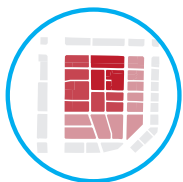
Middle/ low income inhabitants

Residential unit



Small business

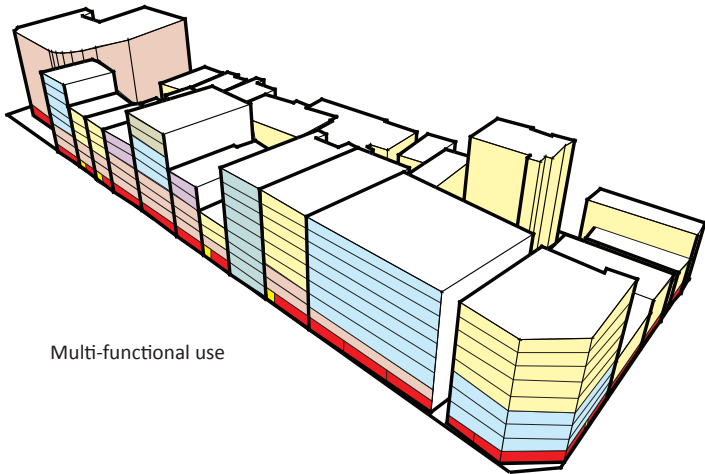
Designers  
Mechanic  
Self-employed people  
Customer service people  
Local visitor



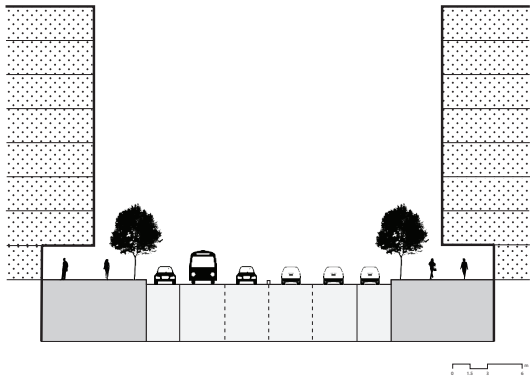
# Commerce in neighborhoods

Characteristics of the typology

Block typology






Street profile



- Sidewalk
- Road
- Multiple commercial use
- Residential use

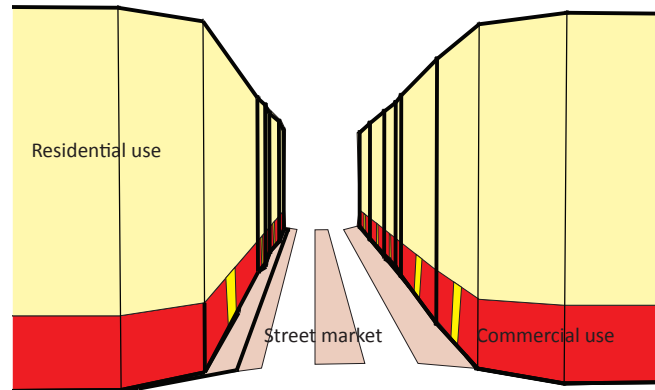
Program-User

-  Middle income inhabitants  
Residential unit
-  White-collar people  
Office
-  Customer service people  
District-wide/ city-wide visitors  
Large business

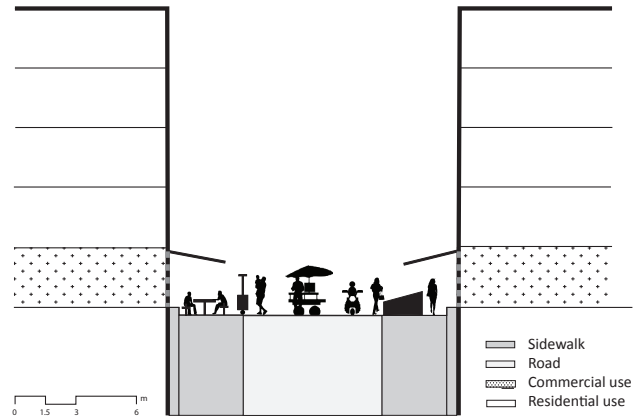


**Radiant commerce**  
Characteristics of the typology

## Block typology



## Street profile



## Program-user



Middle/ low income inhabitants

## Residential unit



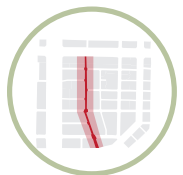
Mechanic  
Self-employed people  
Customer service people  
Local visitors

## Small business



Vendor  
Local/ district-wide visitors

## Market

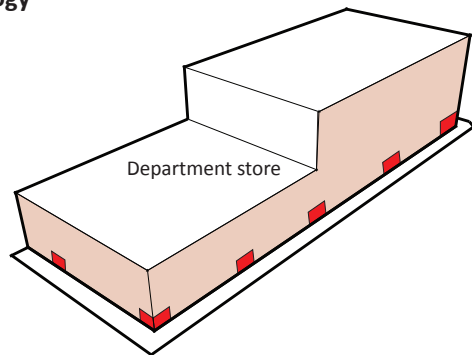


# Linear temporary market

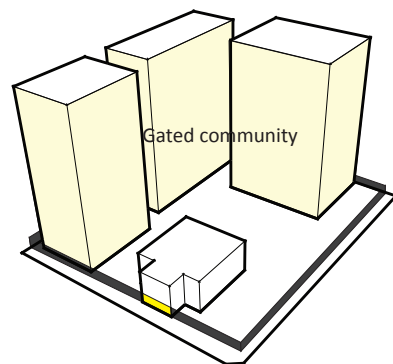
Characteristics of the typology

## Block typology

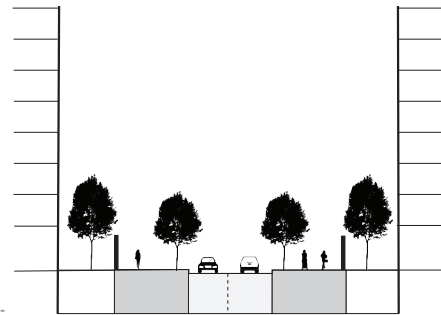
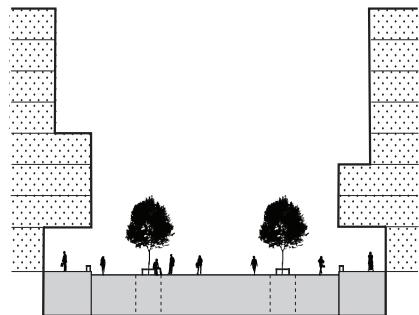
Commercial area



Residential area



## Street profile



— Sidewalk  
 — Road  
 — Commercial use  
 — Residential use

## Program-User



Office

White-collar workers



Large business

Customer service people  
City-wide visitors



Residential unit

High income inhabitants



# Separation of commerce and residence

Characteristics of the typology

### 3. How to integrate the urban form within urban regeneration process in Taipei?



Necessary shift

Rational-comprehensive  
Central control  
Blueprint  
↓  
Strategic  
Flexible  
Collaborative

Involvement

8	Citizen control	Citizen Power	Voice
7	Delegated power		
6	Partnership		
5	Cooperation	Tokenism	Choice
4	Consideration		
3	Informing		
2	Neglect	Non participation	
1	Denial		

Adaptive ladder of citizen participation. Source: Qu & Hasselaar, 2011.

Implication

Actor-oriented

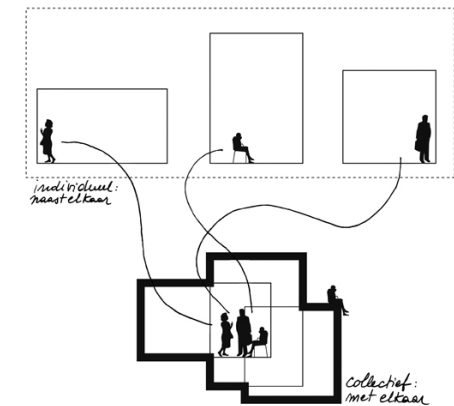
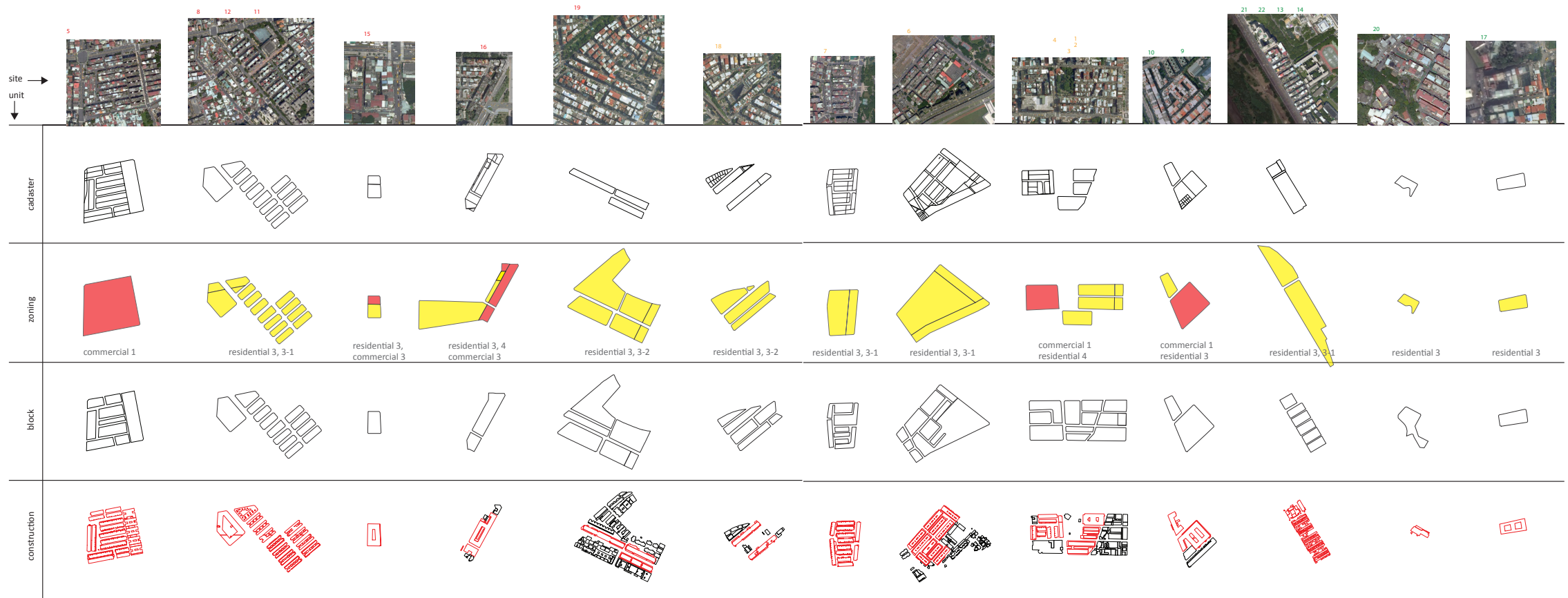
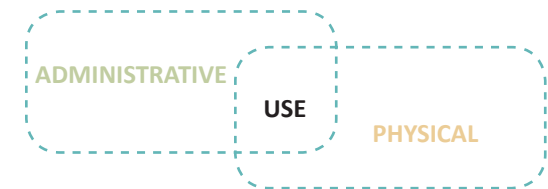


image source: [thespontaneouscityinternational.org/manifesto/](https://thespontaneouscityinternational.org/manifesto/)

**Collaborative planning & design**

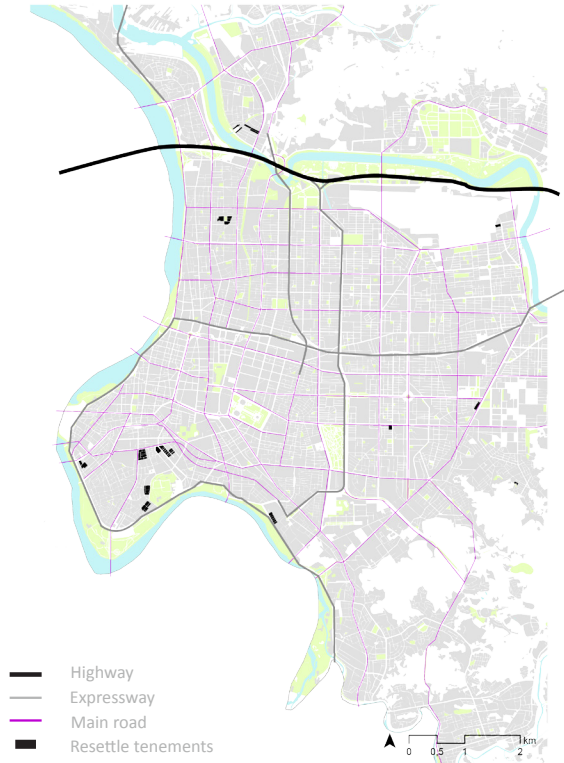


# Unit organization among the resettled tenements



The complexity of a basic unit. (Hausleitner, Nycolaas, 2014)

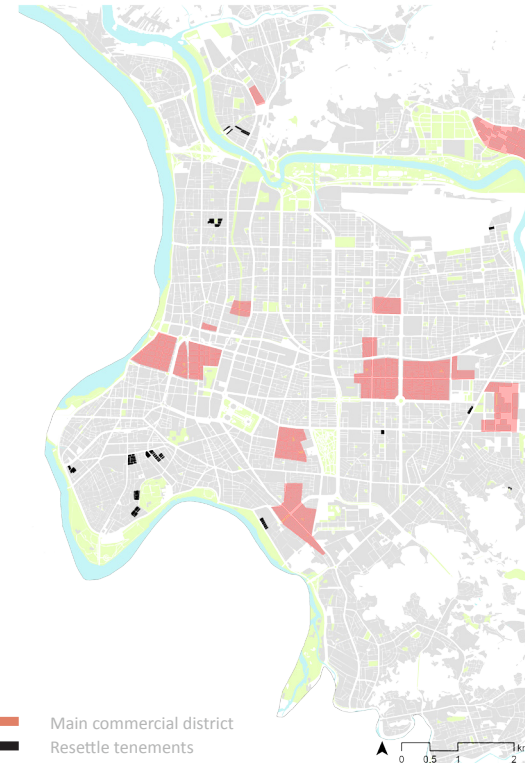
Infrastructure network



Public transport



Main commercial districts



Important sites and axis

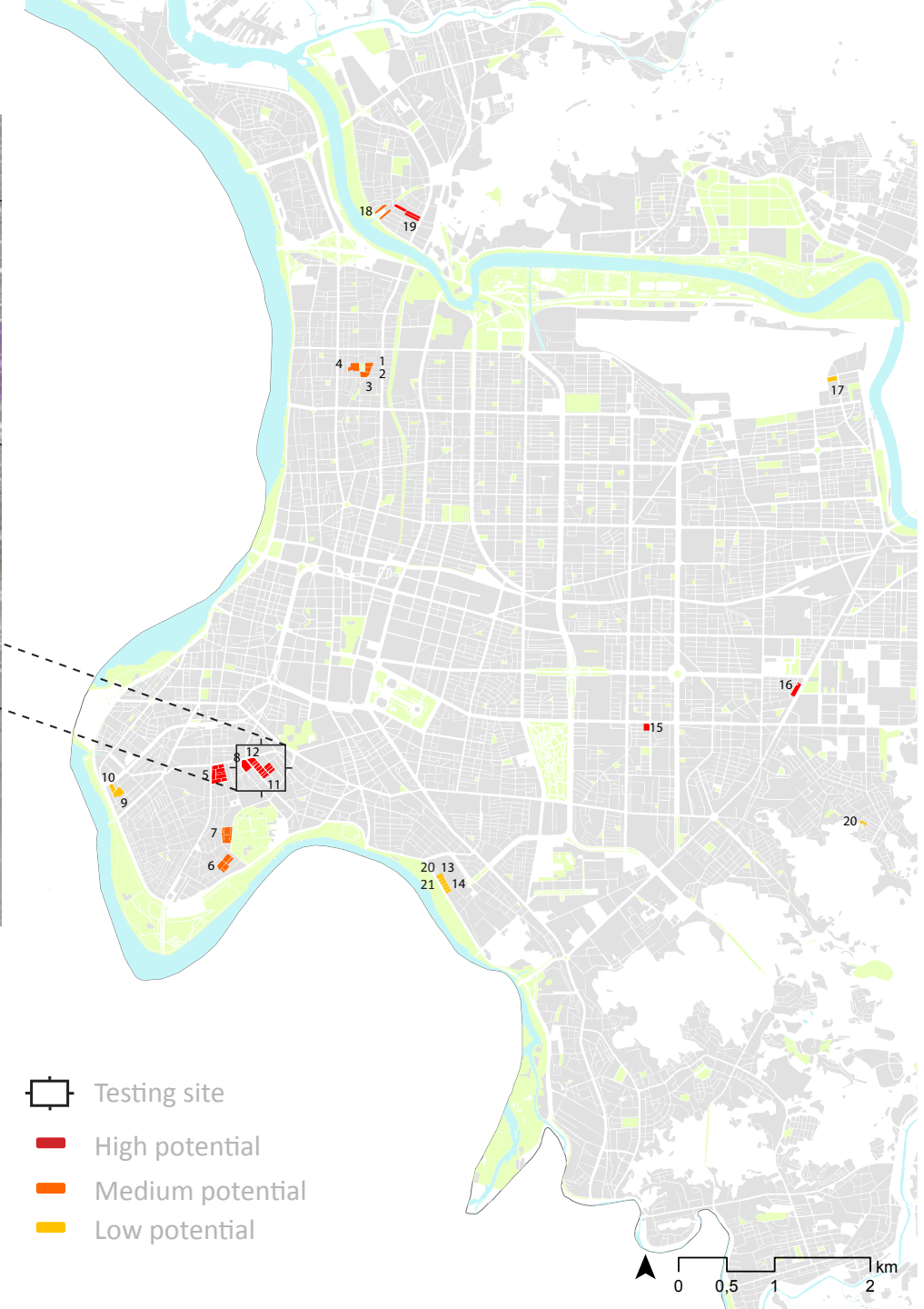


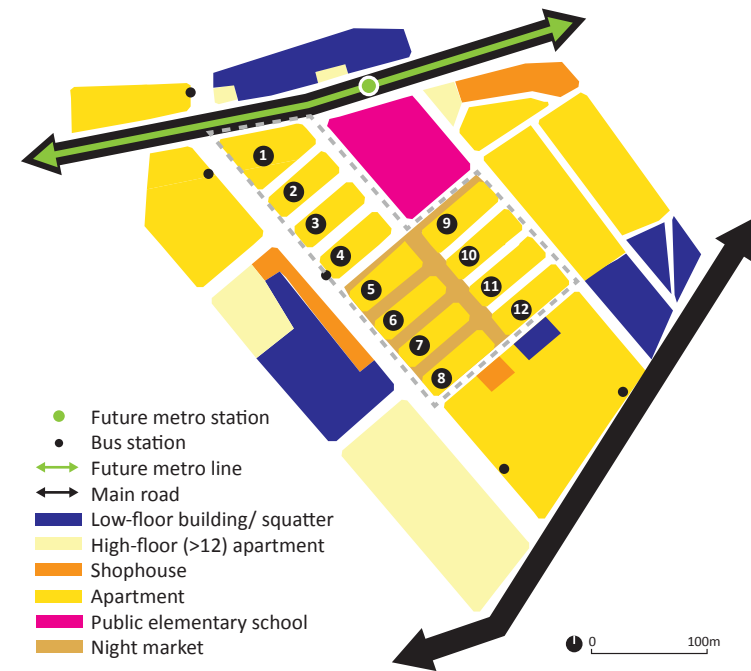
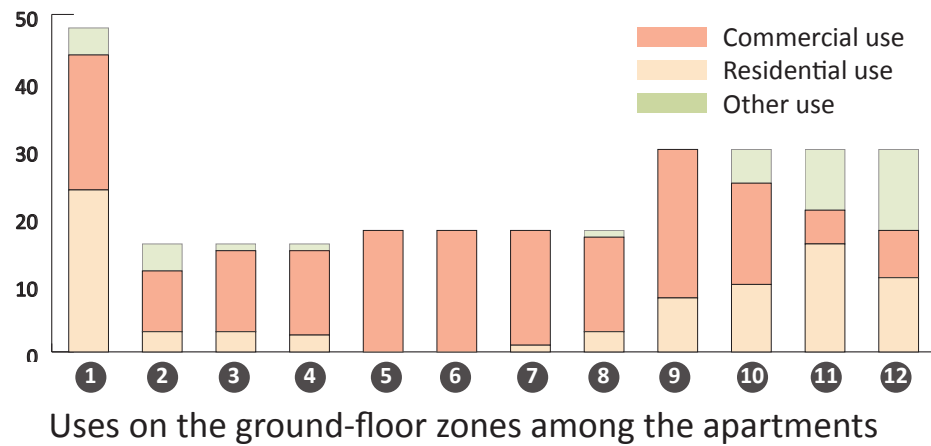
## Positions of the resettled tenements in Taipei



