SZ+

From Shanzhai City to Maker City
Inclusion of Migrants in urban Redevelopment in Shenzhen

ACKNOWLEDGEMENT

FROM SHANZHAI CITY TO MAKER CITY

SHANZHAI CITY

TU Delft — Delft University of Technology

Urbanism

DESIGN AS POLITICS

MAKER CITY 1.0

MAKER CITY 2.0

REFLECTION

FROM SHANHZAI CITY TO MAKER CITY

🏢 Building

1. HAXLR8R B5
   · HAXLR8R is a 111-day startup accelerator program which is focused on providing hardware-based startups from ALL OVER THE WORLD with the appropriate support to deliver their concept into competitive reality!(Appointment needed)
2. Gaokede Communication Market 高科德 ☆ C2
   · (F3, F4: LCD Screen)
3. Duhui 100 都会100 (F4 Tools Market) ☆☆ · C4
4. Jiahe Huaqiang Building 佳和华强大厦 (F1—F3: Sensors) C5
5. Huaqiang Square 华强广场 ☆☆ · D3
   · F1:   Electronics Recommendation: Huafeng desk
     F2-3: Accessories for game player / PSP Game Player 🎮
     F4-5: Computer
     F6:   LED World 🔋🔋🔋
6. Haungqiang Building No. 1,2,3 华强1、2、3号楼 · D4
   · Components/Filters/Imported connectors/ ☆☆☆☆
     Sensors/Buttons-Recommend Hongbo's desk(F1: Q1A352)
     /Enclosures of Electronics can be found in Building No. 3
7. Guangbo Building 广博大厦 E2
   · (Mobile Phones/Digital-products/Computers)
8. Baohua Building 宝华大厦 E4
   · (Stage light/Audio/Cables (11)/Cellphone accessories)
9. SEG Building 赛格大厦 ☆☆☆☆ E4
   · (Commend components/Motor/Tools/Testing/ "Shanzhai" Arduino & R-Pi/Mini SMT) Sightseeing on loft: cost 40 RMB!! Here you can have an overview of Shenzhen.
10. Longsheng 龙胜 (Cellphone accessories) F3
11. Anfang Building 安防大厦 F3
    · (Security Modules/RFID/Camera) 🔦
12. Electronic Technology Building 电子科技大厦 F4
    · (Cable/Package/MP3/USB Flash Disk) *Not recommend

🚗 Traffic

13. Huaqiang Rd 华强路 -Metro Station ❎ D5
14. Huaqiang North 华强北-Metro Station ❎ D2
15. Economy Building 经济大厦 -Bus Station ▣ · D4
16. Zhenzhong Rd 振中路 -Bus Station ▣ F3
17. SEG Digital Square 赛格数码广场 -Bus Station ▣ E2
18. Shanghai Hotel East 上海宾馆东 -Bus Station ▣ D5

🛍 Shopping

19. Tianhong Shopping Plaza 天虹商场 B5
20. Letaoli 乐淘里 Basement of Huaqiang Rd D2
21. Manha Commerce Plaza 曼哈商业广场 E1

🍴 Food & Drink

25. Caigenxiang 菜根香 Spicy Food Restaurant 🅱🅰 F2
26. Mingxiang Seafood 明香海鲜 🅰 G3
27. Yoshinoya 吉野家 🅰 D5
28. Ajisen Ramen 味千拉面 🅰 E1
29. Cafe De Coral 大家乐 🅰 D4
30. Miandianwang 面点王 🅰 D2
31. Starbucks Causeway Bay Branch 铜锣湾广场分店 🅰🅱 .. F3
32. UBC Coffee 上岛咖啡 🅰🅱 · G3

🏨 Accommodation

33. Shanghai Hotel 上海宾馆 A4

🔧 Special

60. 🚇 "Underground" Market ...
    · It is one of the earliest Sha...
    Shenzhen. You may experi...
    Shenzhen Shanzhai phone...

⭐ Recommendation Levels

☆☆☆ **Must-go**

☆☆ **Highly Recommended**

☆☆ **Worth going**

☆ **Can have a look**

Icon Reference

Electronic Components	
Tools	
Structure (Cable/Shell/Resistance/ Capacitance/Chip__)	
Displays	
Battery, Mobile Power	

The story starts from one commercial area in Shenzhen named Huaqiangbei, where electronic markets agglomerate. In Huaqiangbei, every component of electronic devices could be easily found at cheap price. Popele are always saying that one iPhone could be easily assembled just at the expense around 100 euro here. Since it has a rich resource in term of hardware, this market attracts thousands of people coming here for business every day, even lots of businessmen from overseas. It earned a fame in the past twenty years for cheap, varieties and quality of electronic components. However, its influence does not limit to attracting businessmen involved in manufacturing production but also become a paradise for a special group people, makers. Makers are group people who love to create things in their spare time (often electronic, often with their own hands), also called Hobbyists. Most of them are involved in open hardware and hardware hacking electronics.

Figure 1.1 The maker map in Huaqiangbei

SHEN
The Silicon Val

(Wired, 2016)

ZHEN
...ley of hardware

of hardware could be told by one map (Figure 1.1(Seeed Studio)) made by Seeed Studio, which is the biggest hardware supply chain providers for makers. As this map shows, different electronic components, such as sensors, LCD screens, lights, accessories for game players and mobile phone accessories could be easily obtained in these markets. In the documentary produced by Wired Magazine UK, Huaqiangbei in Shenzhen is called as the Silicon Valley of Hardware (WIRED, 2016).

1.1 NEW PHENOMENON IN SHENZHEN

The growing number of Makers in Shenzhen contributes to emerging of Makerspaces in Shenzhen. Makerspace is the community center for makers who have common interests, often in computers, machining, technology, science, digital art and electronic art to meet, socialize and collaborate. The first makerspace in Shenzhen is called Chaihuo Makerspace which is found by Australian Maker, Mitch Davis and Hao Pan who is also the founder of Seeed Studio. This makerspace functions as incubator for people who are interested in hardware design (Ying et al., 2015). In 2015, president Li Keqiang visited this makerspace and thought it was a good example of "mass innovation" and "mass entrepreneurship" (two ideas he proposed during 2014 The summer Davos Forum).

Later State council released the Action Guidance on Developing Makerspace to Promote the Mass Innovation and Mass Entrepreneurship (The State Concil of the People's Republic of China, 2015). Corresponding to this action plan, Shenzhen government released the Three Year Action Plan on Promoting Maker Movement in Shenzhen from 2015 to 2017 after President Li Keqiang visited the Chaihuo Makerspace. Accordingly, Shenzhen Municipality Government aims to give an incentive to the development of makerspace through subsidy and expects to build 200 makerspaces by 2017(Shenzhen Municipal Government, 2015). After that, the number of makerspaces Shenzhen witnessed a sharp increase and majority of them locate in original SEZ (Shenzhen Economic Zone).

Categorized as new typology of innovation space by National Government, this maker movement in Shenzhen is used as economical tool for economic and innovation development. By integrating this makerspace in its innovation policy, Shenzhen government tries to increase its influence to international scope which means global city and creative city. Although innovation is the keyword when Deng Xiaoping set the mission of Shenzhen, it did not become the focus until Deng Xiaoping's second visit in Guangdong Province in 1990s. Shanzhai Culture in manufacturing especially in phone industry facilitated the building up of solid and complete manufacturing industry. At same time, industry change and innovation strategy in Shenzhen also influenced urban planning, which is used as functional and economic tool for urban development.
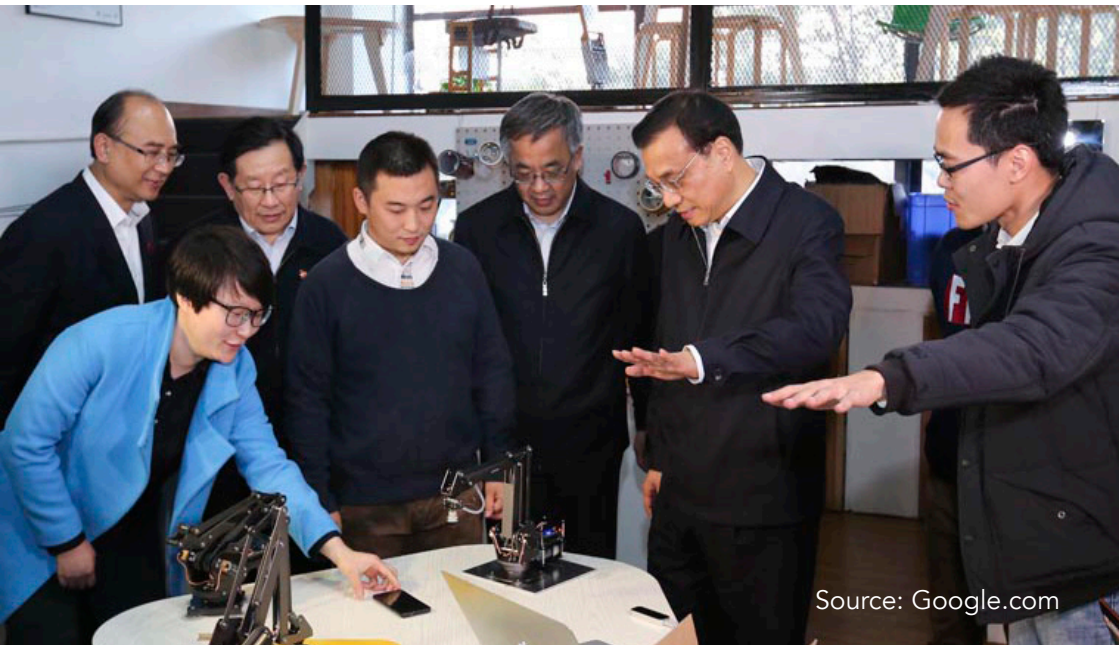
1978 — **SEZ** "A Window to Technology, Management, Knowledge and Foreign policy."

"三来一补" Three Plus One Model

1992 — **2ND VISIT OF DENG XIAOPING**

1994 — **SHENZHEN MASTER PLAN 1996–2010**

2006 — **NATION INNOVATION CITY**

2015 — **MAKER CITY**

INNOVATION

This emerging phenomenon provides a starting point for further discussion and in following content, the governmental vision change in history will be discussed first and later its influence on people mainly migrants. Then how urban planning and innovation policy responded to this governmental goal shift will be explained along with its spatial expression. These two aspects will lie in the macro scale discussion of urban development. After this scale discussion, micro scale discussion related to urban redevelopment mechanism will be explored and directly linked to people and the space where they live. The meso scale is the scale this research will tackle, however, is missing in current urban planning.

1.2 INNOVATION CITY, NEW CITY VISION

In 1978, SEZ was established as the window to the world, which was expected to become the bridge of world and inland China. At that time, Deng Xiaoping set the mission of Shenzhen, as "a window to technology, management, knowledge and foreign policy. Through the zones, we can import technology, acquire knowledge, and learn about management, which is also a form of knowledge" (Koolhaas et al., 2001). However, until 1994 the Shenzhen Master Plan, High Technology Industry was not emphasized by Shenzhen Government. Since 1980, 'three-plus-one' trade model which mixes custom manufacturing with materials, designs or samples and compensation trade facilitated the industrial development and industrialization process in Shenzhen.
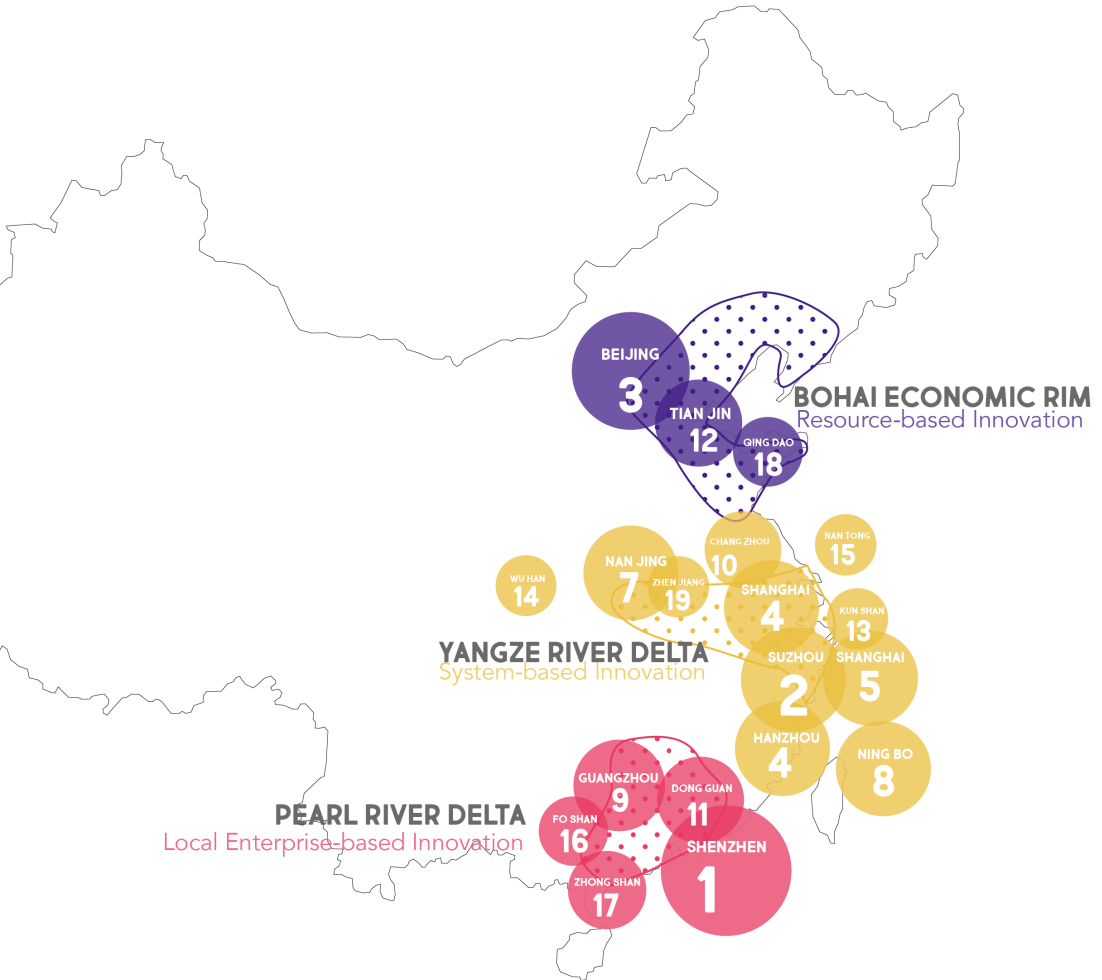
NATIONAL INNOVATION CITY RANKING

BEIJING
3

TIAN JIN
12

QING DAO
18

BOHAI ECONOMIC RIM
Resource-based Innovation

NAN TONG
15

NAN JING
7

ZHEN JIANG
19

CHANG ZHOU
10

WU HAN
14

SHANGHAI
4

KUN SHAN
13

SUZHOU
2

SHANGHAI
5

YANGZE RIVER DELTA
System-based Innovation

HANZHOU
4

NING BO
8

GUANGZHOU
9

DONG GUAN
11

FO SHAN
16

SHENZHEN
1

PEARL RIVER DELTA
Local Enterprise-based Innovation

ZHONG SHAN
17

Figure 1.2 Innovation City Ranking in China

source: Forbes China, 2016

During that period, majority of investors in Shenzhen were from Hong Kong seeking for low land cost and cheap labor forces. Later when facing the challenge from loss of advantages in policy and expense in term of industry, the experimentation spirit and geographical proximity to Hong Kong gave Shenzhen an opportunity to change from Foreign Based Investment Model to Innovation Based Model. Shenzhen sets the urban vision of National Innovation City from 1994 and local enterprises became dominant as the result of government's innovation strategy in facilitating R&D development. It was reckoned as the first innovation city by National Government in 2006 indicates a new innovation development trend and local companies such as Huawei, Tencent became giants in their business scopes benefiting from the governmental policy (You et al., 2011).

As Figure 1.2 indicates, Shenzhen ranks the first by Forbes China in term of innovation development in 2016 and pearl river delta where it locates is stated as local enterprise based innovation model, which is in alliance with local government's strategy. President Li Keqiang proposed two ideas on innovation, "mass innovation"(大众创新) and "mass entrepreneurship"(万众创业) in 2014 and he visited one makerspace named Chaihuo Makerspace in Shenzhen one year later. After his visit, he stated that "Making and creating is no longer a privilege reserved for the elites but an opportunity afforded to the greater majority".
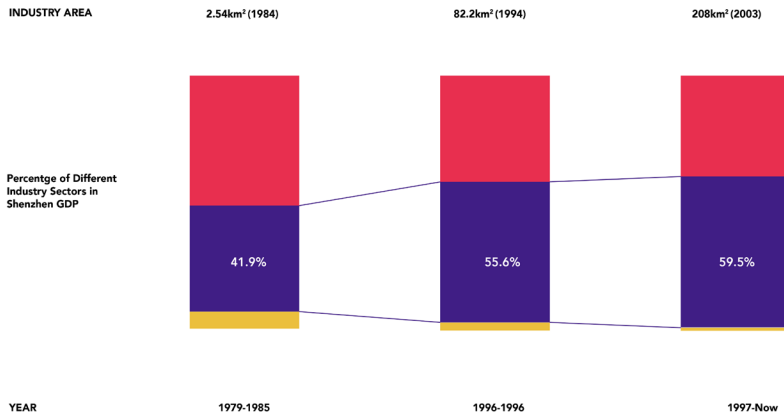
Figure 1.3.1 Percentage of Different Industry Sectors in Shenzhen GDP

Accordingly, Shenzhen government later released Action Plan on Promoting Development of Makers in Shenzhen from 2015 to 2017 which aimed at building 50 makerspaces each year and reaching 200 makerspaces in total by 2017(Shenzhen Municipal Government, 2015). This ambitious objective goes with the new regeneration projects agenda in Shenzhen which aims at changing the function of 30 km2 land in whole Shenzhen area and 12.5 km2 of them will be in old industry area and urban villages (Shenzhen Planning Bureau, 2016).

This gentrification process of city shows the space demanding in term of attracting new people, high technique industry and new space for innovation city development. However, it also leads to the social-economic transformation which has close linkage to rural migrants population in Shenzhen. Shifting employment base and urban space transformation foster the process of social exclusion while rural migrants are forced out of the city center. What is happening is totally contrast to what Shenzhen Government was always marketing itself in the past 30 years.