## Potential for urban regeneration

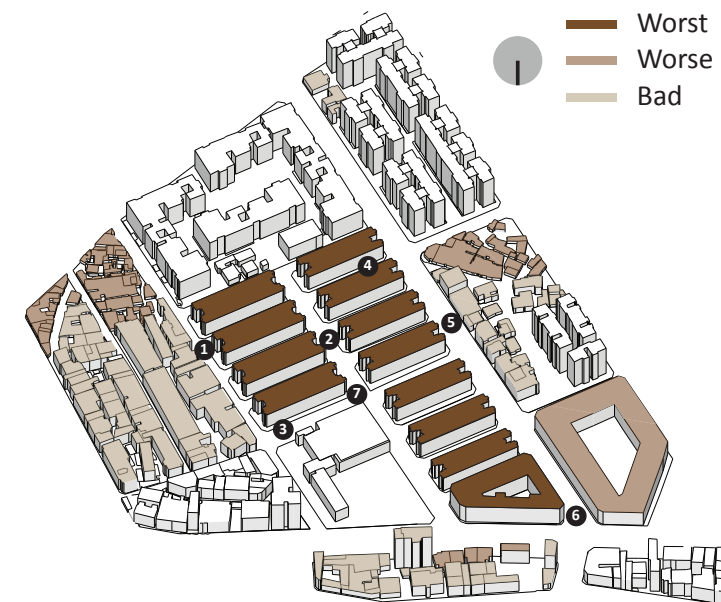
South airport community as a testing site





## Spatial condition

South airport community and its surrounding area



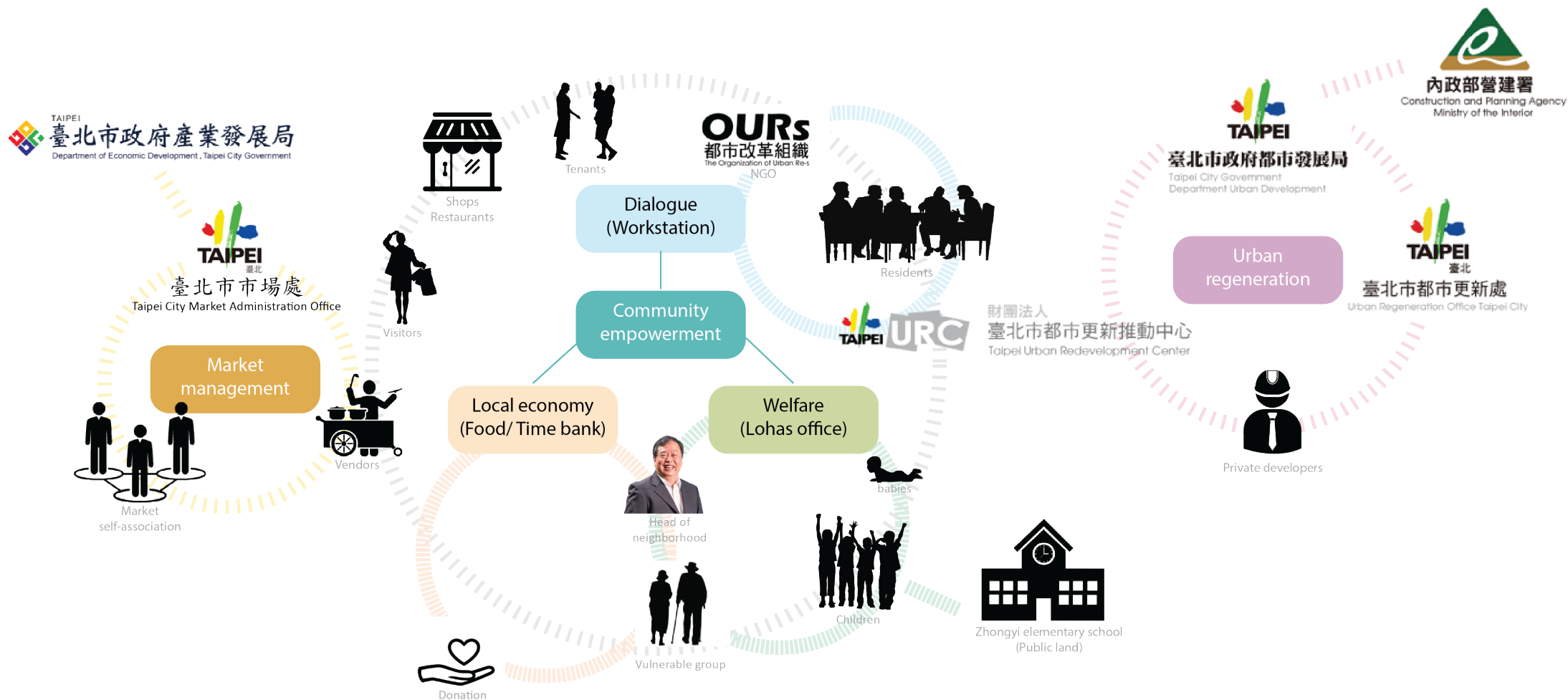
1 2  
3 4  
5 6 7

## Spatial condition

South airport community and its surrounding area

After 50 years,  
**23.5%** inhabitants are belong to **vulnerable group**  
(in social & economic aspects),  
and among the group, **68%** are **tenants**.

**Social condition**

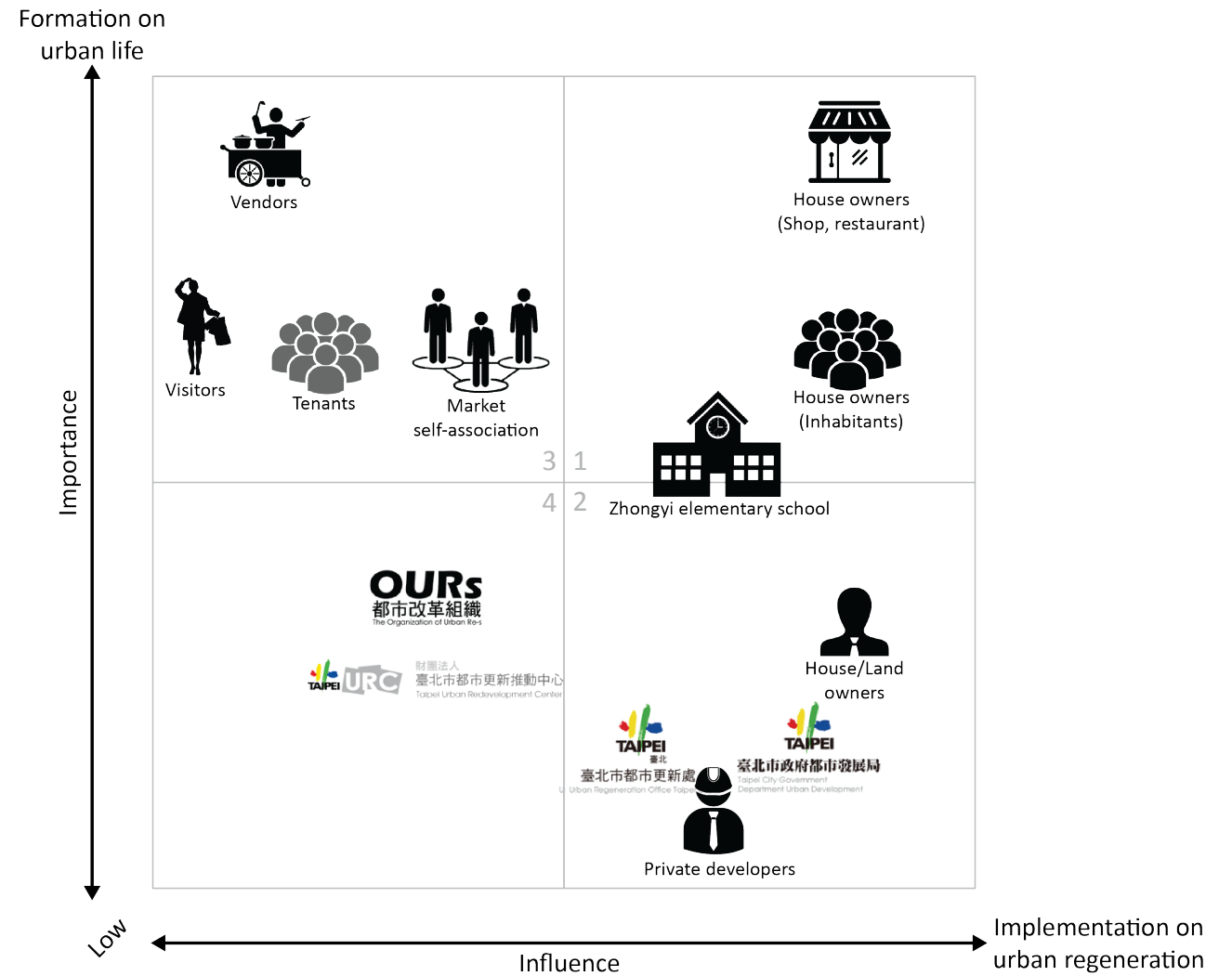


## Social condition

Social structure & Main interests of stakeholders

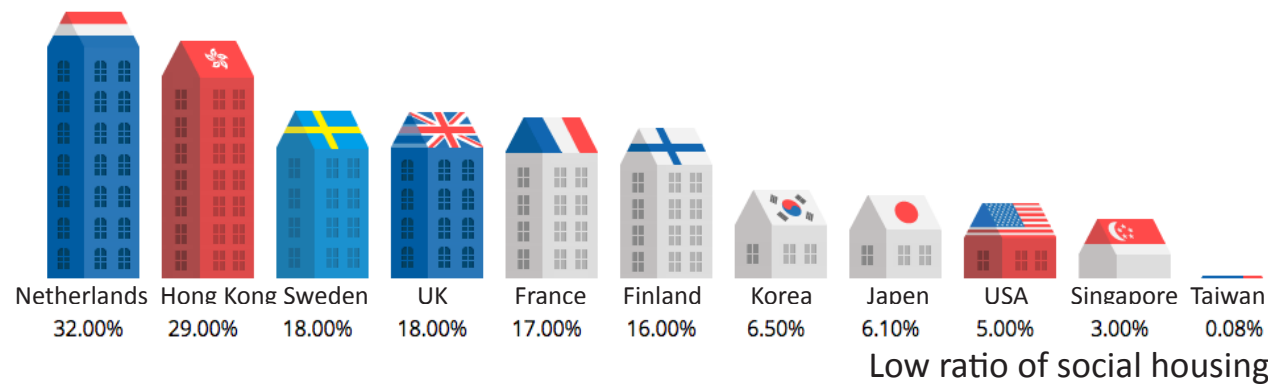
# Institutional condition

Matrix for the postions of stakeholders



Year 2013	Ratio of self-owned housing	Ratio of house price to income
Taiwan	85.3	8.37
Taipei	81.9	15.01

Extremly high house price



Source: [www.urstaipei.net/housing/](http://www.urstaipei.net/housing/)

No supporting system for the vulnerable group

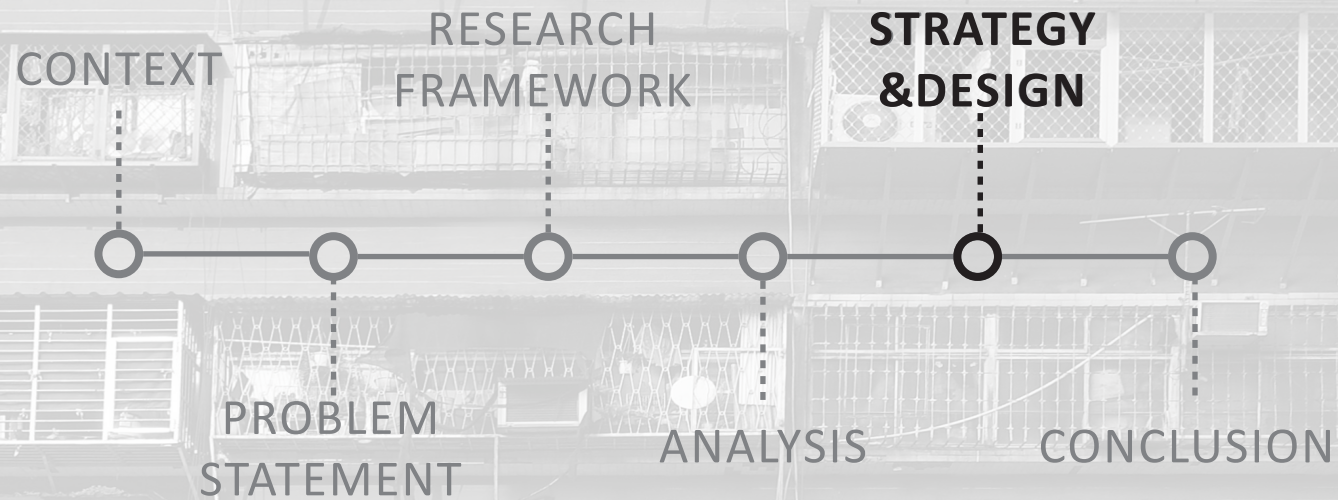
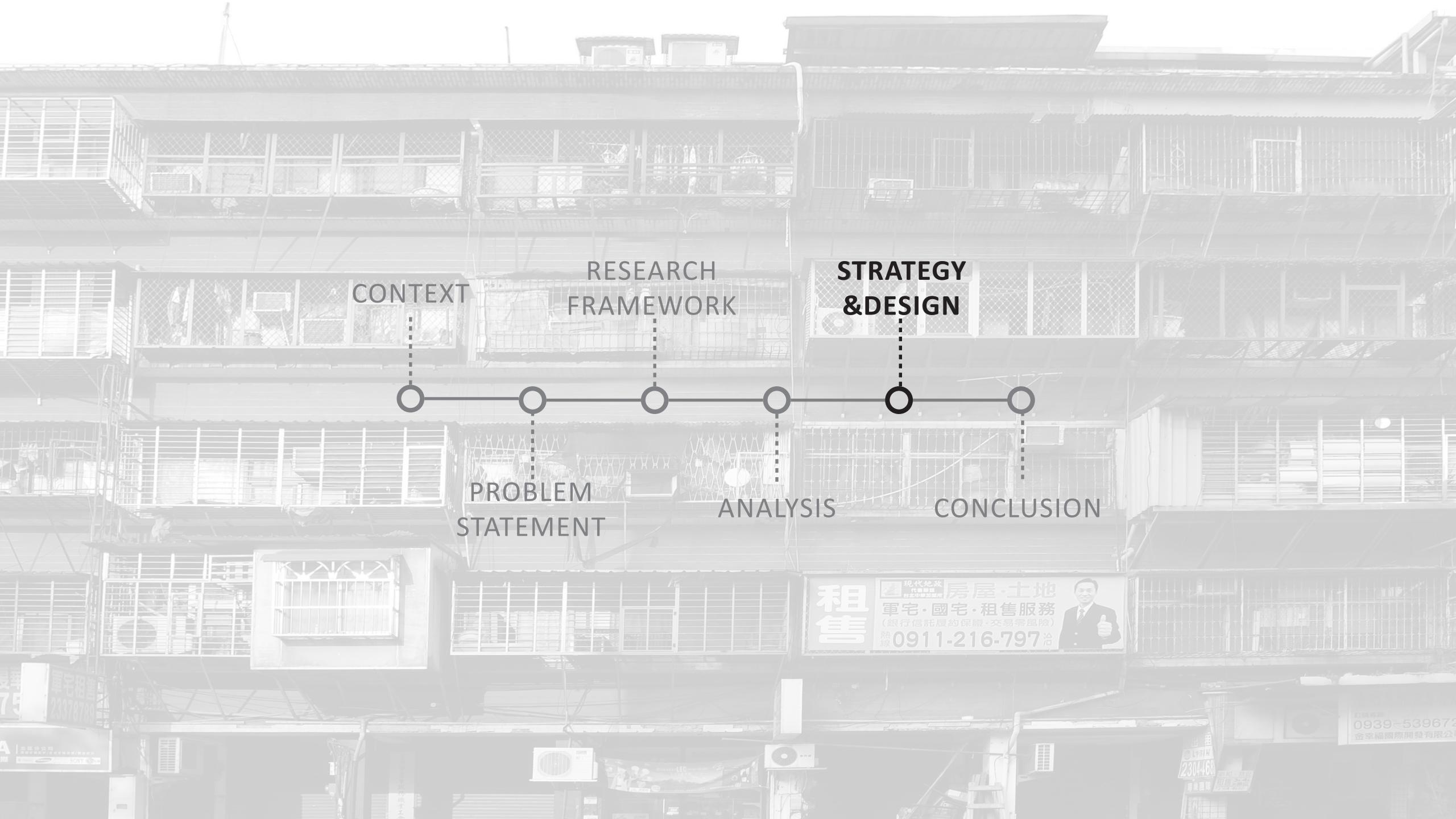
Where			Who	FA bonus & public interest	
Taipei, Taiwan					
Spatial investigation	Designated renewal area	Renewal unit	Public actors -> Private actors	Urban renewal	FA bonus
	Non-designated renewal area		Private actors		

Seoul, Korea							
Social and Spatial investigation	Seoul 100-year structure plan	Designated renewal area	Renewal unit	Land & Housing Corporation (LH) Public actors	Redevelopment	20% Public housing	FA bonus
			Renewal unit	Private actors	Urban management Reconstruction	No FA bonus	

Japan							
Social and Spatial investigation	City plan	Designated renewal area	Renewal unit	Urban Renaissance Agency (UR) Public actors	Redevelopment	Economic renaissance	FA bonus
			Renewal unit	Private actors	Redevelopment	FA bonus	
		Non-designated renewal area	Renewal unit	Private actors	Reconstruction	No FA bonus	

## Case study

Urban regeneration planning system in Taiwan, Korea, and Japan.  
(Orange marks are public interest oriented.)