1.3 CITY OF COMINGS AND GOINGS

30 years' urban development in Shenzhen witnessed the both population and industry change and now Shenzhen becomes an emerging global city in China and it is famous for its huge number of migrants in China even worldwide. However, it is not a migrant city 30 years ago. In 1979, population of Shenzhen was just about 314.1 thousand people, of which 0.48% is migrants. 35 years witnessed the dramatic urban change in Shenzhen and population of it reaches 10.78 million, of which 69.6% is migrants now (Shenzhen Statistics Bureau, 2015). Benefiting from such demographic dividend, economic development of Shenzhen city enjoys a remarkable increase but also brings the challenge to urban management. There is one famous slogan in Shenzhen, "once you come Shenzhen, you become a Shenzhener". Such marketing slogan initialed by Shenzhen Government creates a good image that Shenzhen is a migrant friendly city as Image indicates.
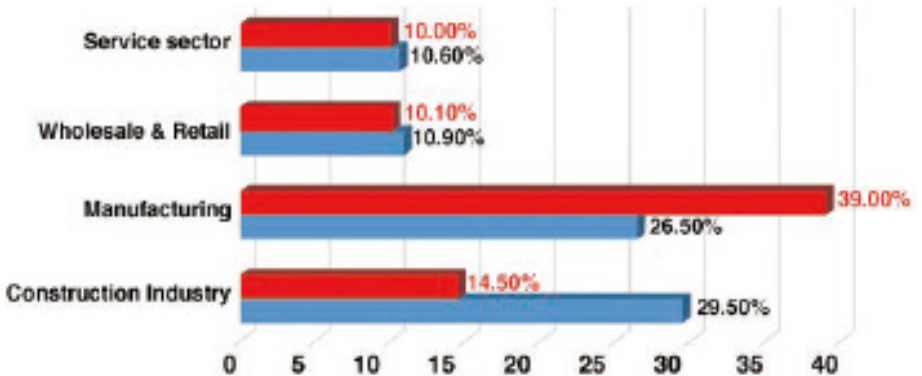
SHANZHAI　　　　**DIY**　　　**AMATEURISM IN INNOVATION**　　**'DESIGN-IN-CHINA'**

SIMPLE MANUFACTURING　　　　HIGH TECHNOLOGY　　　　INTERNET COMPANY　　　　STAR-UPS

VR
SMART PHONE **3D PRINT**
SMART HARDWARE

1980'S　　　　　1990'S　　　　2010'S　　　　NOW

(Tam, 2016)

SHANZHAI CITY

The term Shanzhai originally referred to cheap copycats of brand products and electronic devices, particularly mobile phones that took the name of ai-phone, Nakia and Samsong, but is now increasingly applied to the entire Open Manufacture system developed in Shenzhen in the last thirty years as an ad-hoc model based on easy and open access to electronic components, ready to produce key solutions 'open boards' and a network of relationships and providers(Tese and Huang, 2009).

INDUSTRY

INNOVATION

Nevertheless, this image changed with the governmental vision shifting from FDI-led to Innovation-Led. This transformation could be both observed from transformation of industry structure in Shenzhen and also comparison of employment base of old/new generation of migrant workers. The figure 1.3.1 indicates the three different phases in Shenzhen Urban Development and we could clearly see that the industry area is increasing along with its take-up in total GDP of Shenzhen. Service Industry is expected to increase because of blessing from the new urban planning vision but still less than the manufacturing industry. Moreover, generation shift happened in work-force of Shenzhen while over five million migrants are under 30-year-old taking up 66.1% of migrant of Shenzhen (Wang, 2014). This happens not only in age distribution but also in employment base as Figure 1.3.2 shows. People working in manufacturing is sharply increasing among new generation migrant workers while working in construction industry becomes a less favorable choice (Shenzhen Statistics Bureau, 2015).
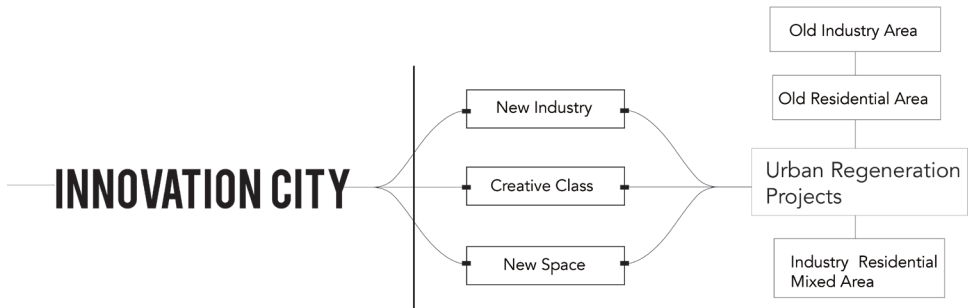
(Shenzhen Government, 2010)

Figure 1.4.1 Innovation Vision Change in Shenzhen

1.4 SHANZHAI, THE KEY IN MANUFACTURING OF SHENZHEN

With such population change, the industrial transformation in Shenzhen is gradually shifting from simple manufacturing in 1980's, such as TV or Radio to high technology such as mobile phone. Later during 2000's, local technology companies start to boom up until now Shenzhen government intends to bring more technology start-ups in, relating to Virtual Reality, 3D printing and Smart Hardware, et.al. The entire evolution of Innovation models in Shenzhen faces four different stages, from copycat (late 90s), to DIY culture (early 2010s), to amateurism in innovation(2010s), and ultimately to the so-called 'design-in-China'(now) as Figure 1.4.1 shows.

Shenzhen owns a rich resource of cheap and good quality hardware which makes the industry connection easier compared to developed countries where manufacturing is outsourcing to developing countries and IT industry is well developed. The shifting from manufacturing to High-Technique Industry has a close relationship to the existing grassroots model in Shenzhen named Shanzhai model. When Shenzhen municipal government decided to upgrade the industry, Shanzhai which means copycats of brand products and electronic devices and but in much cheaper prices, especially in phones market where Nokia and Samsung are always become the target, became a widespread phenomenon in Shenzhen. Shanzhai Innovation at that time means easy copycat of successful goods in market (David, 2014). 30 years witnessed the widespread of Shanzhai Model from electronic devices market to whole manufacturing industry. Meanwhile, it goes beyond production as Lam (2016) emphasized, "Shanzhai model is increasing by applied to the entire open manufacture system development developed in Shenzhen as an ad-hoc model based on easy and open access to electronic components, ready to produce key solutions 'open boards' and a network of relationships and providers. It is more than copycat and products made by that way are even better than original brands". Benefiting from this Shanzhai model, Shenzhen is so called "Silicon Valley of hardware" (2016) in the documentary published by Wired which indicates the rich resource of hardware in Shenzhen after years of manufacturing development.

1.5 SHANZHAI COMMUNITY

Although Shanzhai model is supposed to be the main driver of transforming the aging manufacturing into advanced industry production, two main group of this maker movement, one consists of entrepreneurs and companies who used to base on a copycat strategy of brand products, and the other a more international-oriented maker community do not share same values in this process. They are supposed to use the value of "open innovation". In fact, Rare collaboration happens between these two communities. For Shanzhai community, this kind of open innovation means "total deregulation and a kind of coopetition that poorly masks fierce competition" when makers still struggle with 'open' and 'closed' commons (David, 2014). These two values are somehow merged by official definition of maker which would more functional and manufacturing based. However, this could be an opportunity for future development of maker movement in China about the value of open innovation.

CONCLUSION

Governmental vision change influenced the indsutry structure and employment base of migrants, however, brings the opportunity of grassroot innovtion model which is called Shanhzai Model. However, in macro scale, rural migrants are not welcomed by Shenzhen municipal government in term of education level, skill they obtained and high mobility.

Urban Development Path in the past 30 Years

HONGKONG
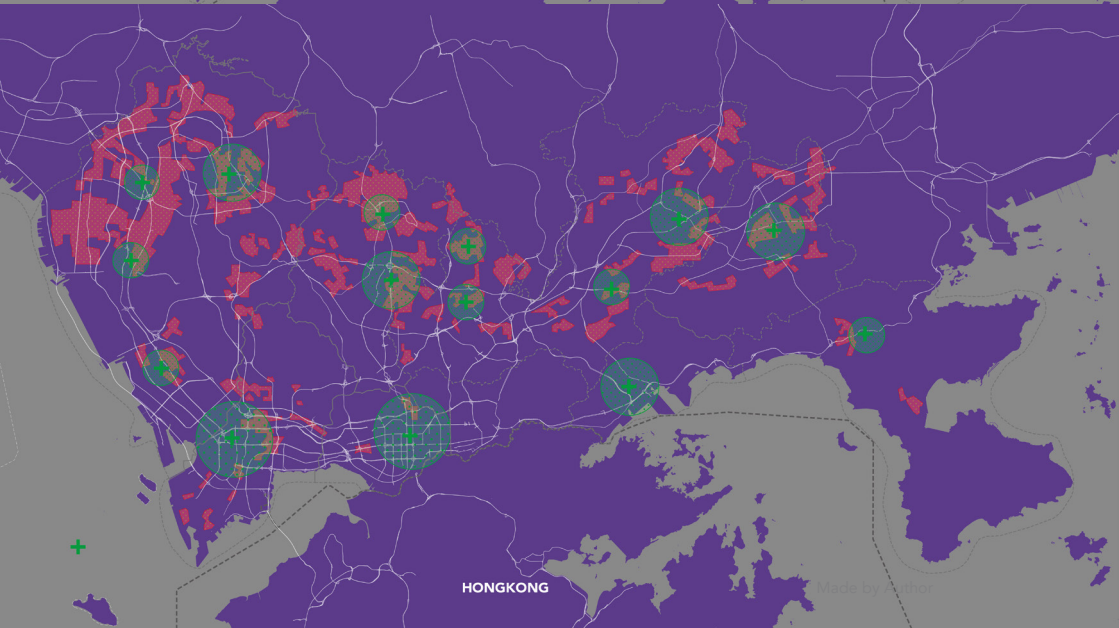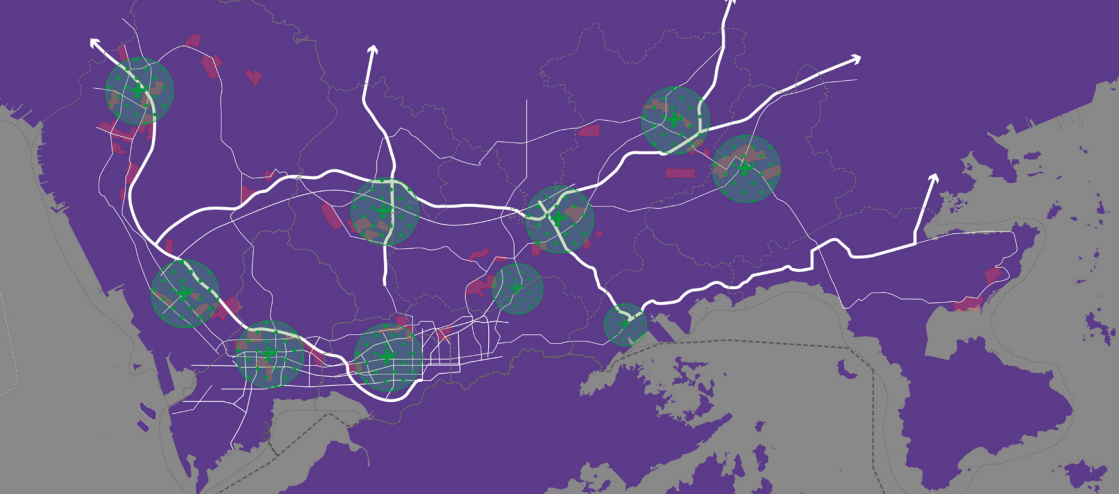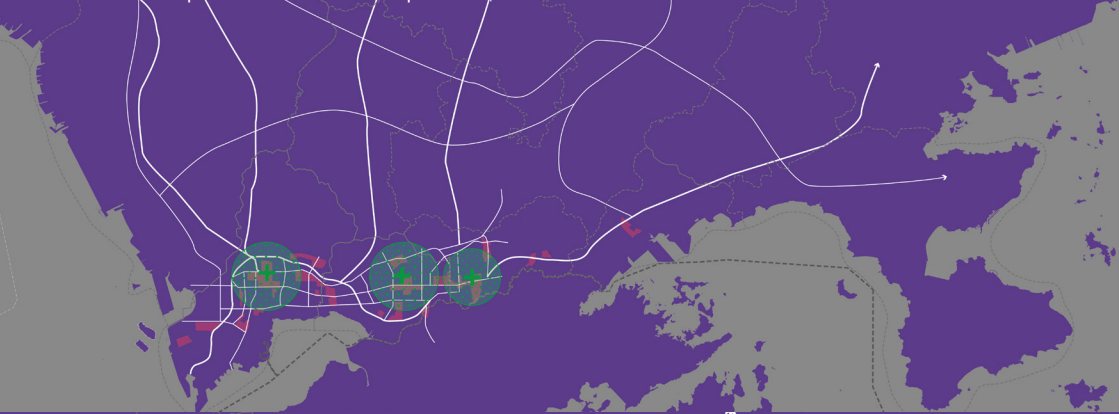
1.6 URBAN PLANNING, THE DRIVER OF SOCIAL ECONOMIC TRANSFORMATION