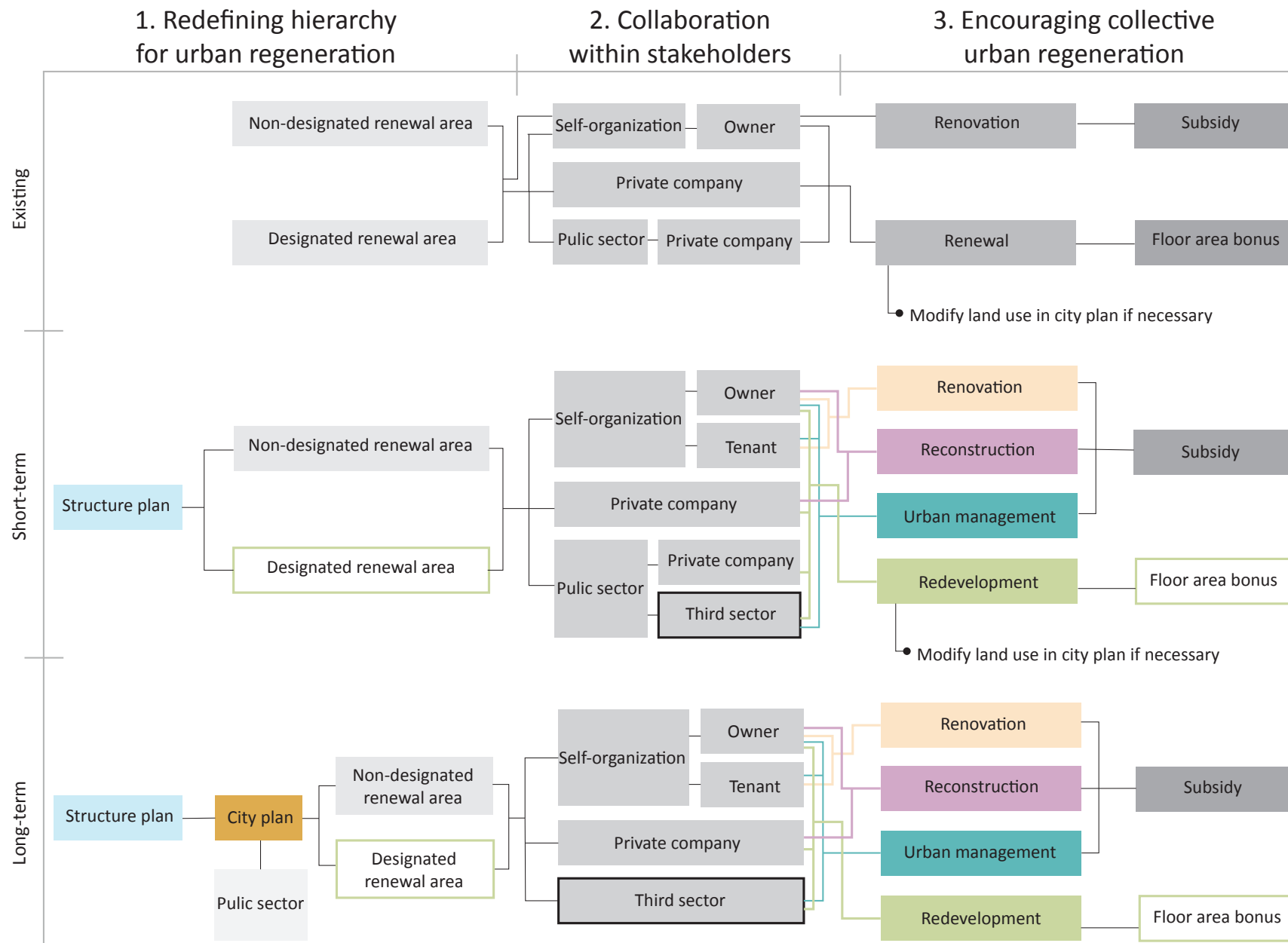
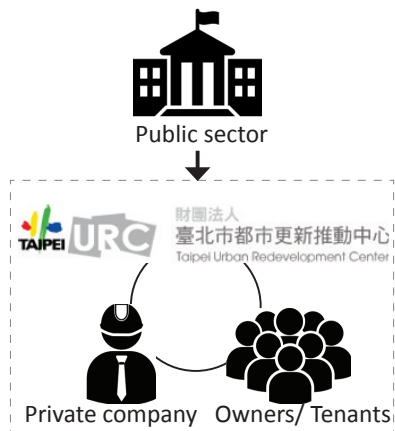
**租售**

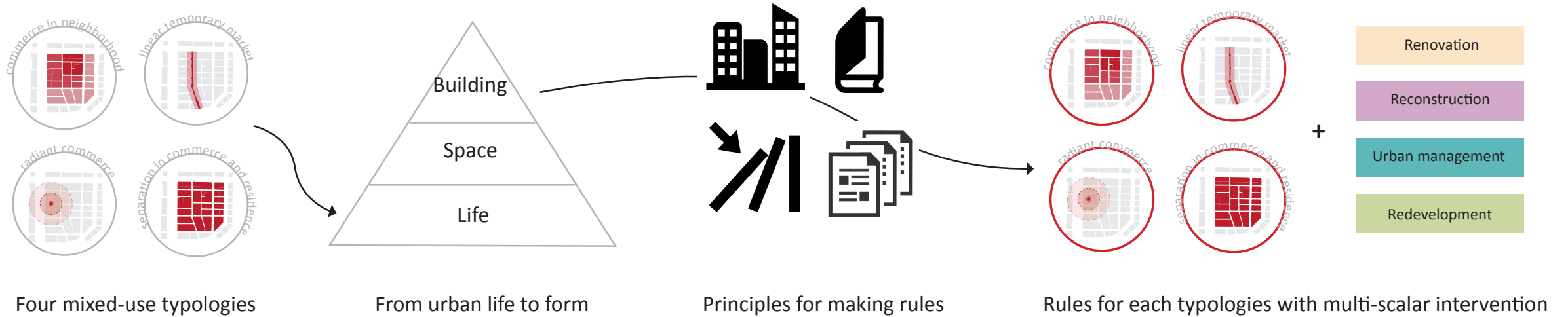
現代地產 房屋·土地  
軍宅·國宅·租售服務  
(銀行信託履約保證·交易零風險)  
熱線 0911-216-797 洽



訂購專線  
0939-539672  
金幸福國際開發有限公司

# Planning strategy

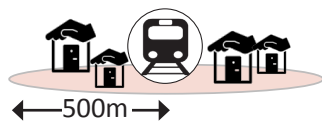




1. Considering current regulations of Taipei
2. Interpreting existing spatial qualities for each mixed-use typologies
3. Physical indicators from theoretical study of urban vitality
4. Triggering urban regeneration

## Spatial strategy

1. Applying mixed-use typologies based on centrality
2. Formulating rules for typologies



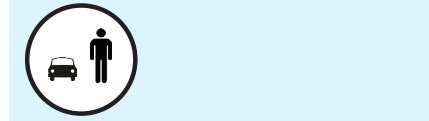
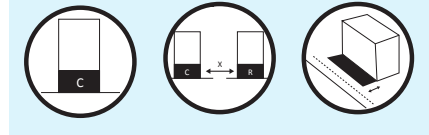
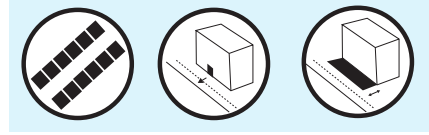
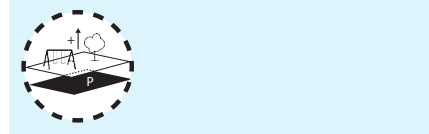
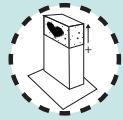
Centrality for the location of typologies

Floor area bonus for public interests

Physical indicators for generating urban vitality

Solution principles for mixed use conflicts

Related physical indicators in theoretical study



Street pattern

- block-proportion

Plot layout

- variety of plat size

- plot division

- plot type

Building setting

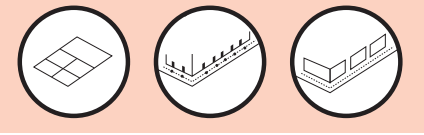
- entrance

- ground coverage

- floor area ratio

- frontality

- confrontation



Street pattern

- block-proportion

Plot layout

- variety of plat size

- plot division

- plot type

Building setting

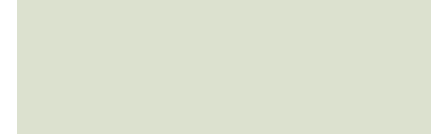
- entrance

- ground coverage

- floor area ratio

- frontality

- confrontation



Street pattern

- block-proportion

Plot layout

- variety of plat size

- plot division

- plot type

Building setting

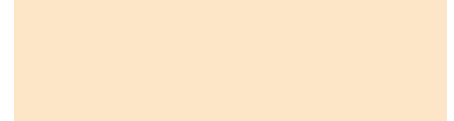
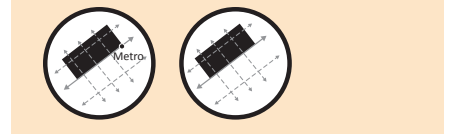
- entrance

- ground coverage

- floor area ratio

- frontality

- confrontation



Street pattern

- block-proportion

Plot layout

- variety of plat size

- plot division

- plot type

Building setting

- entrance

- ground coverage

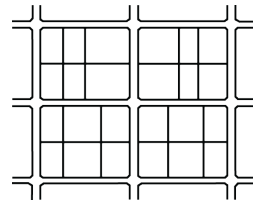
- floor area ratio

- frontality

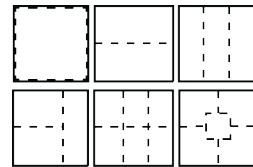
- confrontation

# Strategy: The rules as design guidelines

Physical indicator



Variety of plot size

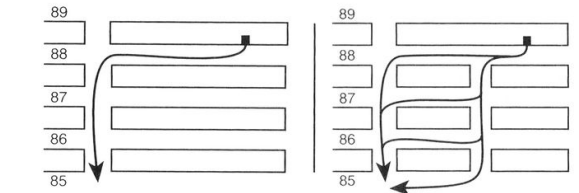


Plot division

(Jacobs, 1961)



Short plot

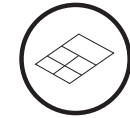


Source: The Death and Life of Great American Cities (Jacobs, 1961)

To create permeability at certain level in order to generate spontaneity and synergy for vitality.



Plot size diversity



To coexist diverse building types, which accommodate both large and small business.

## Strategy: The rules as design guidelines

Example: plot



Physical indicator

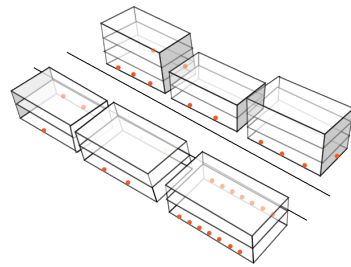
Commercial entrances face to streets



High entrance frequency

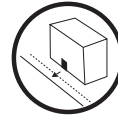


Entrances on different sides



Building's entrances.

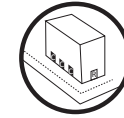
(Hausleitner, 2009)  
(Çalışkan, 2013)



To support the commercial use and attract customers.



To support vibrant atmosphere and form the image of the city.

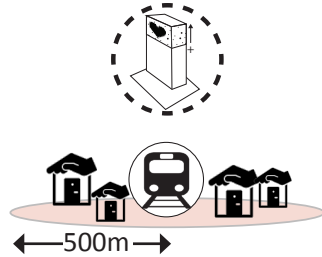


Commercial entrances on the side with the market could help mutual business. Separating commercial entrance from residential entrance to keep inhabitants from the disturbance.

## Strategy: The rules as design guidelines

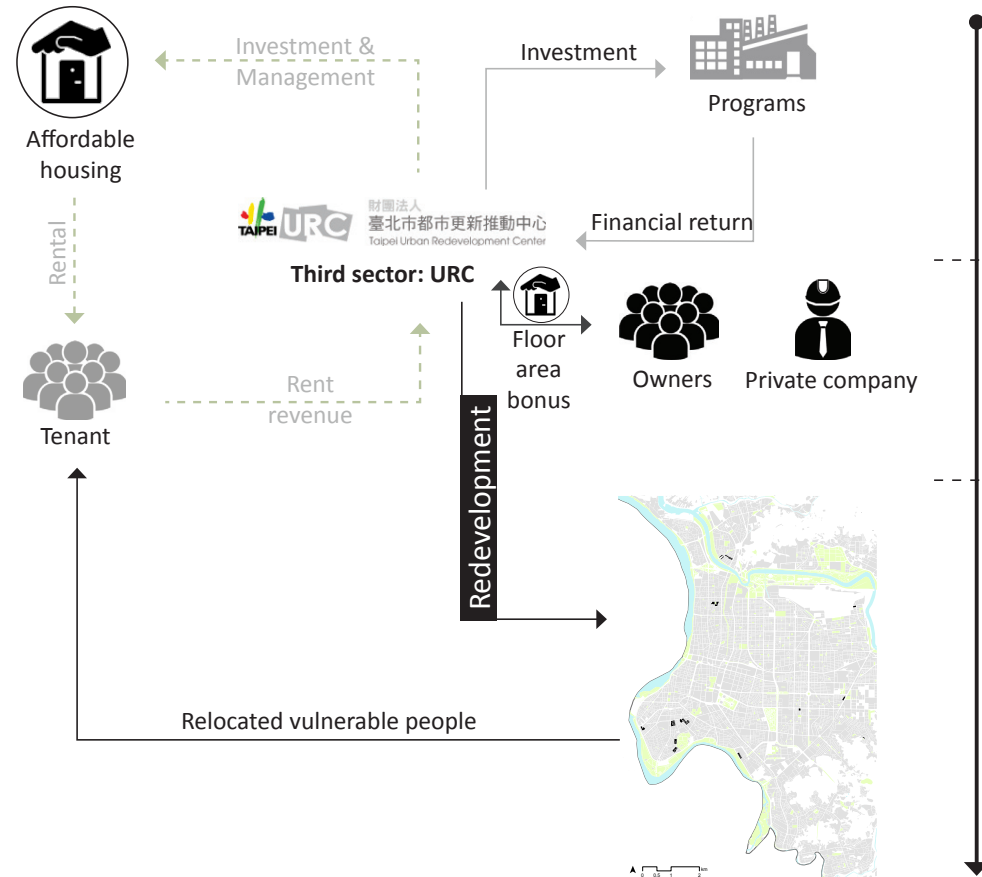
Example: building's entrance

## Rules for all typology: Provision of affordable housing with programs



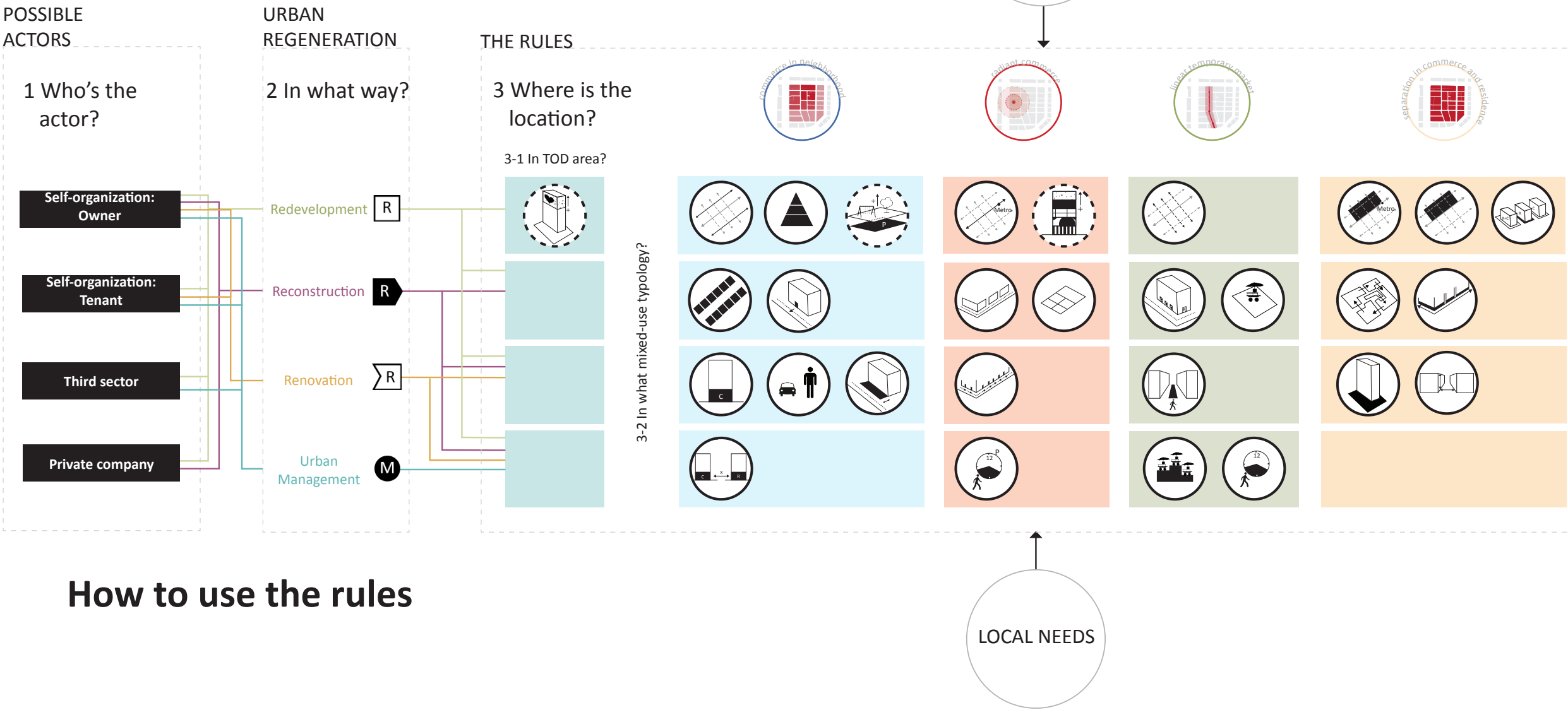
- Case studies in New York and Seoul.
- TOD for affordable housing is applied to avoid the hidden transportation costs arising from housing location for low-income group living in affordable housing.

(Pollard, 2010)



## Strategy: The rules as design guidelines

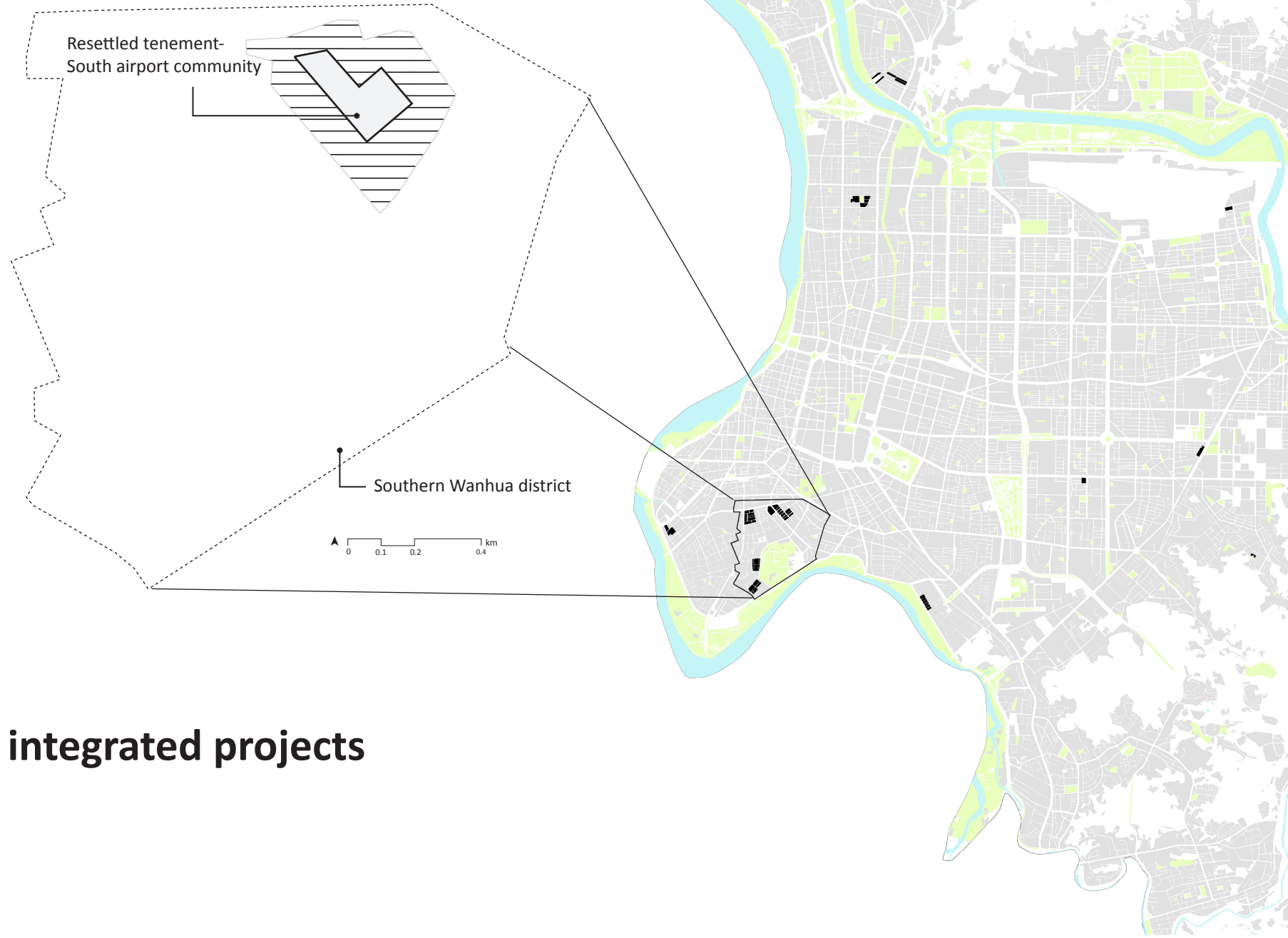
Example: To gain floor area bonus by providing affordable housing



S: starting site

M: the regeneration project

L: urban structure & centrality



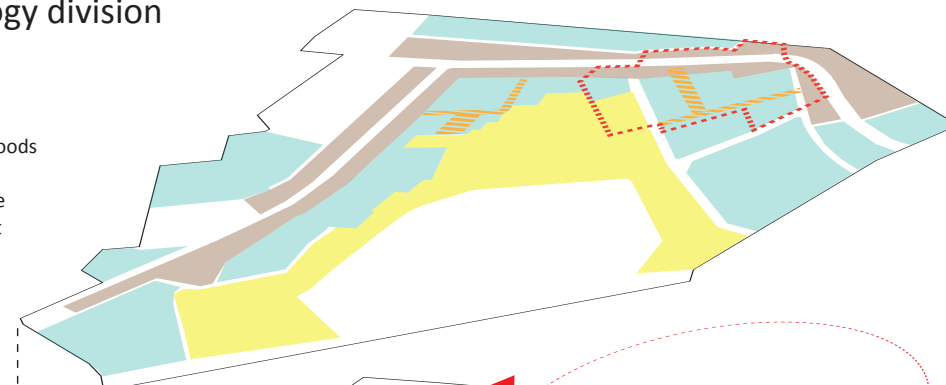
**Strategy: From units to integrated projects**

# Regeneration project

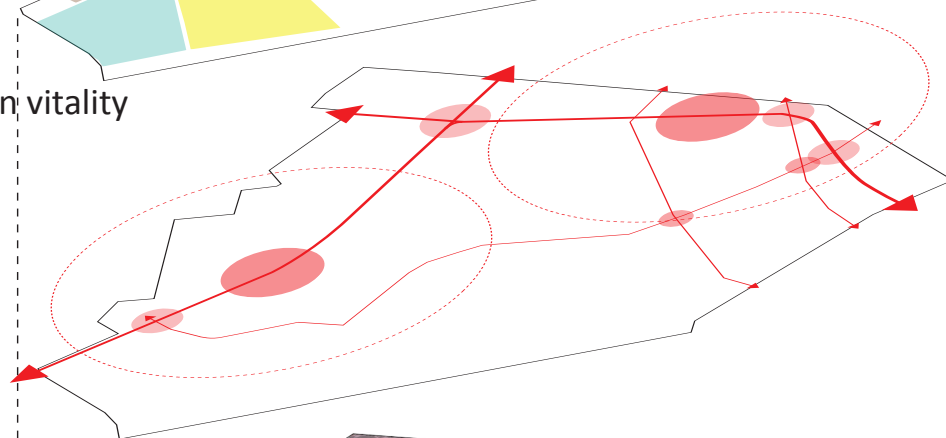
Centrality and division of mixed-use typology

## Concept of typology division

- Radiant commerce
- Commerce in neighborhoods
- Separation for residence
- Separation for commerce
- Linear temporary market

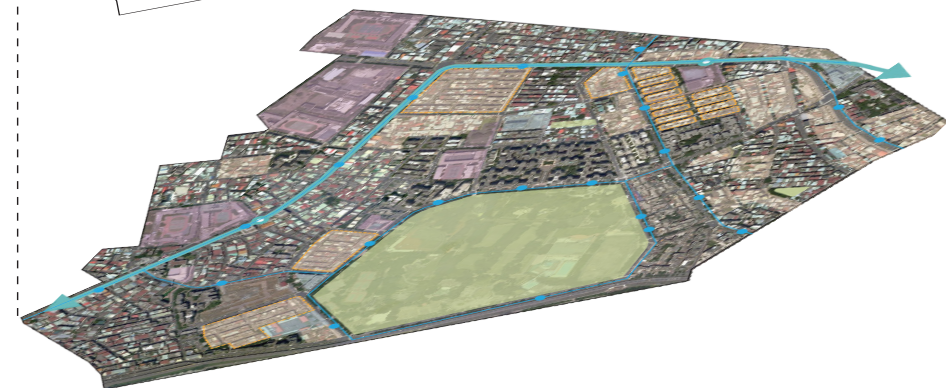


## Centrality of urban vitality



## Current condition

- Future metro station
- Bus stop
- Future metro line
- Resettle tenement
- School
- Public institution
- Market
- Park
- Designated renewal area

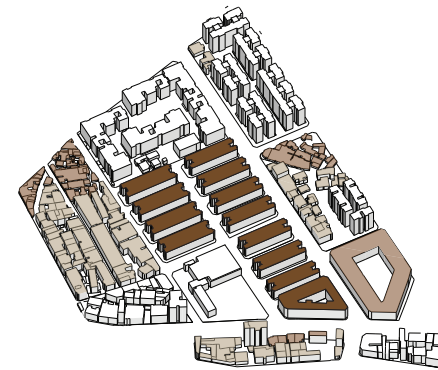
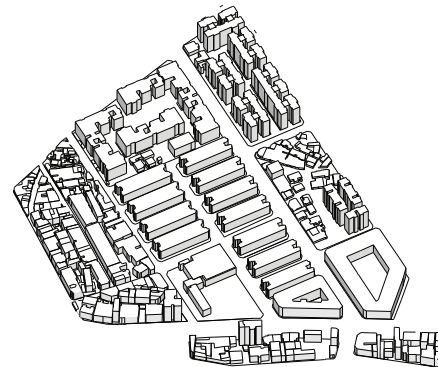


# Regeneration project

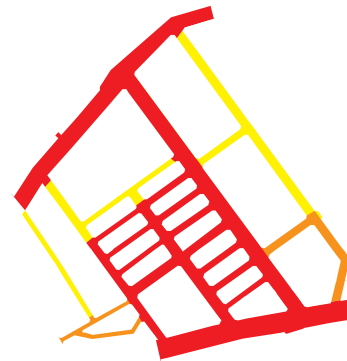
Flexibility of the design with the rules

- Future metro station
  - Bus station
  - ↔ Future metro line
  - ↔ Main road
  - Low-floor building/ squatter
  - High-floor (>12) apartment
  - Shophouse
  - Apartment
  - Public elementary school
  - Night market
  - High
  - Medium
  - Low
  - Radiant commerce
  - Commerce in neighborhoods
  - Separation for residence
- 0 100m

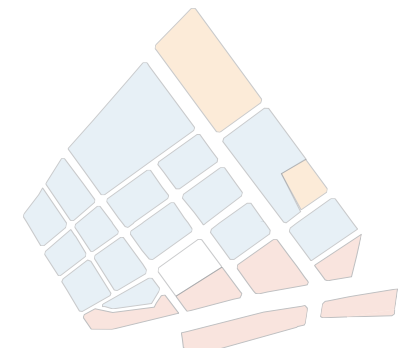
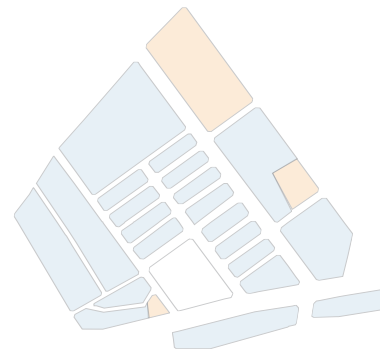
Built environment



Urban vitality



Typology division

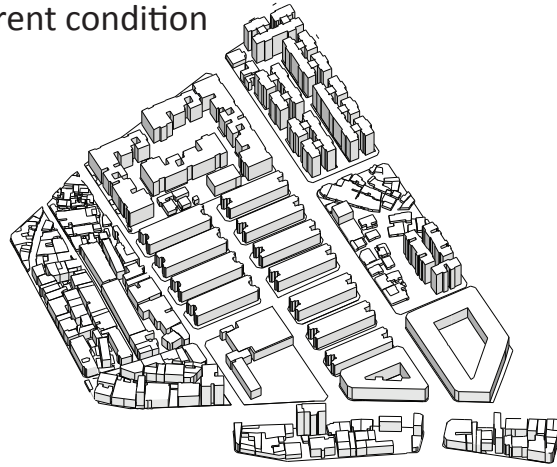


Current condition

Analyses

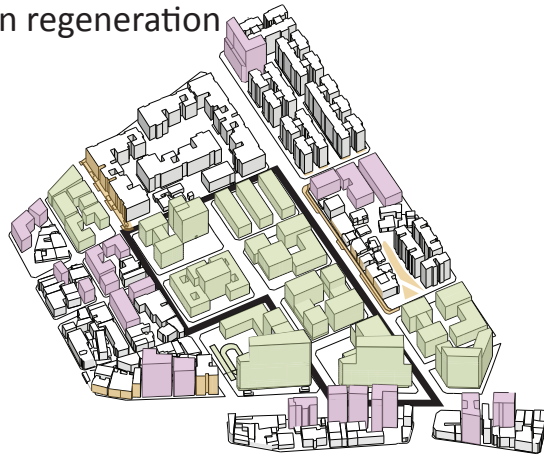
Physical requirements

Current condition



Approaches in urban regeneration

- Renovation
- Reconstruction
- Redevelopment
- South airport community



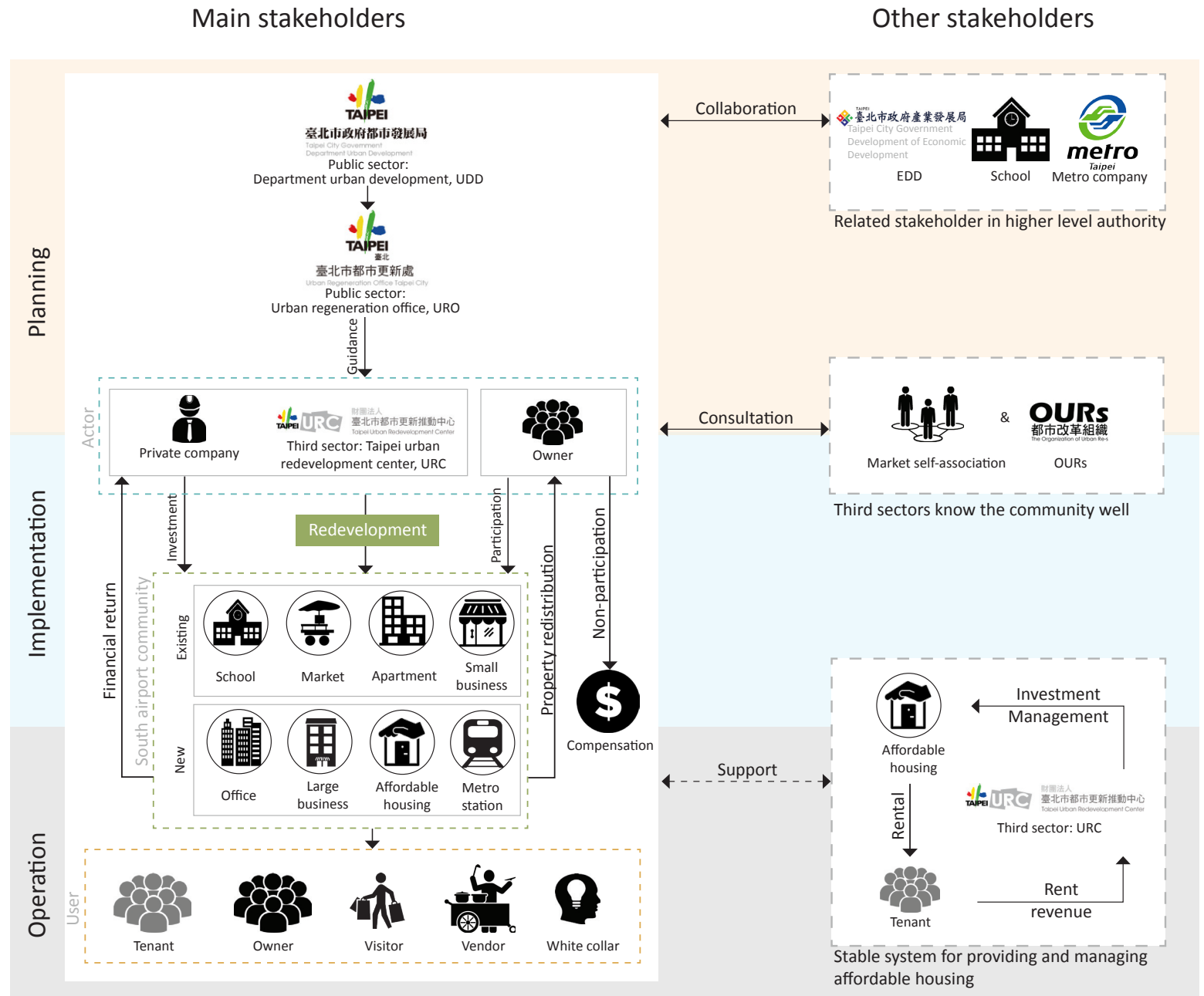
Design with the rules



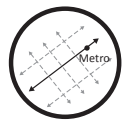
## Regeneration project

Design proposal

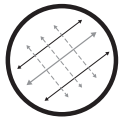
# Regeneration project Development mode



## Centrality for the location of typologies



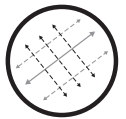
Located along main streets and near public transit stations