Meanwhile, Urban planning was applied as the main tool to foster the industry upgrading and transformation. Shenzhen economic zone is a political decision and is often cited as a modern miracle. Certainly based upon all economic indicators and the popular visual representations, Shenzhen seems to be a city with standard modern qualities that transformed from the "land of fish and rice" into its glittering present form all within two decades. From an urban planning point of view, Shenzhen's first and successive Comprehensive Master Plans are based on classical Soviet-influenced centrally controlled master planning. The rigid formal planning resulted in an essentially linear city along a single coastal transportation spine named Shennan Grand Boulevard(Du,2010).

The original 1986 Master Plan of Shenzhen Special Economic Zone planned for a population of one million by the year 2000. The 1989 Comprehensive General Planning Modification of Shenzhen Special Economic Zone tried to keep up with faster-than-predicted growth by changing the planning to accommodate for 1.5 million residents. Yet the population of Shenzhen stood at ten million in 2000 (Du, 2010). Shenzhen City starts growing from SEZ but Shenzhen government did not expect that it could grow so fast. Block and zoning were used as main spatial design element for guiding the urban growth of the city in the very first planning and industry park which is originally from the

Torch Program has been implemented as a innovation property model for changing the function of city. It represents "a pluralistic urban environment of natural and man-made scenic wonders built according to the function of the block"(Koolhaas et al., 2001). However, this zoning system continues being applied in following urban master-plan which is purely functional and economy driven.

1.7 INFRASTRUCTURE AS PLANNING ELEMENT

Later Shenzhen started developing city to follow the main infrastructures. So main infrastructures were used as main extension tools to develop city and later small centers were designed along the main roads. Also industry typology follows this trend by main infrastructures from city center to periphery area. Meanwhile, it gave an indication that rural migrant workers follow this trend to go from city center to periphery areas. High speed urban expansion leads to the fast urbanisation of agricultural lands and left only village lands, later becoming urban villages in these new centers which could be clearly seen from the map 1.7. Mixture of industry and urban villages in these center has a profoundly negative impact because the strict speperation of prodcution and live leads to almost no vitality in these city centers. Infrastructure provides the guidance for larger framework and barely public space and small scale urban planning and design are considered (Li, 2016).

Urban Structure of Shenzhen in Different phases
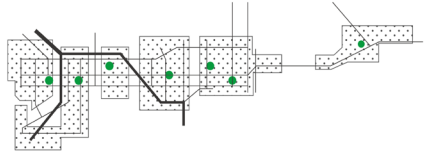
Urban Structure of Shenzhen SEZ 1986
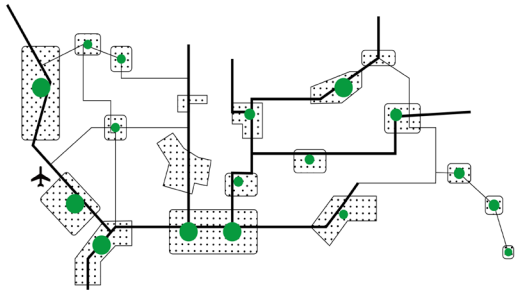
Urban Structure of Shenzhen SEZ 1996
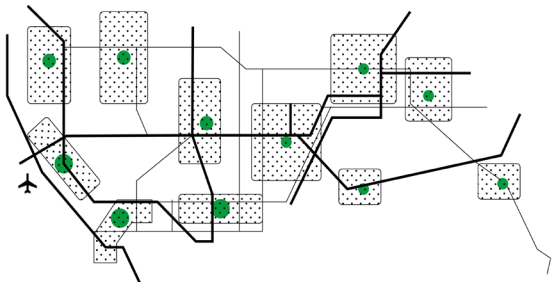
Urban Structure of Shenzhen SEZ 2010

MAP OF URBAN VILLAGES DISTRIBUTION IN SHENZHEN

N

0   10   30   60mm

12km
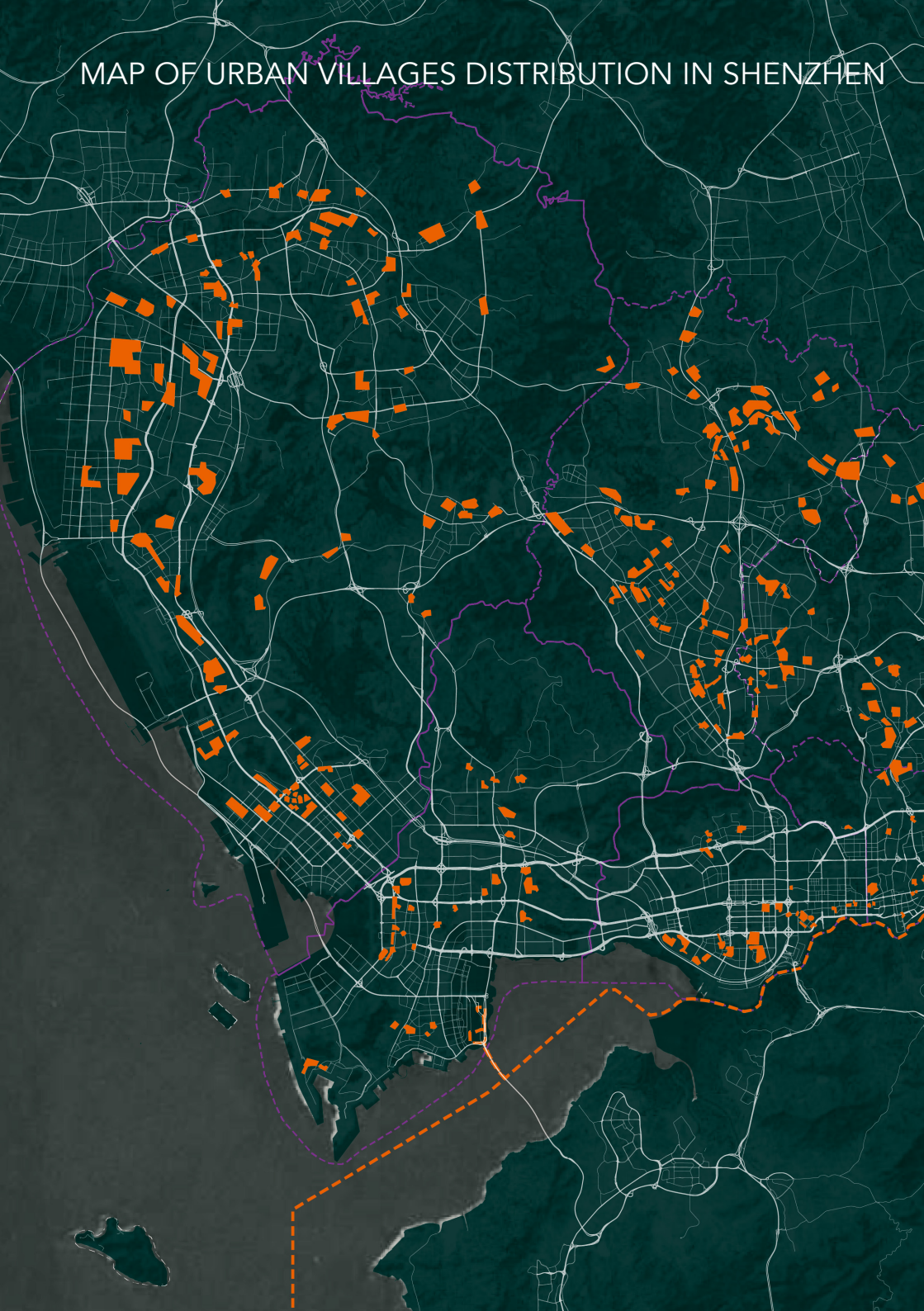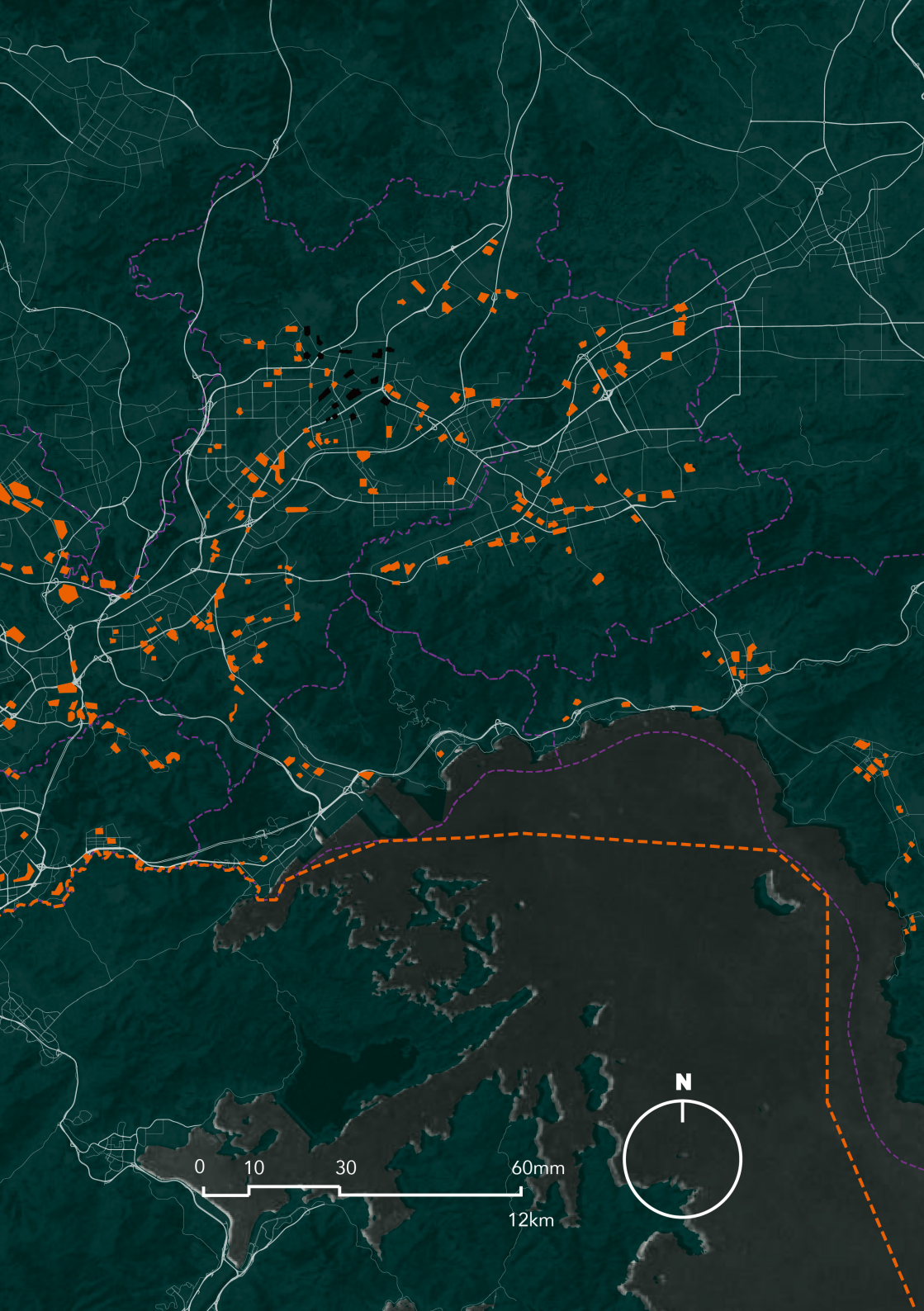
creative districtes mainly exisit in the old city district as urban regeneration projects. Later it does not really work in fostering the innovation development national wide, more relating to bussiness and commecial purpose. It does give certain urban vitality to city and this commecial atosmephere brings commecial activities and tourists.