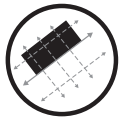
Located along lower-level streets



More economic activities based on centrality

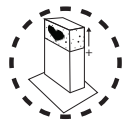


Crossed by main streets

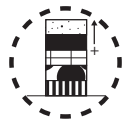


Located vastly along main streets

## Floor area bonus for public interests



Provision of affordable housing with programs



Separation construction and installation

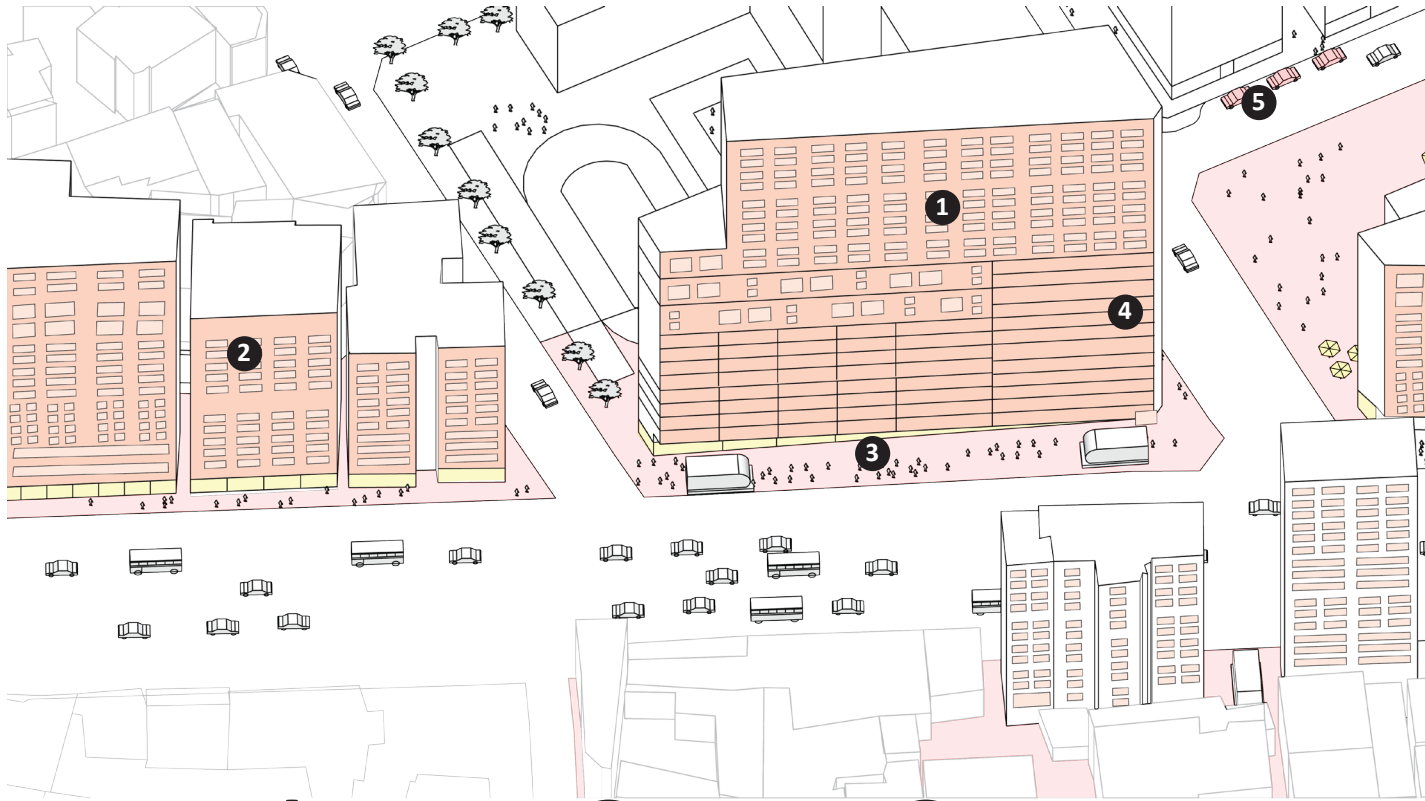


Contribution of open space plus parking



## Applying the rules

In the whole framework of the regeneration project

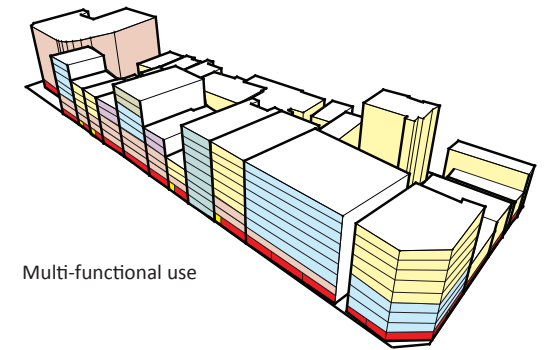
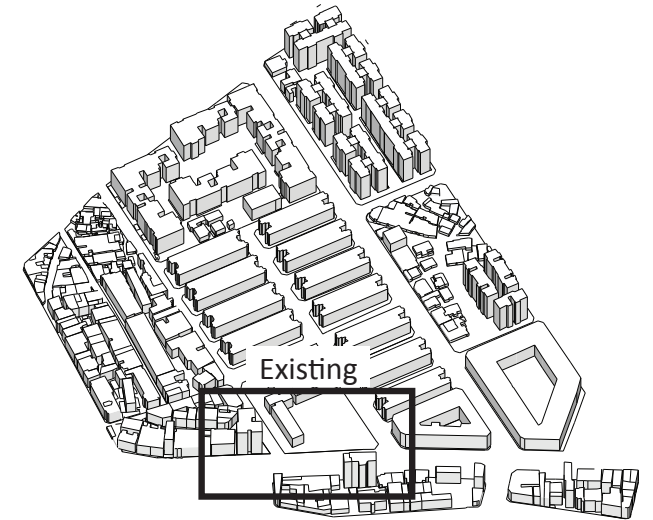


- ① Separation construction and installation
- ② Plot size diversity
- ③ High entrance frequency
- ④ Street wall continuity
- ⑤ Flexible parking hour

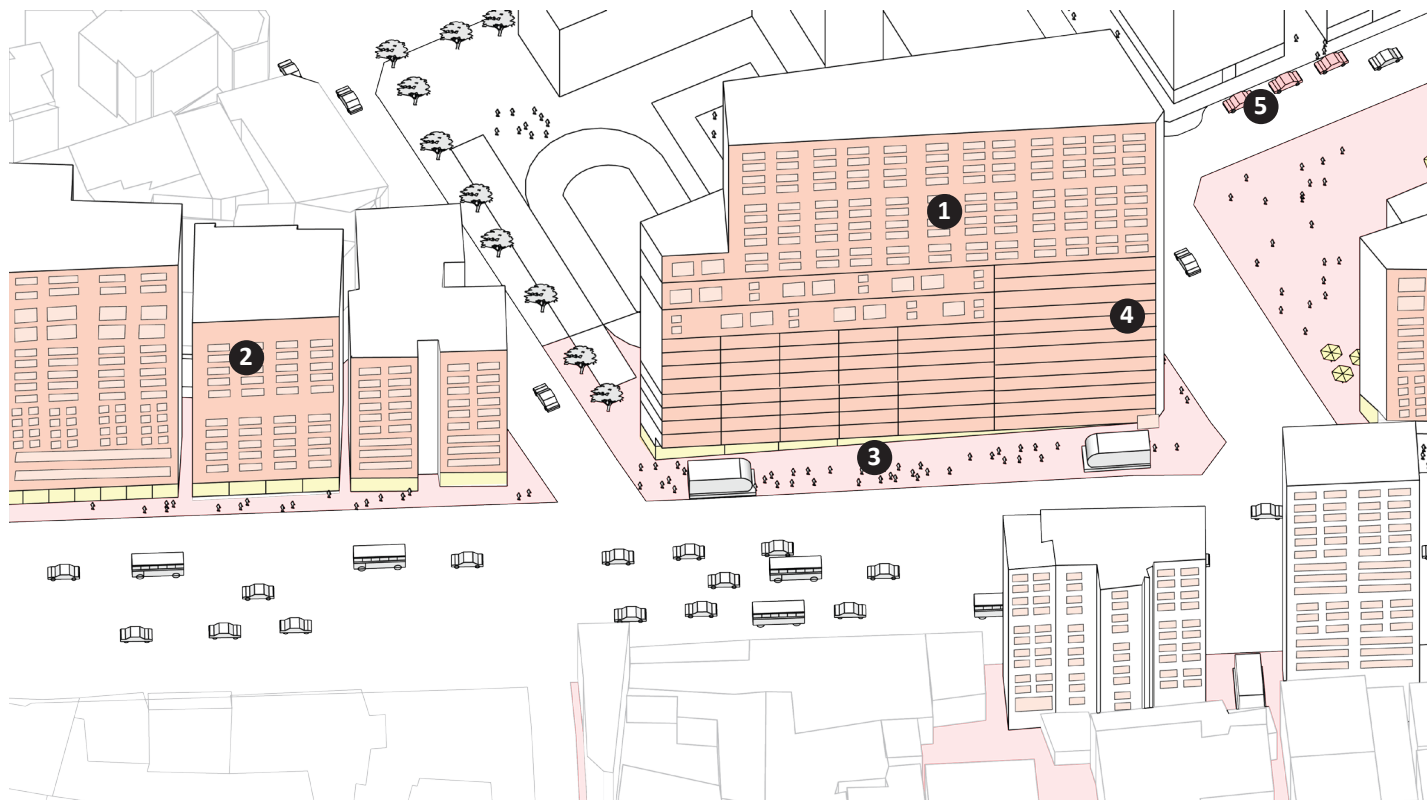


## Radiant commerce

Applying the rules



Multi-functional use

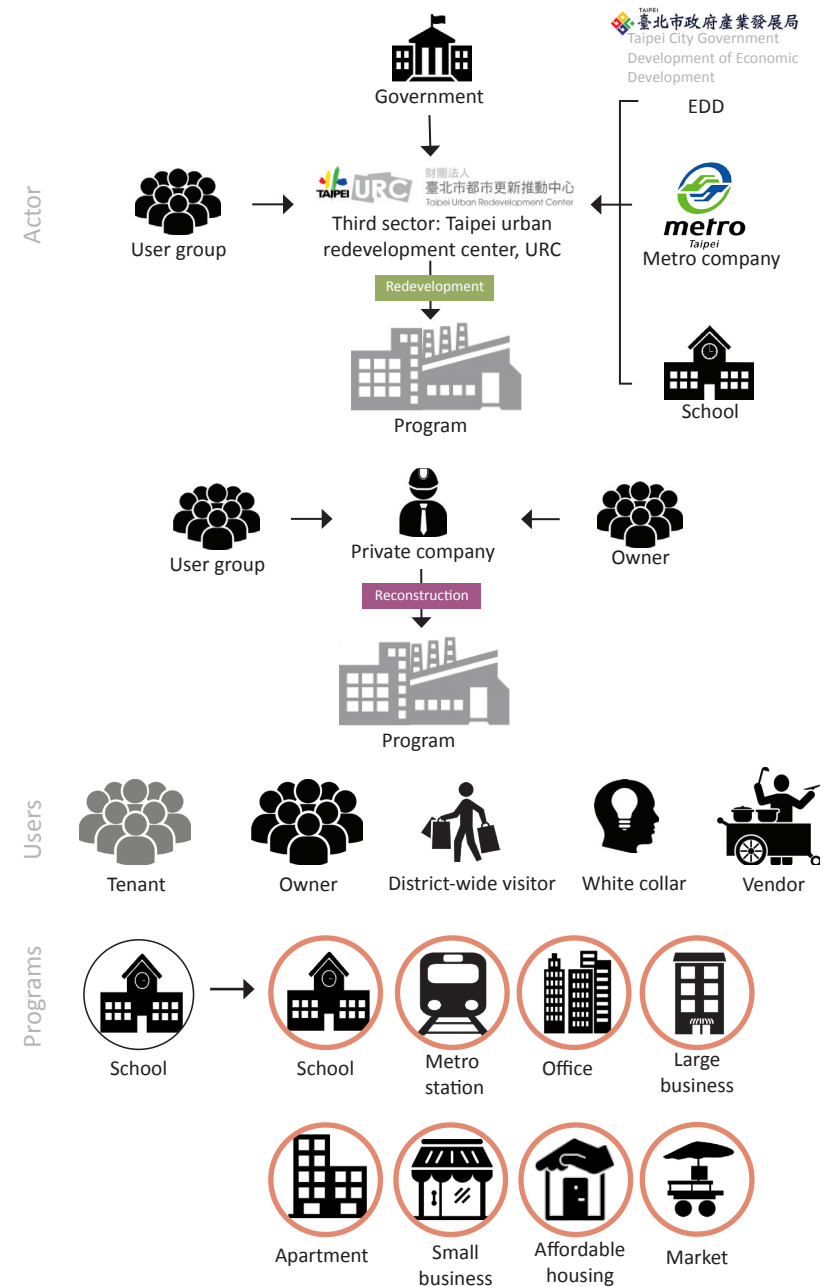


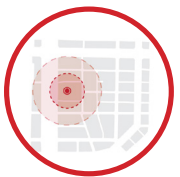
- 1 Separation construction and installation
- 2 Plot size diversity
- 3 High entrance frequency
- 4 Street wall continuity
- 5 Flexible parking hour



## Radiant commerce

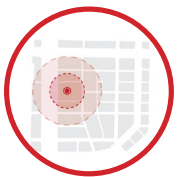
### Developing mode





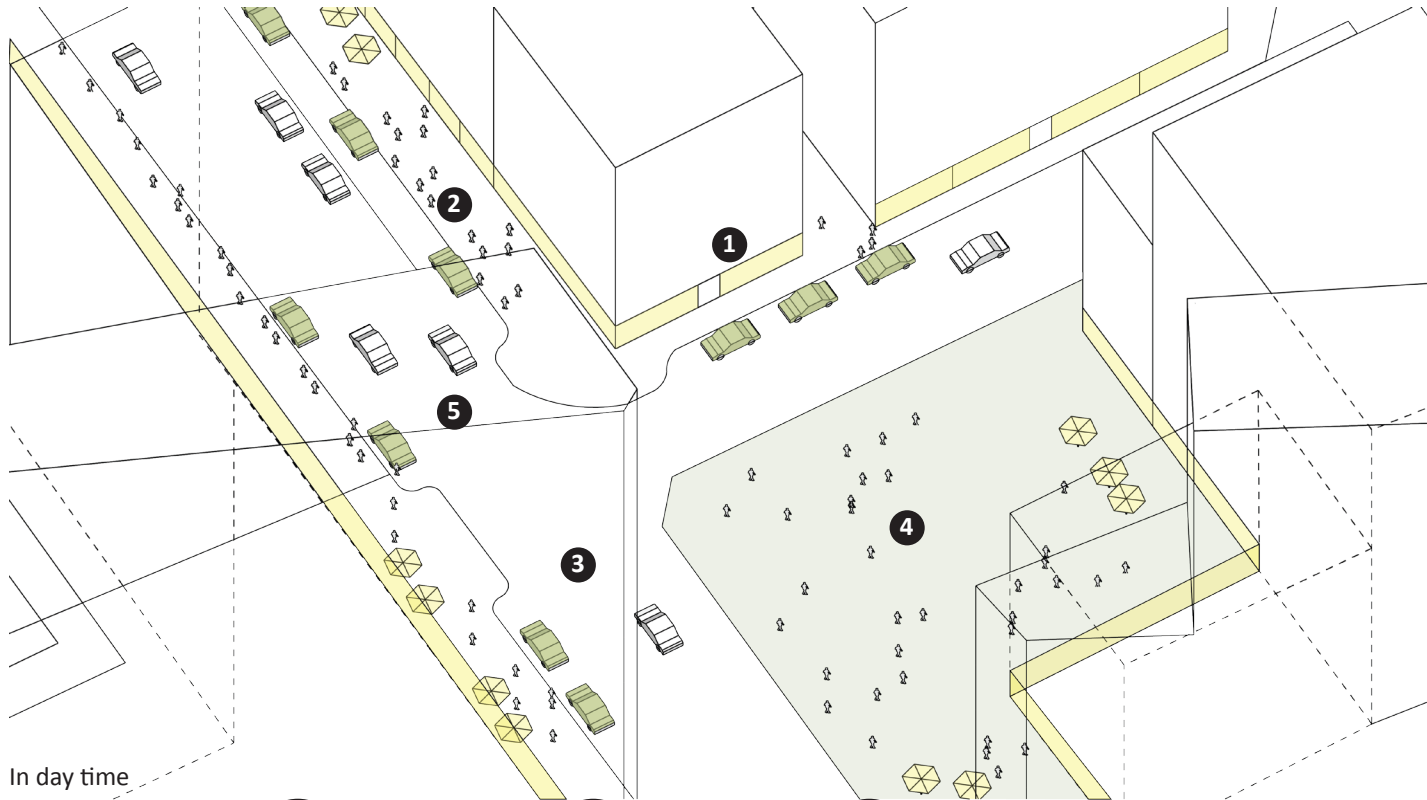
## Radiant commerce

Current street view



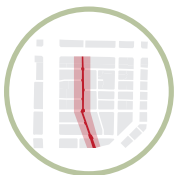
## **Radiant commerce**

Eye-level perspective



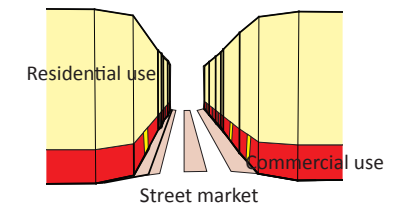
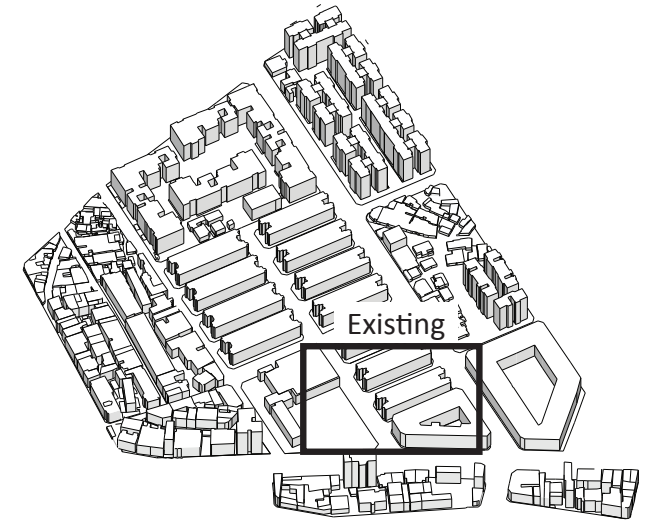
In day time

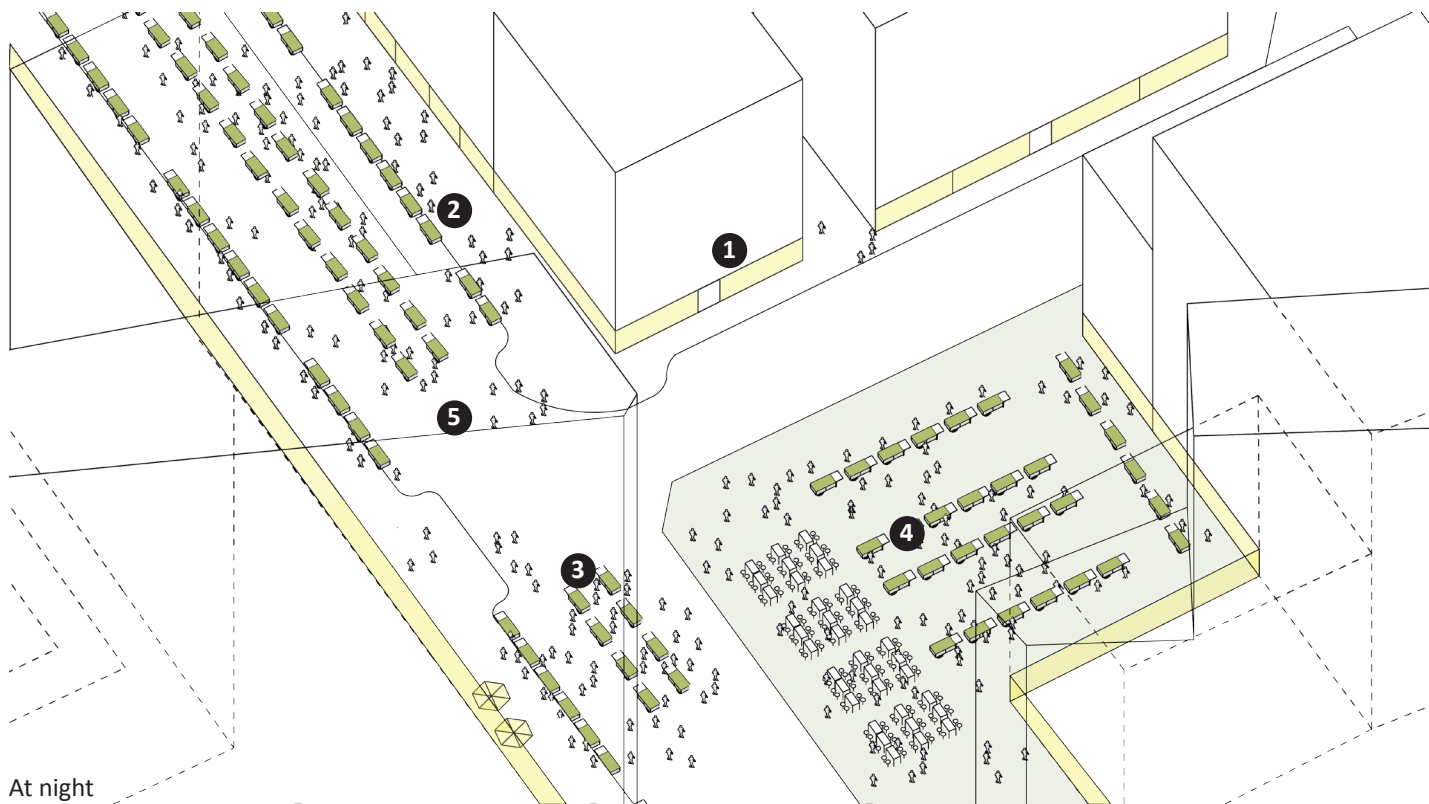
- 1  Entrances on different sides
- 2  Width of sidewalk
- 3  Classified vendors
- 4  Vendors gathering
- 5  Traffic-free hours



## Linear temporary market

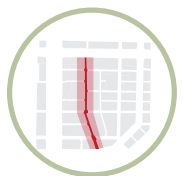
Applying the rules





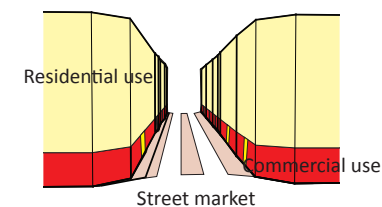
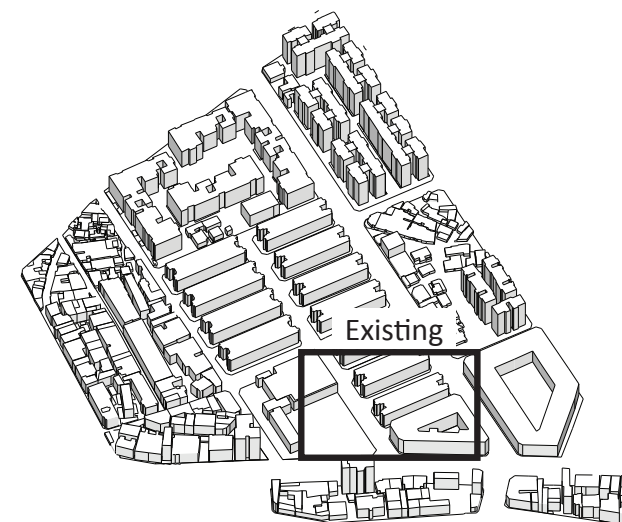
At night

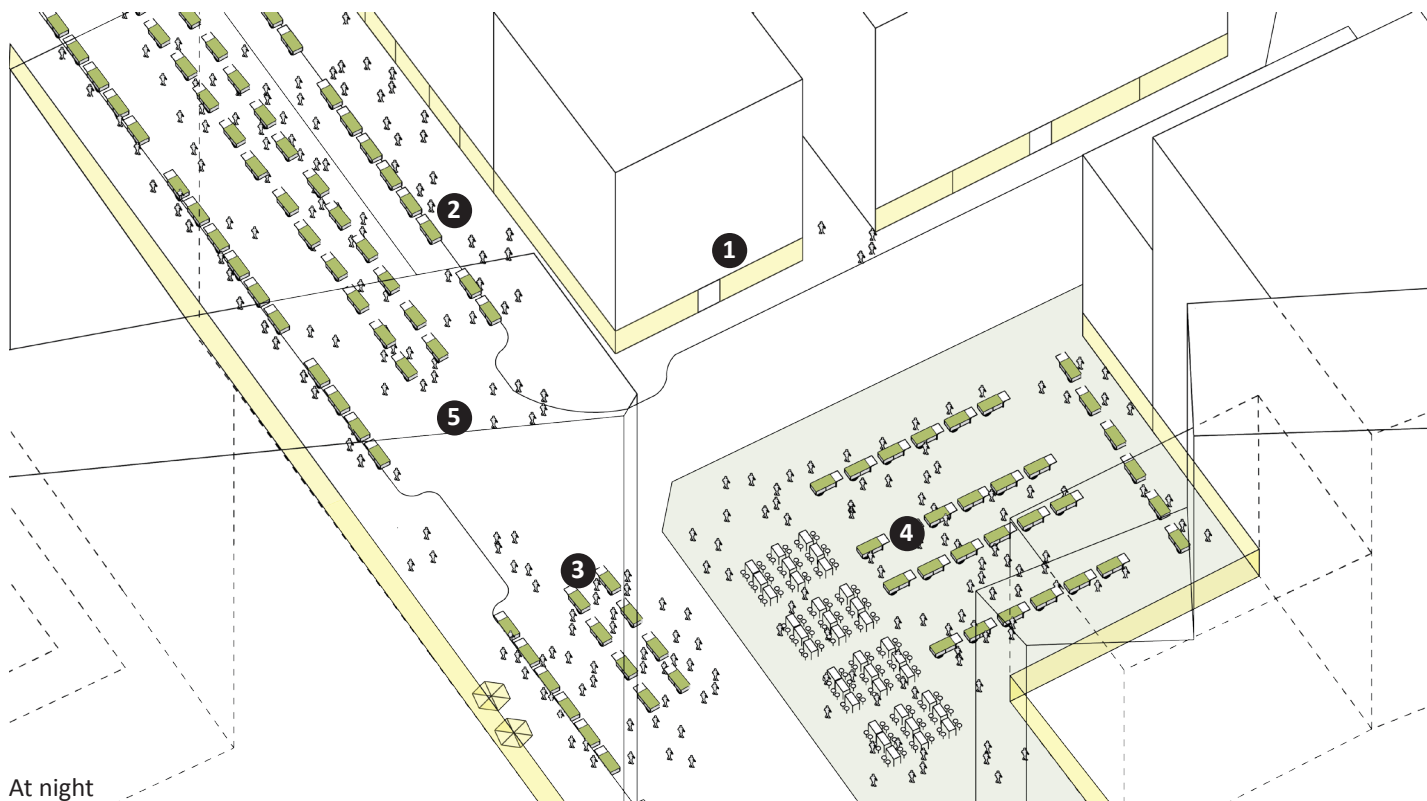
- 1  Entrances on different sides
- 2  Width of sidewalk
- 3  Classified vendors
- 4  Vendors gathering
- 5  Traffic-free hours



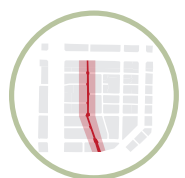
## Linear temporary market

Applying the rules



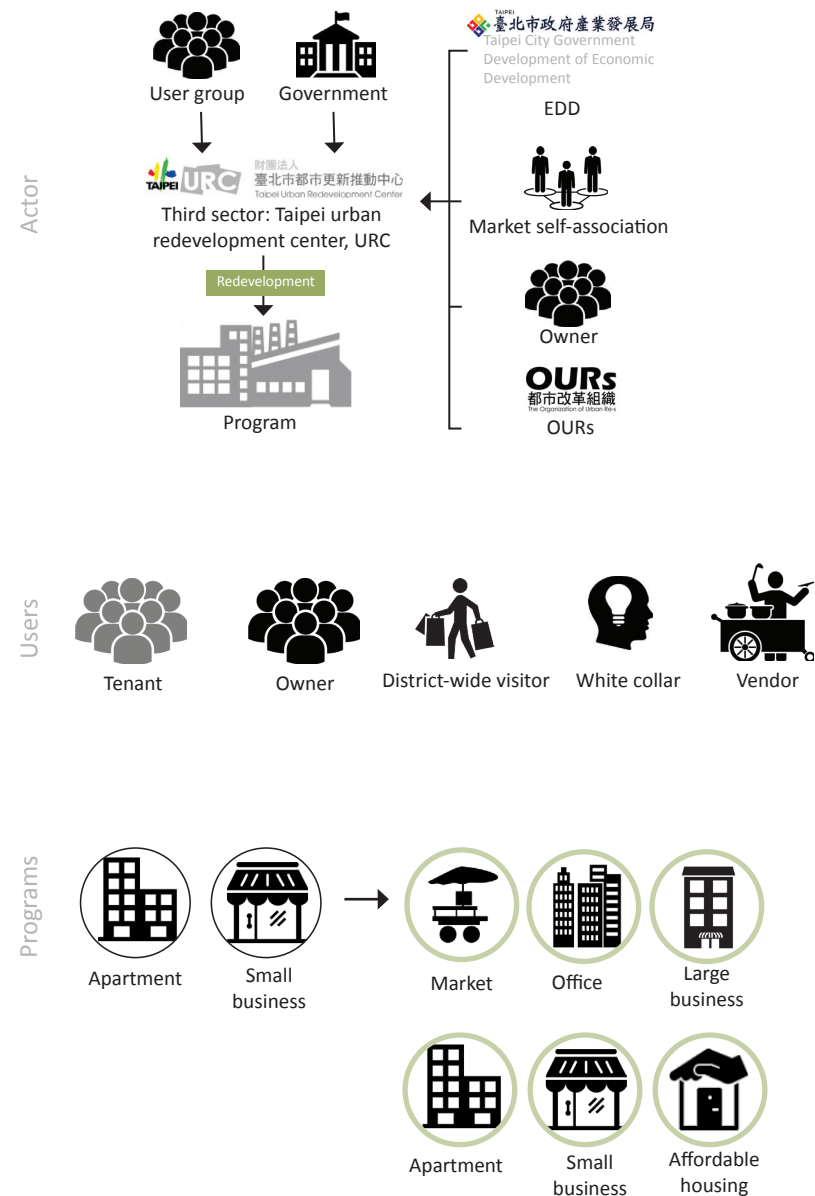


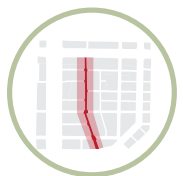
- 1 Entrances on different sides
- 2 Width of sidewalk
- 3 Classified vendors
- 4 Vendors gathering
- 5 Traffic-free hours



## Linear temporary market

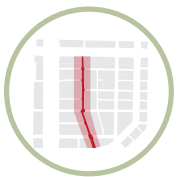
### Developing mode



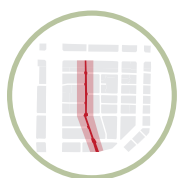


## Linear temporary market

Current street view

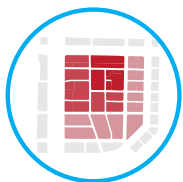
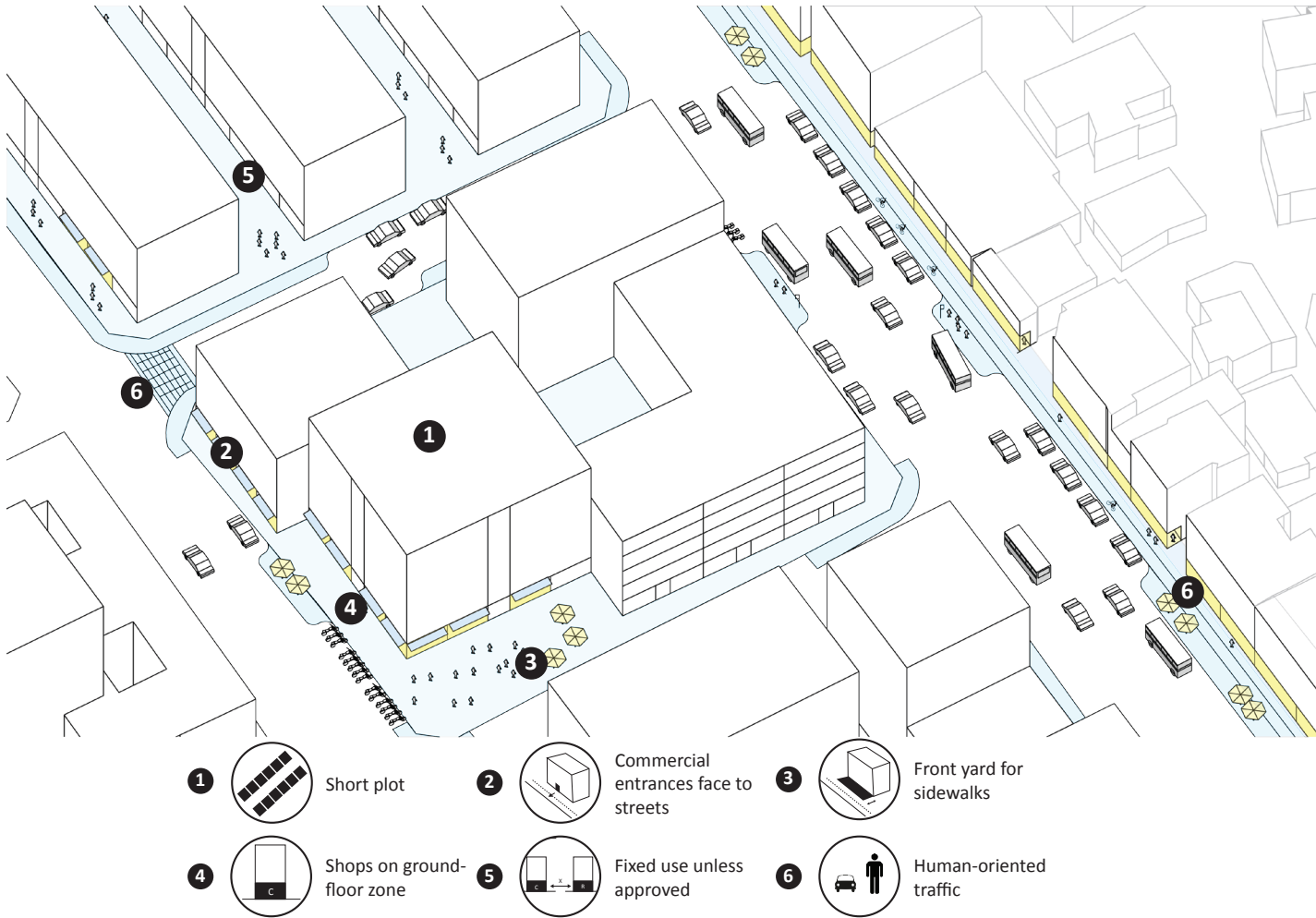