Widespread grassroots experimentations are represented in the third level of innovation activities. It is typified by adaptive activity in non-commercial sphere. Much of the activity currently occurring in online communities is not aimed at profiteering, but rather functions as informal and amateur incubation. The third level is conspicuous by its risk culture. It is this willingness to take risks that makes it an incubator for the market. Networked social communities are sites of rapid experimentation, drawing on the ingenuity. Success of this level is not measured by economic success but by its impact. Maker movement apparently lies in this level of innovation and it brings new type of space in city center for community building (Keane, 2016).

1.8 REVIEW OF HISTORY OF INNOVATION POLICY

1988, The Torch Program. National government intended to promotion innovation through establishing Science & Technology Park, Software Park, Science-Tech Business Incubators and Productivity Promotion Center (Keane and Zhao, 2012).

This phase is the first level of innovation

activities in China and the ideology behind these policies is centralization of intellectual property and advocating collective thinking. Such ideology is reflected on the industrial blocks which is normally gated and fenced to prevent integration.

2006, National Government released Middle and Long-term National Plan for Science and Technology Development 2006-

2020. In this national plan, three different types of innovation methods have been mentioned(Saunders and Kingsley, 2016).
-Original Innovation
-Integrated Innovation
-Re-Innovation Based on Assimilation and Absorption of Imported Technology

This policy indicates that China's national innovation system struggles to balance its need to utilize source of technology with a desire to nurture home grown innovation. Later, booming of "cultural and creative industries" led to rising number of urban regeneration projects national wide. However, innovation in that phase as mentioned before has close relationship to business and prefer safe model without bringing new ideas in. It indicates the trend decentralization of intellectual property.

2008, China started to advocate the S&T centered initiatives regarding entrepreneurship centric innovation projects.

2014, Two ideas were proposed by Present Li Keqiang, Mass Entrepreneurship and Mass Innovation. These slogans on innovation

indicates national government tends to link grassroots makers to national wealth(Bound and Saunders, 2016).

2015, Li Keqiang stated, "Making and creating is no longer a privilege reserved for the elites but an opportunity afforded to the greater majority of people." Although mass entrepreneurship contributes to open innovation and makes innovation available to grassroots actors, national attention on makers kind of formalized makers movement.

Meanwhile, 06/2015 Shenzhen government realized Action Plan on Promoting Development of Makers in Shenzhen from 2015 to 2017.

With the change of innovation policy in China, the way how public could access to innovation has also been transformed. Zoning still plays an important role in urban development and especially innovation district for innovation development is only available for people who have permission for entering. This approach indicates that government seriously controlled the innovation resource and imposes this collective way of thinking for national benefit. Later, industry parks and science parks are built for business purposes and tend to be safe and profit based. However, it indicates the shifting from collective thinking to individual thinking. The appearance of makerspace actually liberates the people from mass production and empower the people through. When government tries to promote individual thinking though this maker movement, it is for economic purpose which tries to connect individual wealth to national wealth through liberating the internal capital and ideas from Chinese individuals.

In current regional development, urban planning is the main driver of space transformation through infrastructure and industry park development, bringing in new space and new function. However, new innovation space is emerging in city which is makerspace benefiting from Shanzhai culture in Shenzhen. Ideology behind this new space is conflict with the current planning appraoch which is collective based for collective wealth. When Shenzhen government tries finance the devleopment of makerspaces, is space approach such as desing principles needed for that? What is the role of urban planning and design could play in it?

In order to answer these questions, urban structure, the urban regeneration model and typology in Shenzhen will be disccussed.

SUCCESSION OF INNOVATION

FUTURE

IDEOLOGY	SPACE	POLICY	PERIOD	YEAR

MAKER SPACE

2015

XI JINPING

"MASS ENTREPRENEURSHIP" AND "MASS INNOVATION"

2008

HU JINTAO

MIDDLE AND LONG-TERM NATIONAL PLAN FOR SCIENCE AND TECHNOLOGY DEVELOPMENT 2006-2020

2006

Individual Thinking

JIANG ZEMING

1993

SCIENCE PARK

THE TORCH PROGRAM

1988

DENG XIAOPING

Collective Thinking

ZONE

SEZ ESTABLISHED

1974

(WANG, 2016)

MAP OF INNOVATION SPACE IN SHENZHEN
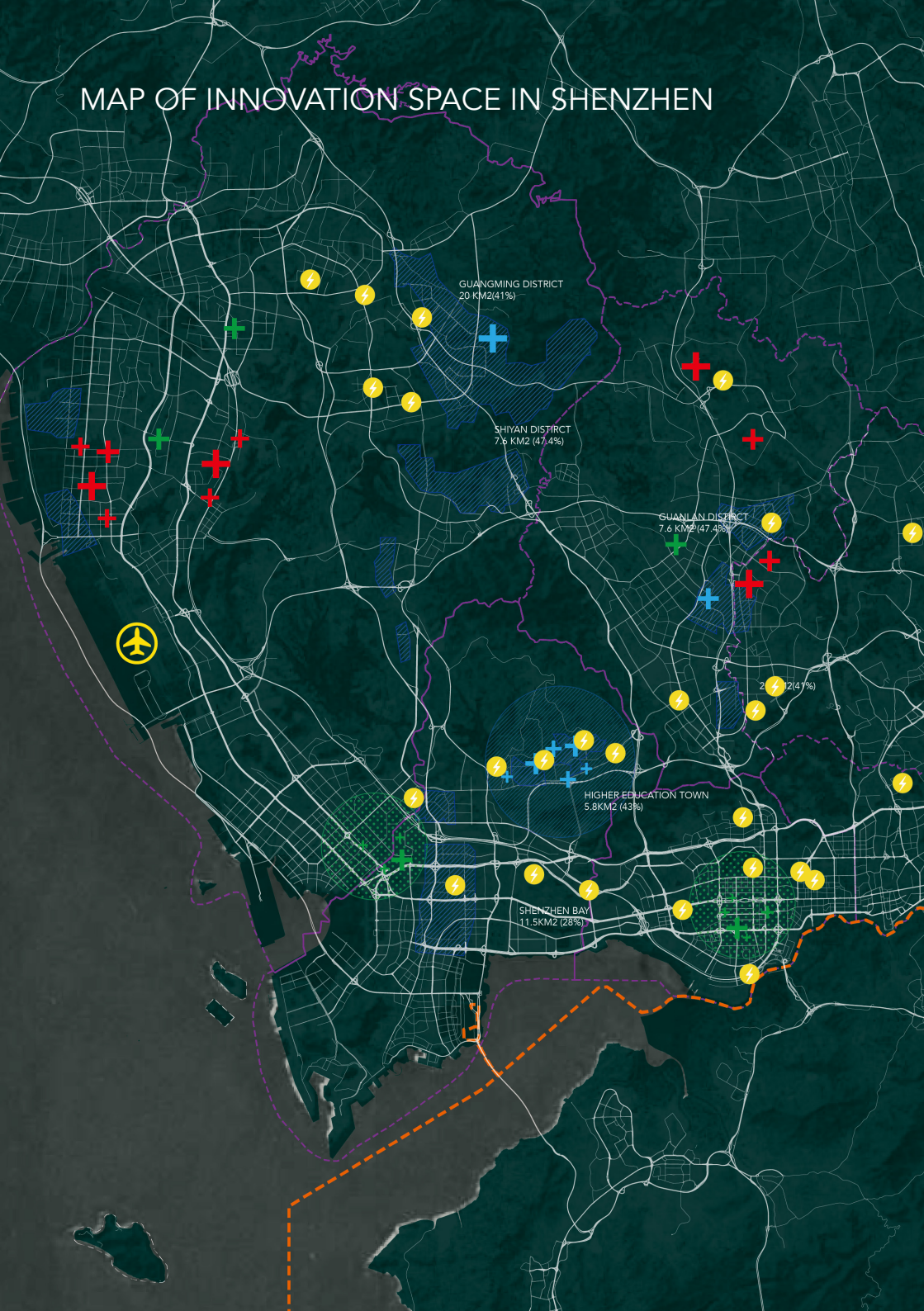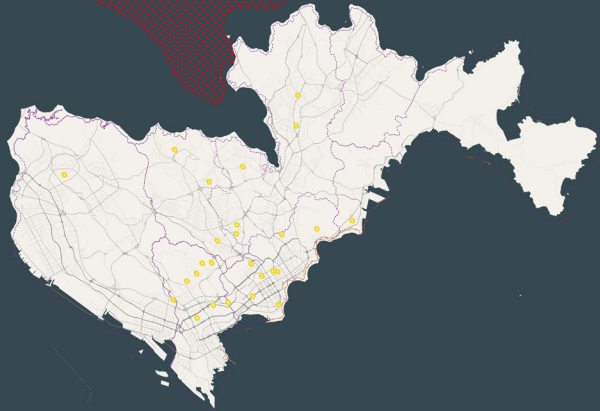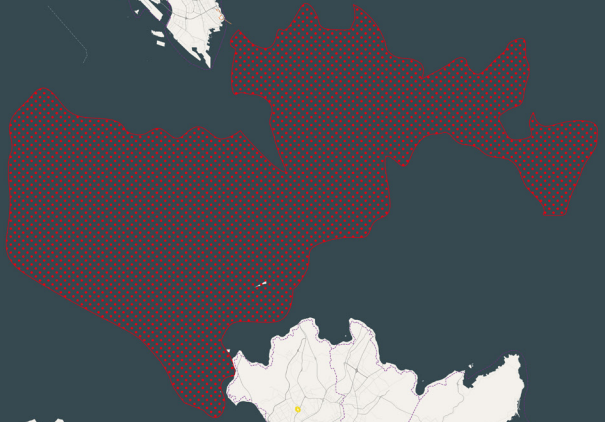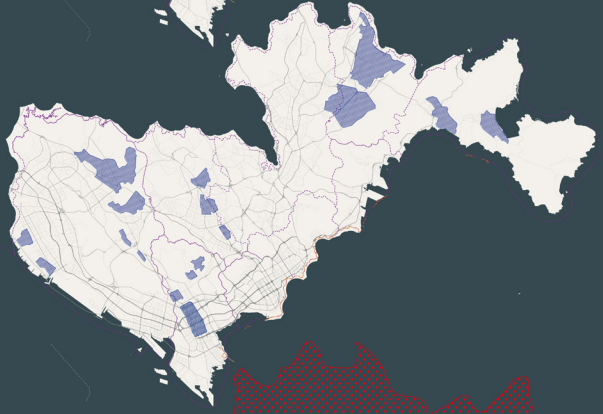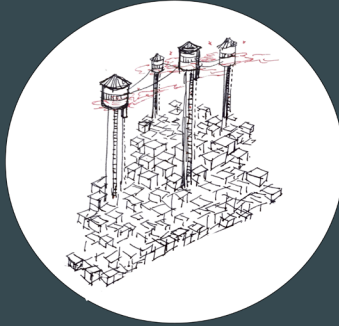
GUANGMING DISTRICT
20 KM2(41%)

SHIYAN DISTIRCT
7.6 KM2 (47.4%)

GUANLAN DISTIRCT
7.6 KM2(47.4%)

HIGHER EDUCATION TOWN
5.8KM2 (43%)

SHENZHEN BAY
11.5KM2 (28%)

GUANGMING DISTRICT
20 KM2(41%)

GUANGMING DISTRICT
20 KM2(41%)

GUANGMING DISTRICT
20 KM2(41%)

N

0   10   30   60mm

12km

LAYER ONE

RESEARCH INSTITUTES
HIGHER EDUCATION INSTITUTES

LAYER TWO

SCIENCE TECHNOLOGY PARK
SOFTWARE APRK
SCIENCE-TECH BUSSINESS CENTER
PRODUCTIVITY PROMOTION CENTER

GAP
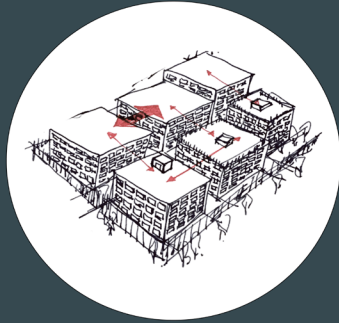
WHAT GOVERNMENT NEEDS
WHAT PUBLIC NEEDS
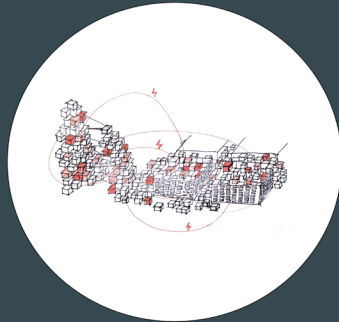
LAYER THREE

WIDESPREAD GRASSROOTS   EXPERIMENTA-
TION, FOR EXAMPLE, MAKER SPACE
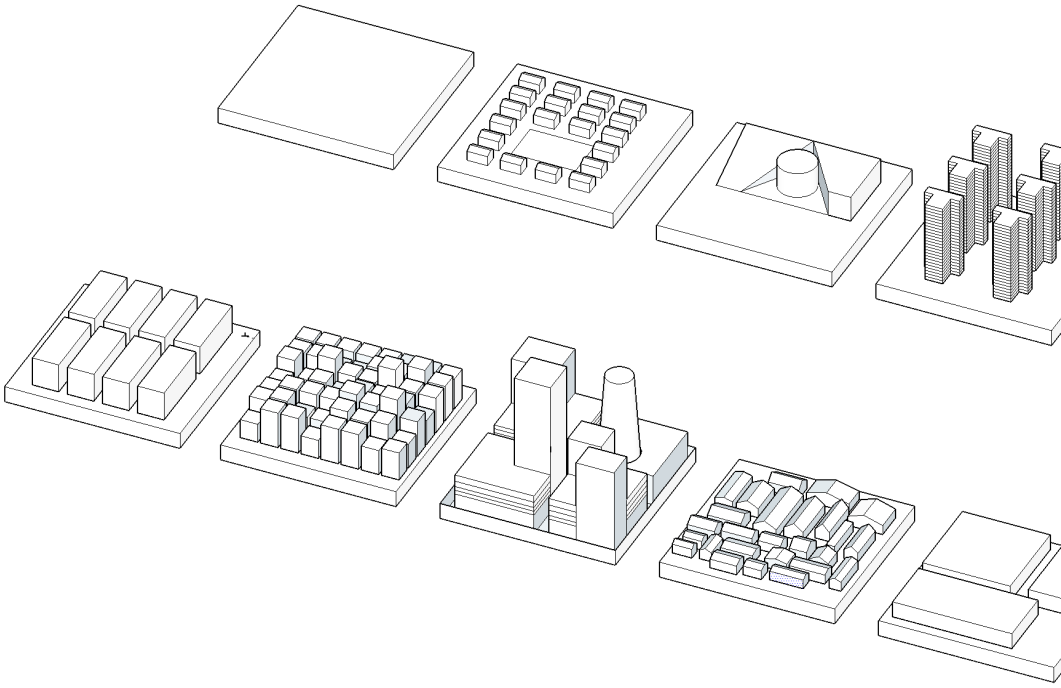
1.9 URBAN STRUCTURE AND TYPOLOGY

Current Shenzhen could be divied into three kinds of spacees. Orgianl SEZ area could be seen as creative city where creative indsutry gartheres and majority of regeneration projects happended. Post-indsutry area is seeing transformation and used to be production-based but functions are increasing and some regenration projects are happening. Production city is mainly manufacturing based and majority of urban villages exist here. Industry area and urban villages are mixed and some indsutry parkes exsited. New centers are connected