**Linear temporary market**  
Eye-level perspective



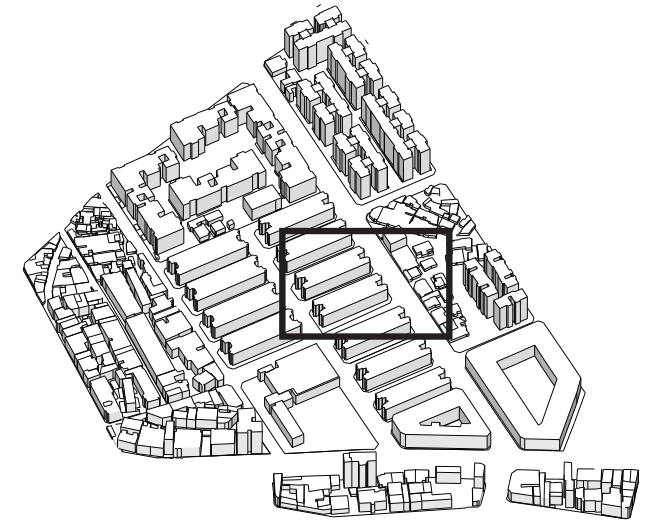
## Linear temporary market

Eye-level perspective

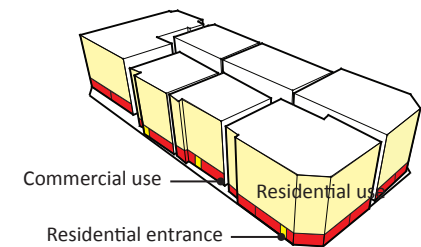


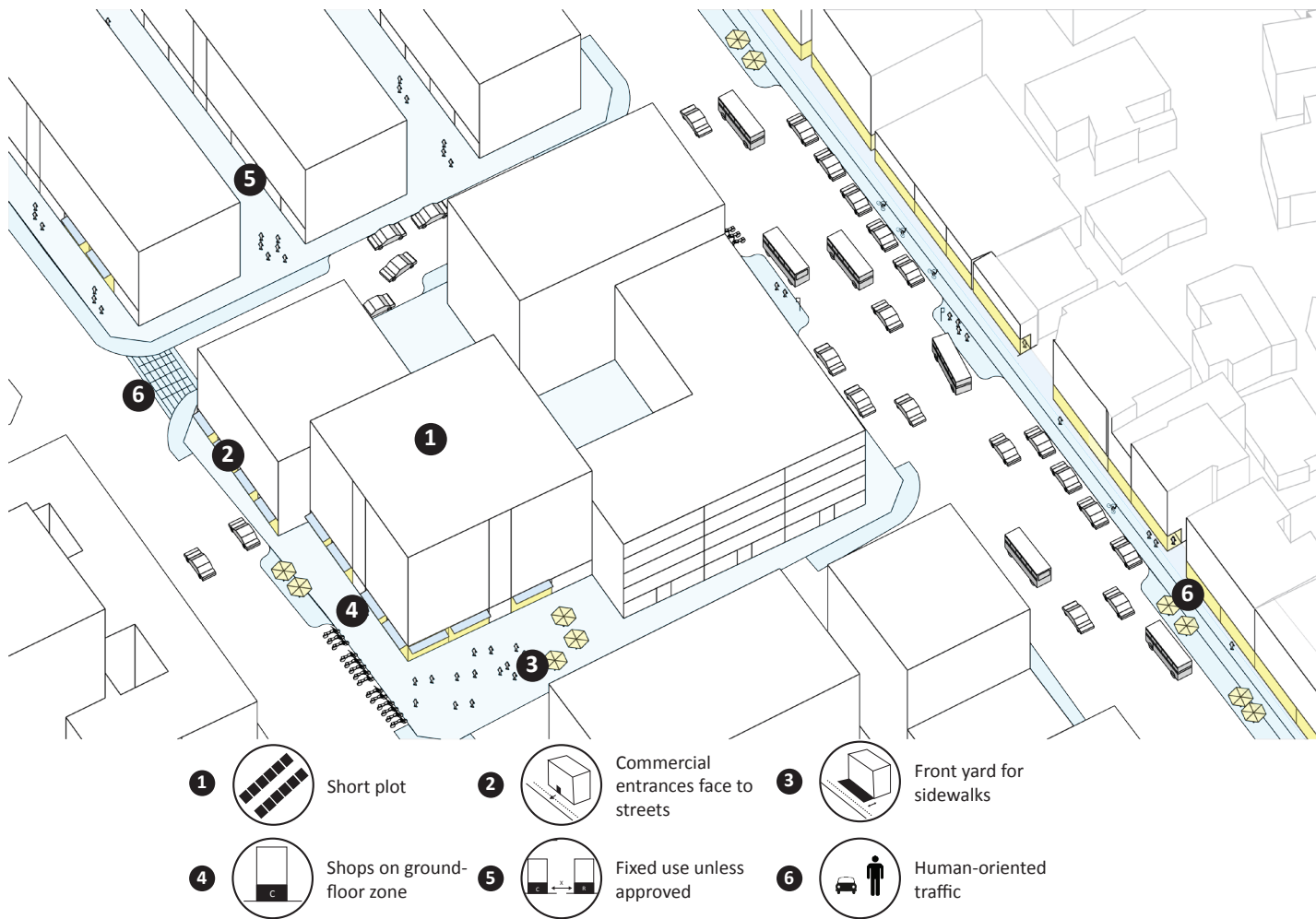
## Commerce in neighborhoods

### Applying the rules



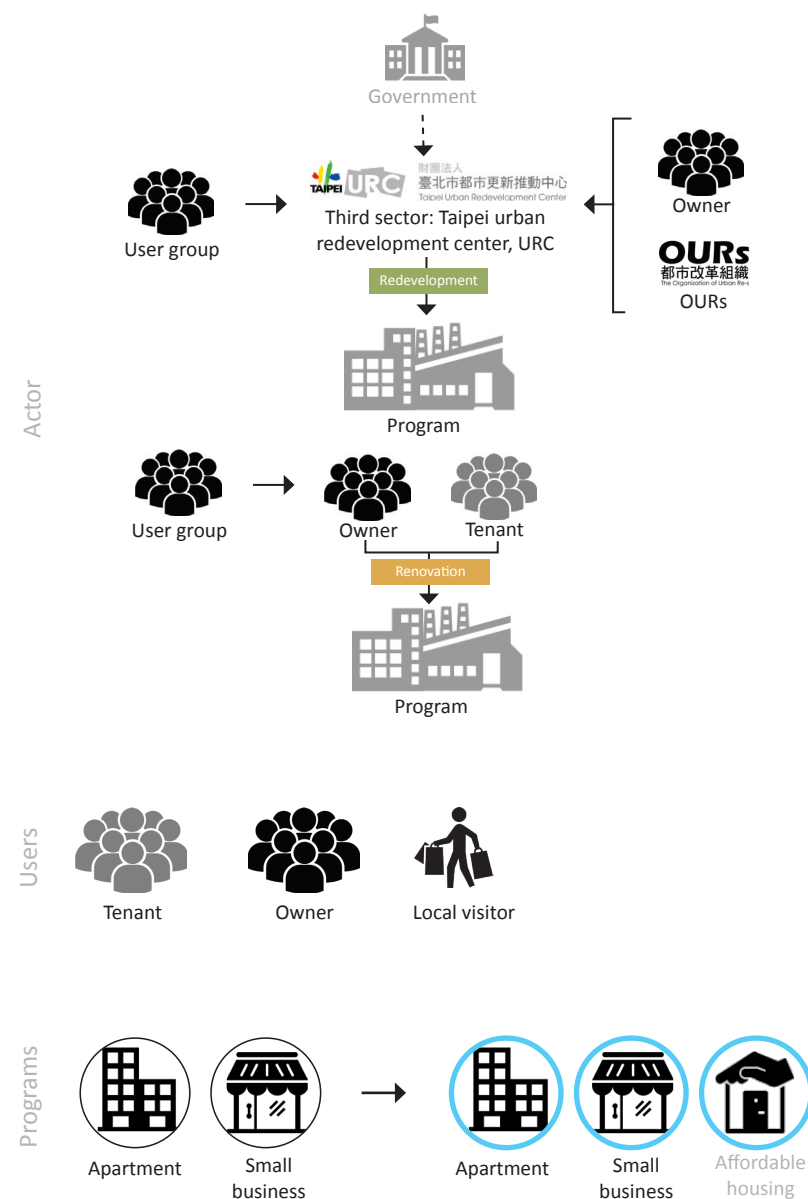
Existing

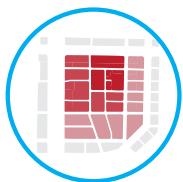




## Commerce in neighborhoods

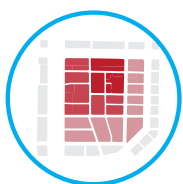
Developing mode





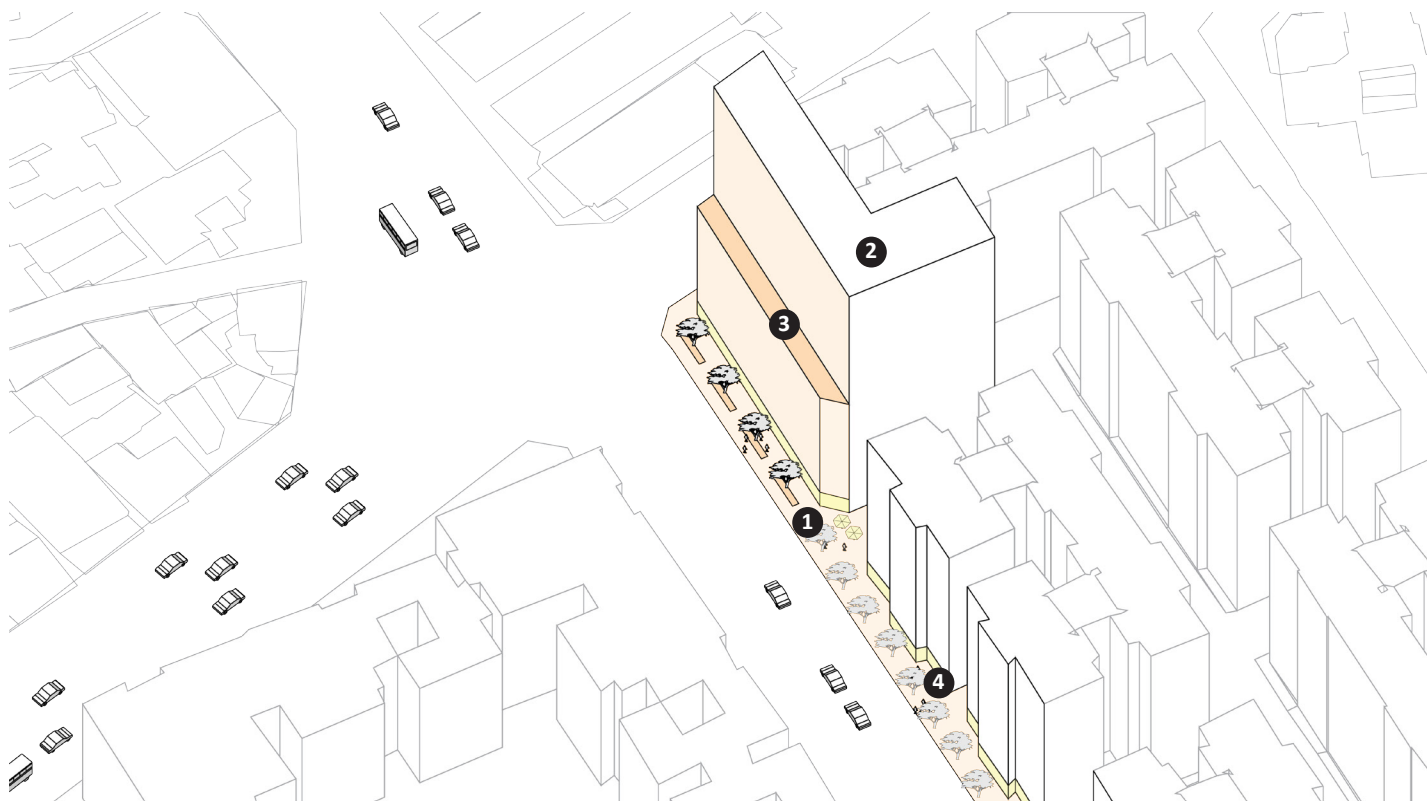
## Commerce in neighborhoods





Current street view

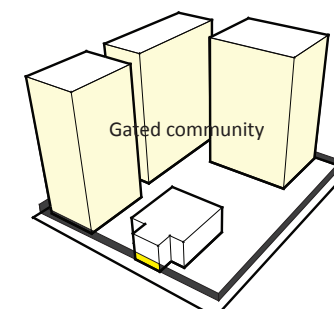
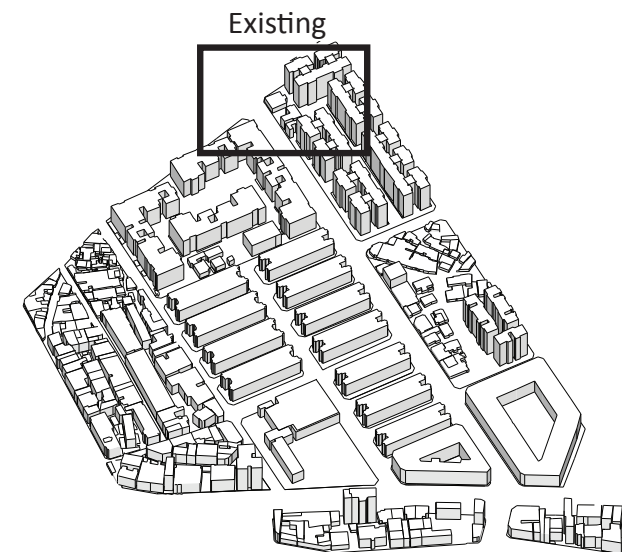


## Commerce in neighborhoods

Eye-level perspective

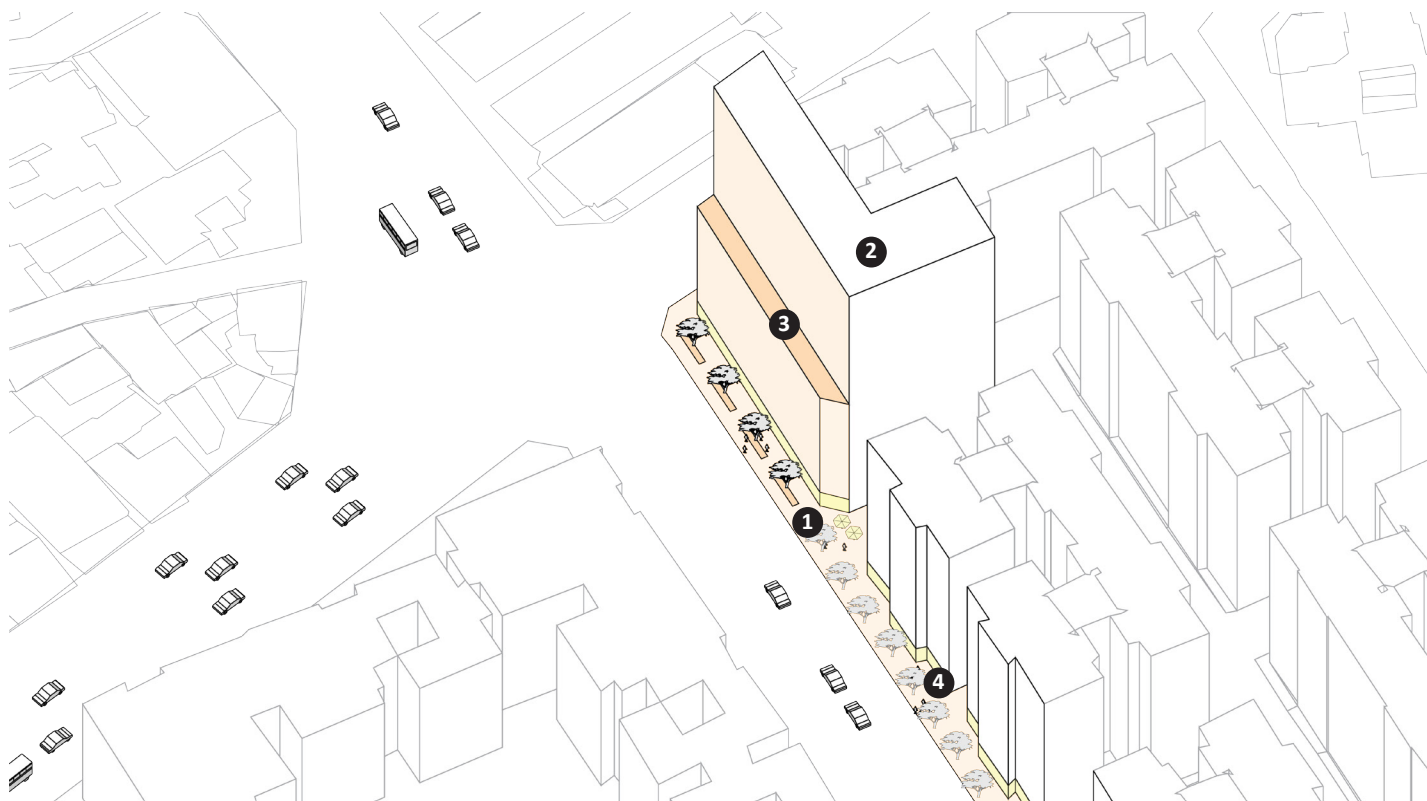






- 1  Lot assembly for certain size
- 2  Human scale design
- 3  Open space for the public
- 4  The between-block mixed-use development



## Separation of commerce and residence (Residence in the area)

Applying the rules

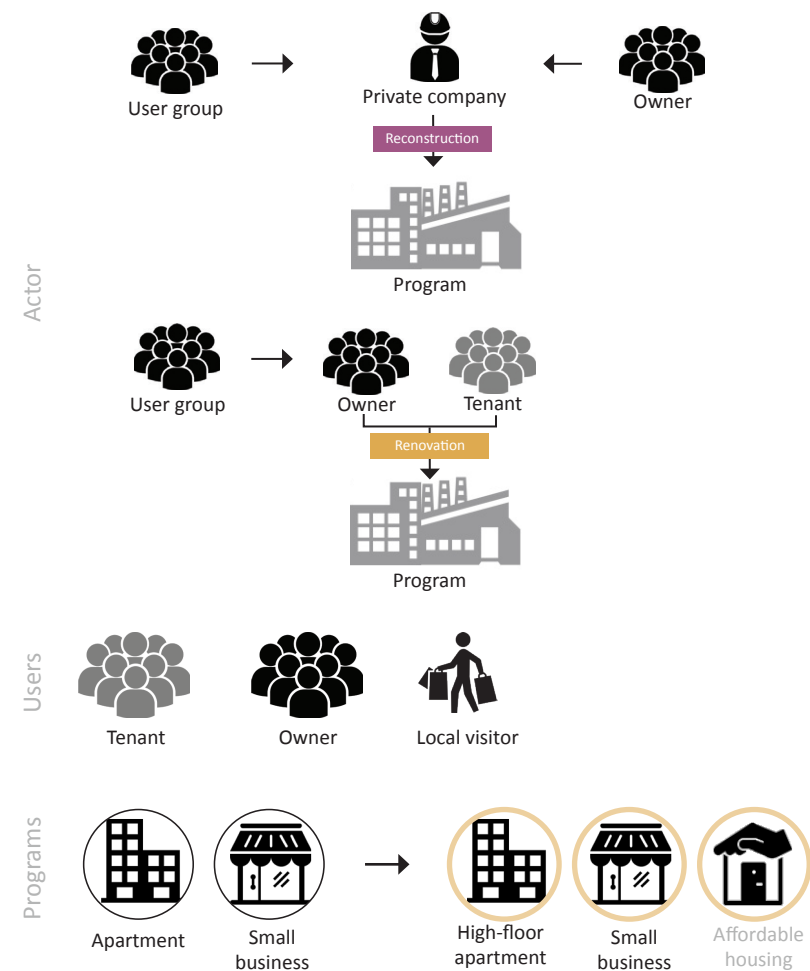


- 1  Lot assembly for certain size
- 2  Human scale design
- 3  Open space for the public
- 4  The between-block mixed-use development