PRODUCTION CITY
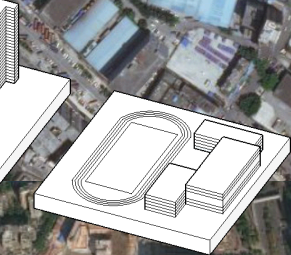
POST-INDUSTRY CITY
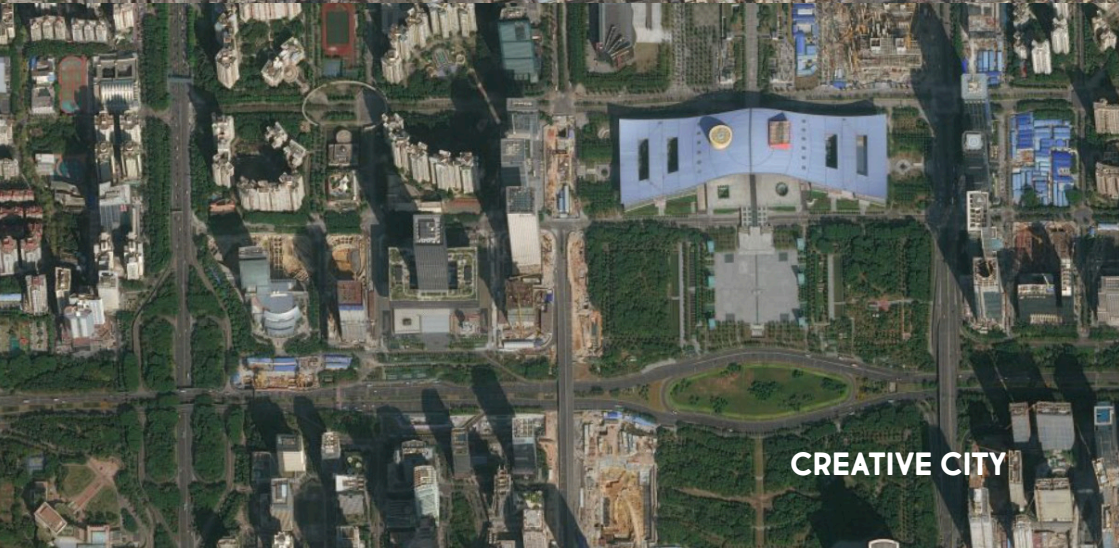
CREATIVE CITY

with SEZ area by infrastracture. As Google Earth Maps show, zoning planning system makes urban space function as patches and different typologies are segeragated by infrastructures. Road is mainly used for transpotation purpose. In the production city, main typologies are urban villgages, factory area and indsutry park. More typologies could be observed in post-industry city, such as high-rise reisdential area and shopping mall. SEZ contains the most typologies and shopping mall, public buildings such as library, sports center and amusement park. Typolgies in some certain represent the life quality in different cities.

1.10 URBAN REGENERATION MODEL

Another important factors in fostering the urban social-economic transformation in micro level is urban regeneration happening in Shenzhen. Urban regeneration projects mostly happen in urban villages and old factories areas where rural migrants live and work. As the main groups who live in urban villages, rural migrants are excluded in decision making process of regeneration projects of urban villages. In this stakeholder game, governments, landlords and developers are the main actors involved who make decision. For developers, they care more about profit-benefit of the redevelopment project when village landlords consider long-term livelords which includes has a more comprehensive consideration about the influence of the redevelopment project and most of time, environmental, social and fiscal aspects have to be evaluated. However, basic need of rural migrants

about living place is ignored and urban villages provide the most affordable housings in Shenzhen and they function as affordable housing in urban development of Shenzhen. After demolishment of urban villages, commercial residential projects will stand up with way more expensive rent and price and they would attract middle class who own the purchasing power to move in the city as Shenzhen government plans, becoming creative city.

On the one hand urban regeneration projects gentrificated the urban space and destroyed the urban vitality existing in urban villages. Street lives and community atmosphere, gradually disappearing in neighbourhoods of Shenzhen are still actively showing in urban villages. Zoning system applied as the main tool for guiding the social-economic growth leads to the number success, however, social domain and sense of community are barely mentioned in urban planning.
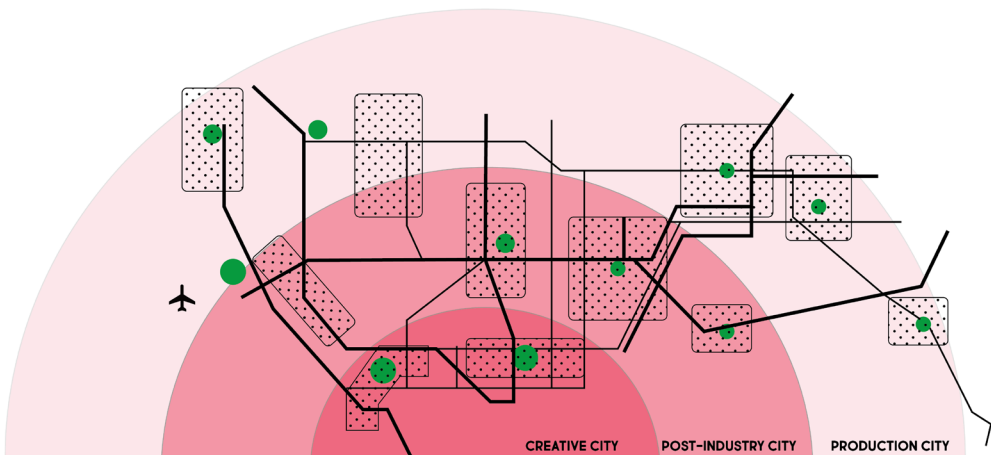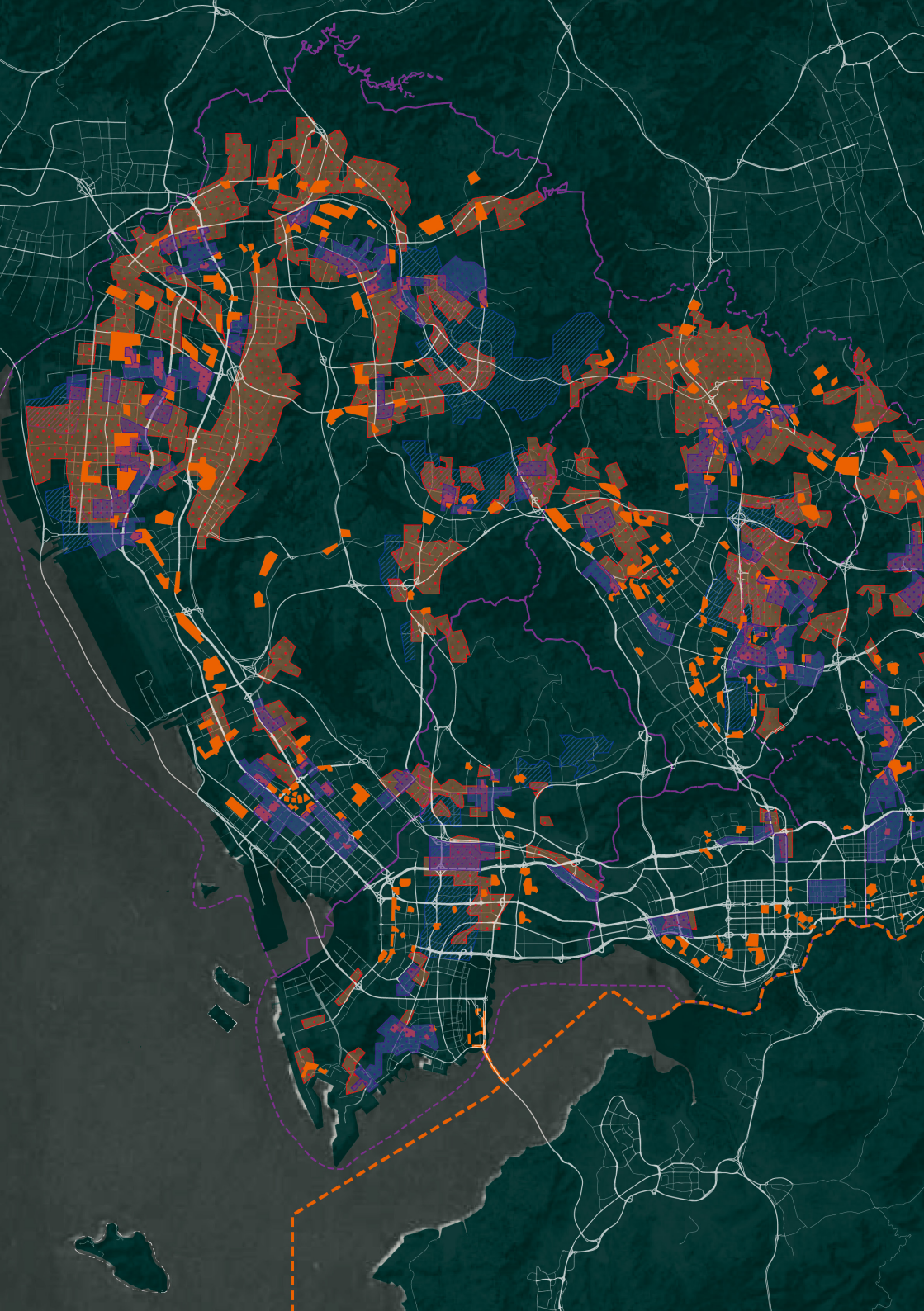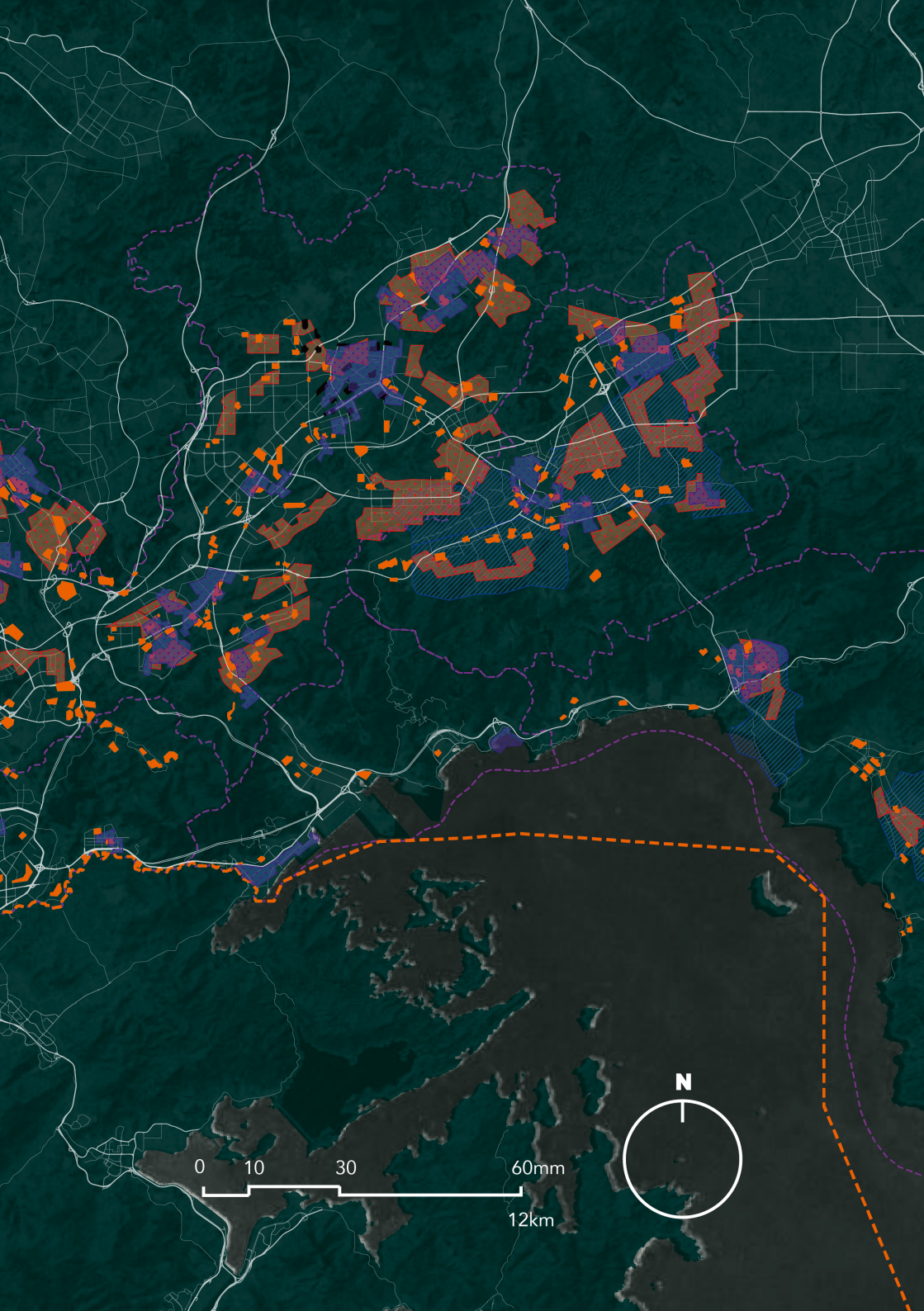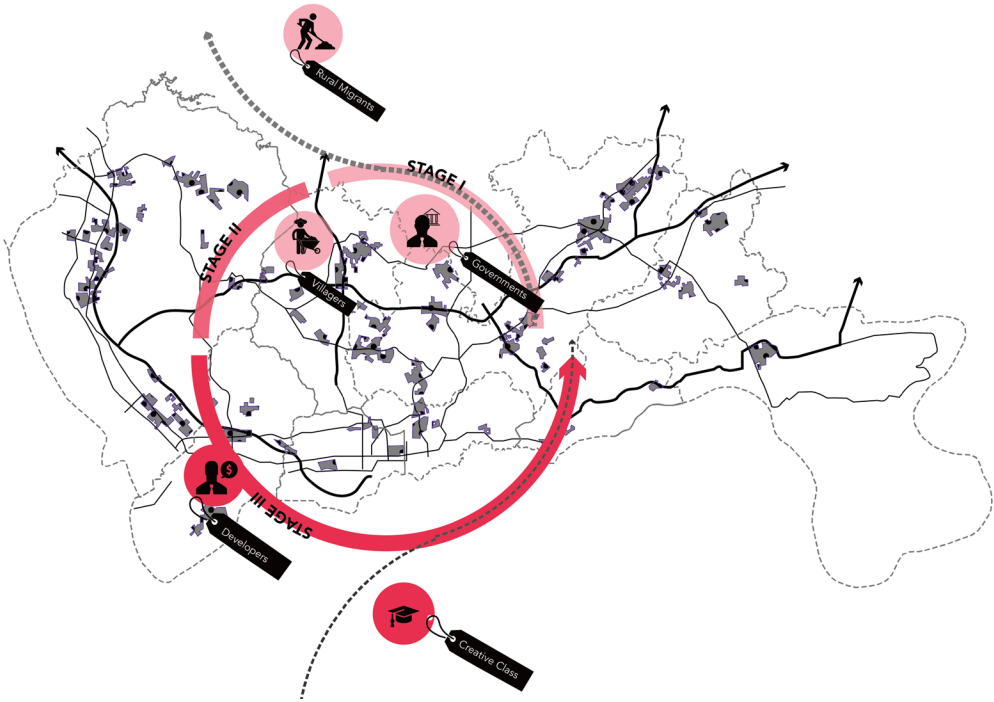
CREATIVE CITY   POST-INDUSTRY CITY   PRODUCTION CITY