## Separation of commerce and residence (Residence in the area)

Developing mode



CONTEXT

RESEARCH  
FRAMEWORK

STRATEGY  
& DESIGN

PROBLEM  
STATEMENT

ANALYSIS

CONCLUSION

租售

現代地產 房屋·土地  
軍宅·國宅·租售服務  
(銀行信託履約保證·交易零風險)  
熱線 0911-216-797 洽



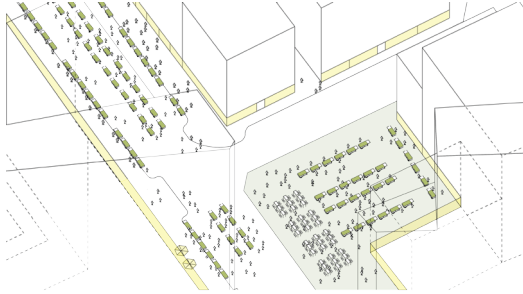
訂購專線  
0939-539672  
金幸福國際開發有限公司

## Typology

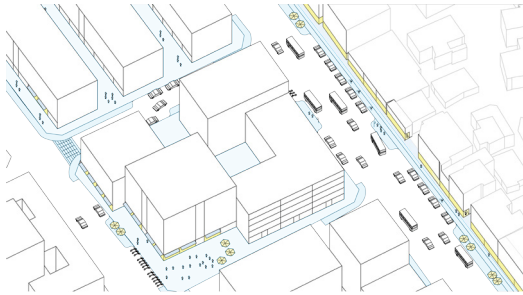
Radiant commerce



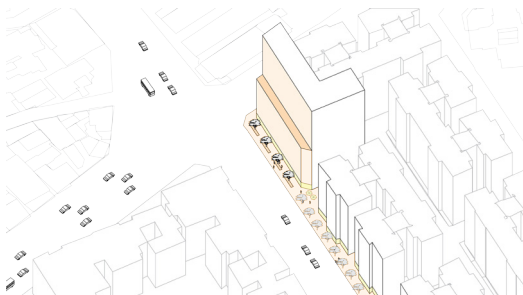
Linear temporary market



Commerce in neighborhoods

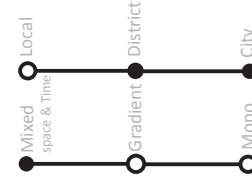


Separation of residence



## Characteristics

Service area

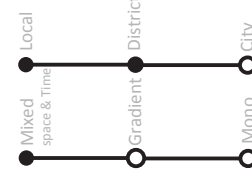


Disturb

Program



Service area

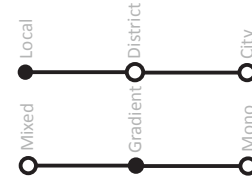


Disturb

Program



Service area

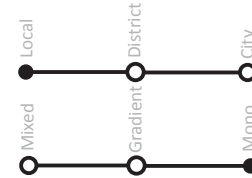


Disturb

Program



Service area



Disturb

Program



## Before & After

Amount of economic activity

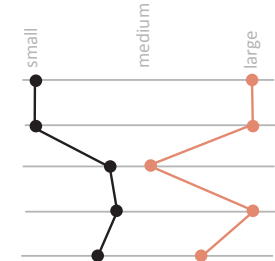
Level of diversity

Area of public space

Floor area

Ground coverage

\*considering informal extensions



Amount of economic activity

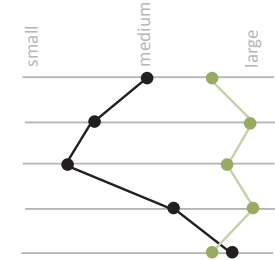
Level of diversity

Area of public space

Floor area

Ground coverage

\*considering informal extensions



Amount of economic activity

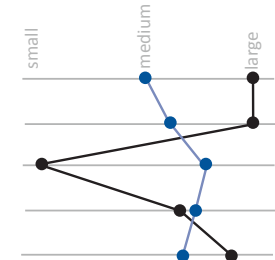
Level of diversity

Area of public space

Floor area

Ground coverage

\*considering informal extensions



Amount of economic activity

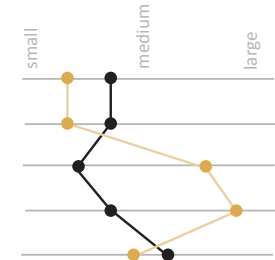
Level of diversity

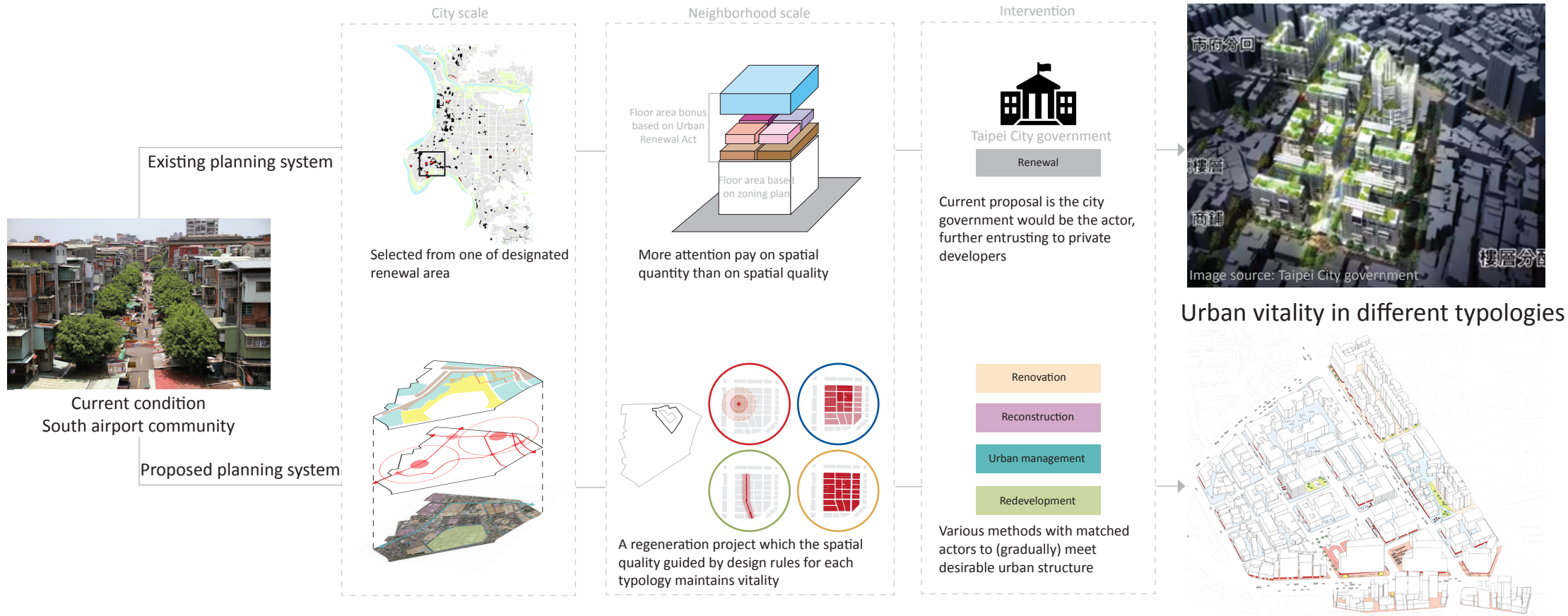
Area of public space

Floor area

Ground coverage

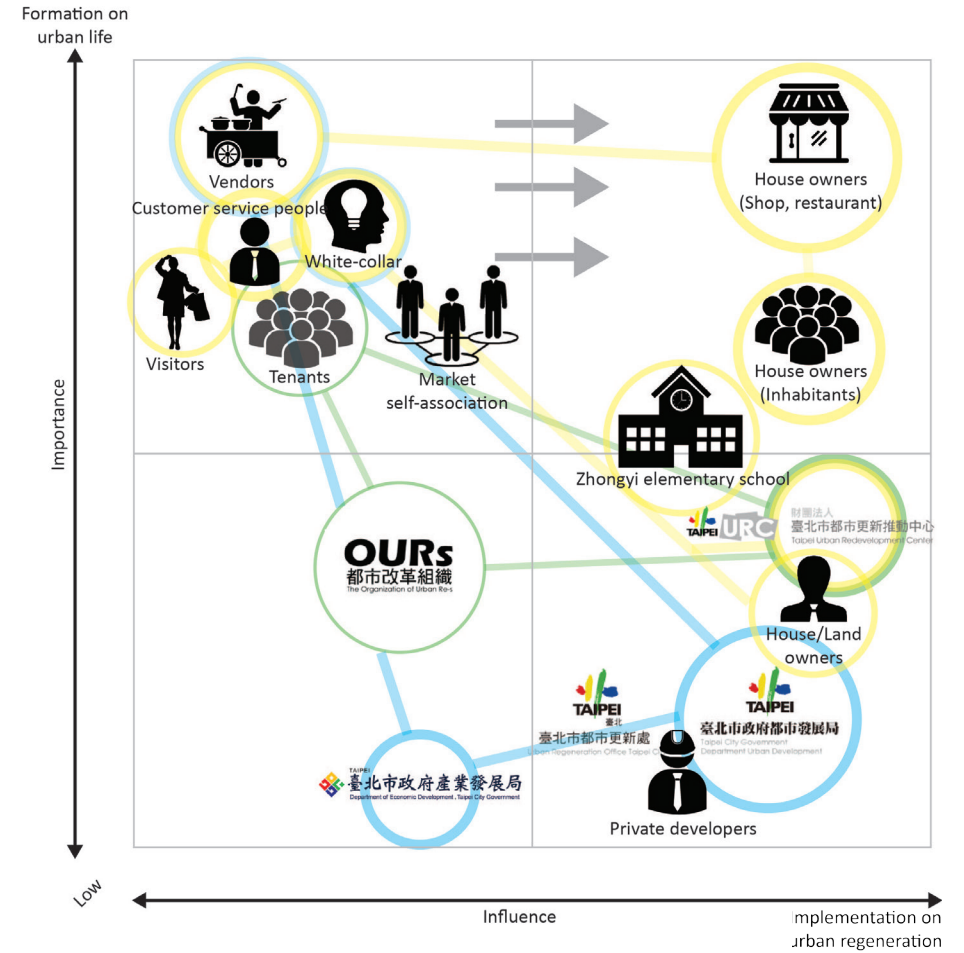
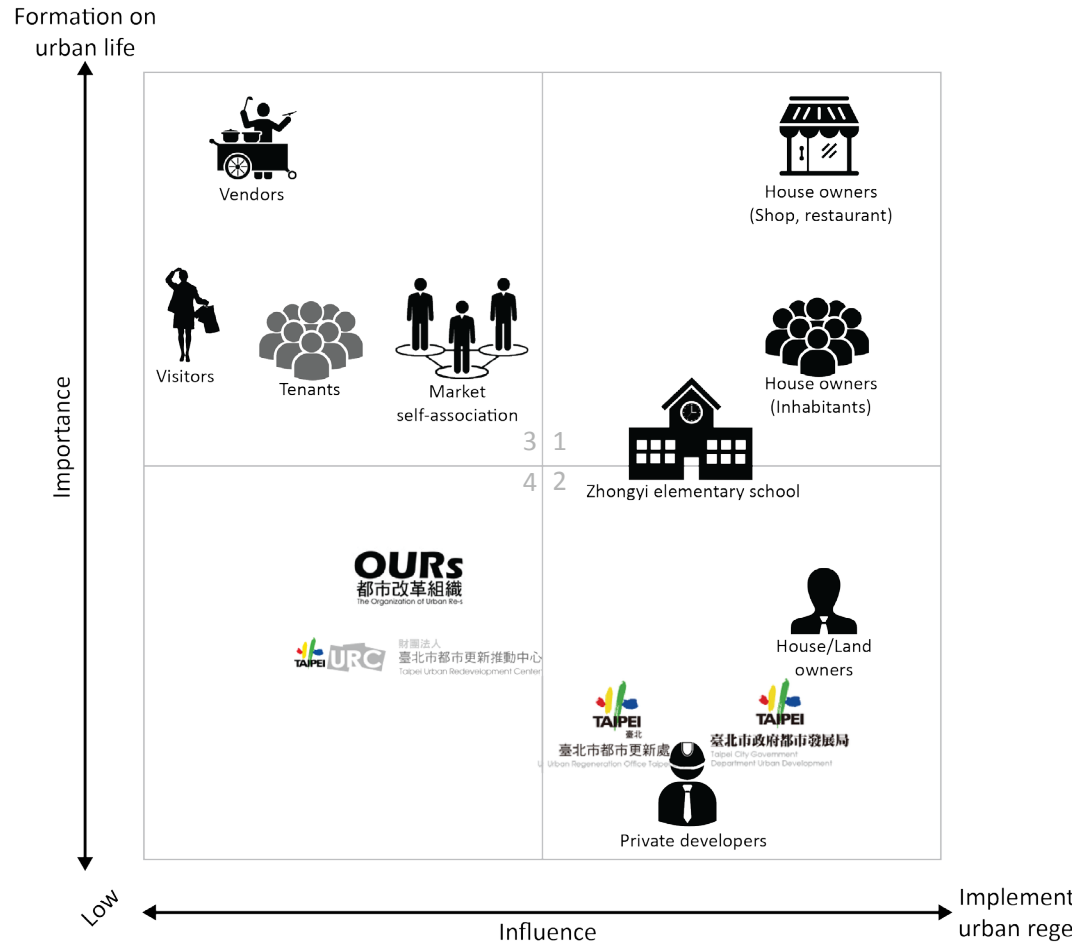
\*considering informal extensions





# Evaluation

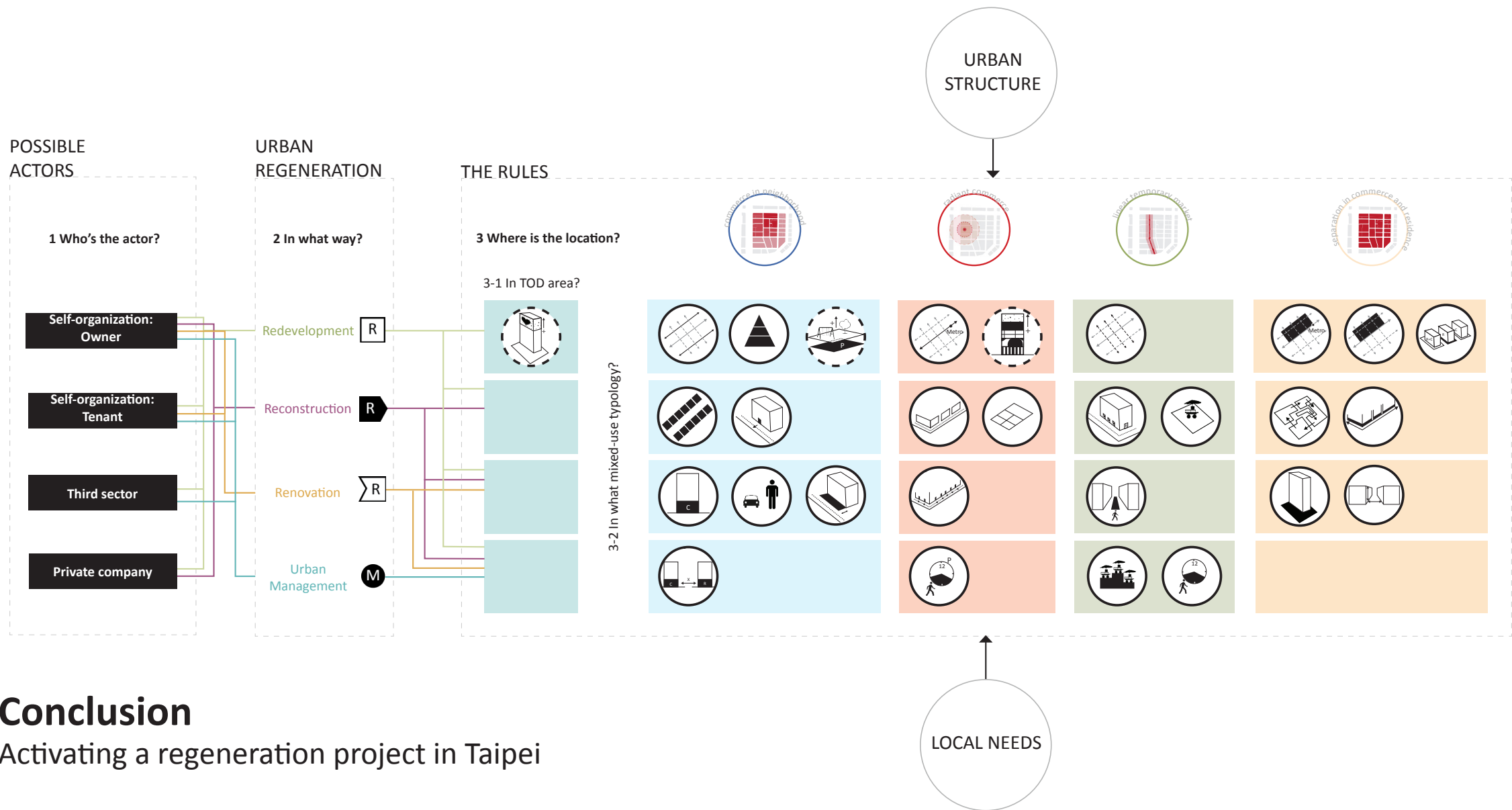
Comparision between existing & proposed planning system



## Evaluation

Transformed positions of the stakeholders

- Coherent relations between user group
- Empowerment on tenants/ vulnerable group
- Integration with economic development



## Conclusion

Activating a regeneration project in Taipei

- Develop coherent pattern among mixed-use typologies
- Adapt dynamic indicators for the rules in empirical research
- Apply the rules in city gaming during urban regeneration process



## Recommendation

Further research



**Thanks for your attention**  
Q & A