N

0   10   30   60mm

12km

METROPOLITAIN VISION

REGIONAL STRATEGIES

AREA-BASED APPORACH

URBAN REGENERATION MODEL
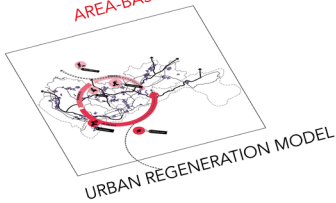
1.11 PROBLEM STATEMENT

A dramatic paradigm shift over the last few years has been observed in Shenzhen. It has moved from top-down planning, infrastructure-led construction and manufacturing development towards a new wave of experimentalism that attempts to tackle contemporary urban complexities, develop holistic social growth and steer new social values not solely dependent on economic metrics.

Along with this, political changes in the Chinese national innovation culture now recognizes the value of maker-entrepreneurs as change-inducing citizens with mass entrepreneurship and innovation indicating the democratization of the process. However, social innovation values at the grassroots scale and the resulting new forms of urbanism is still not appreciated by Shenzhen government, even though it intends to use makerspace as a political instrument for expressing national culture. Along with that, it tends to gentrificate the city through current urban regeneration model which enhanced the social exclusin process.
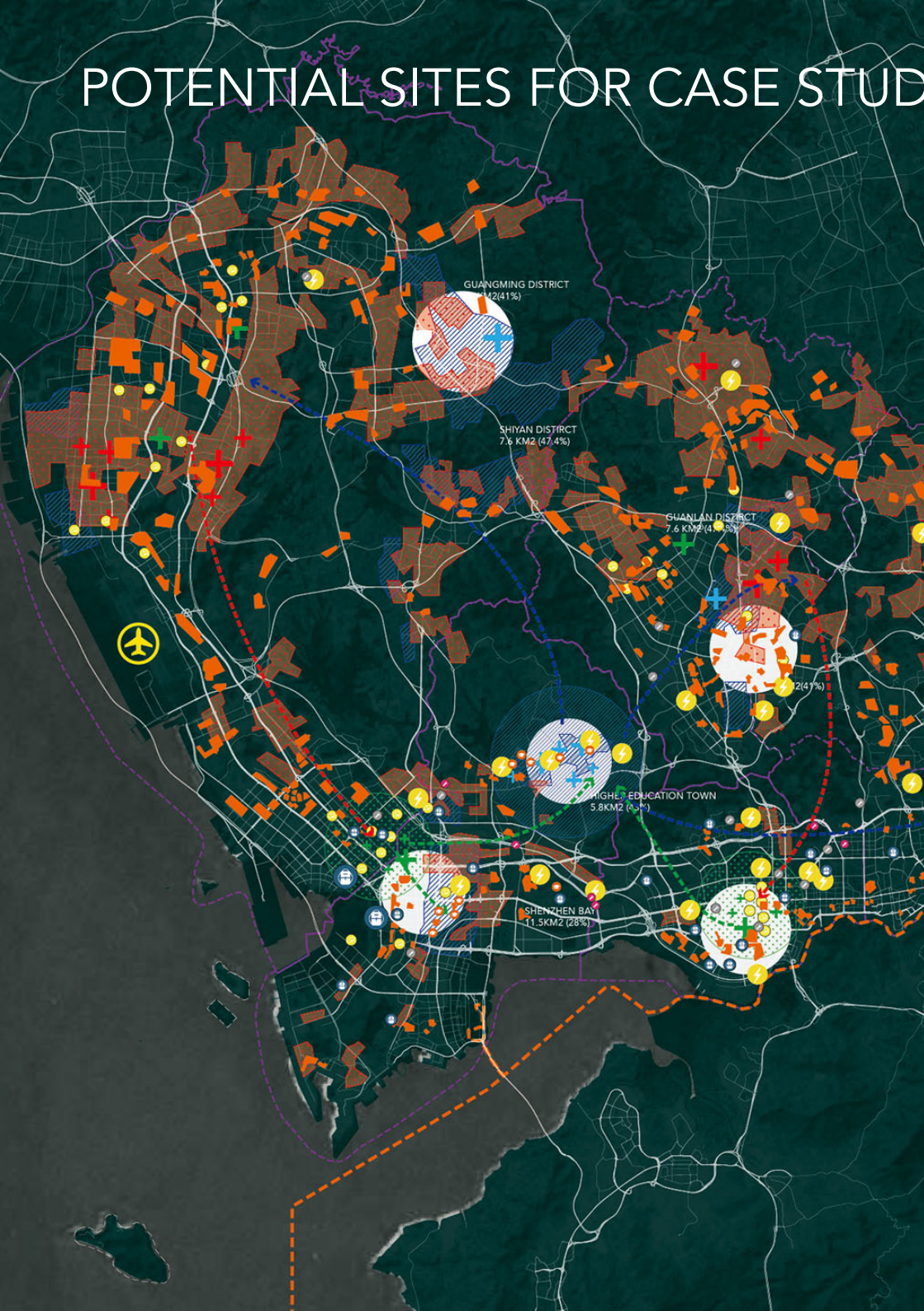
47

CONCLUSION

SHANZHAI CITY

- URBAN STRUCTURE
- URBAN TYPOLOGIES

- SPACE TRANSFORMATION
- SHIFTING EMPLOYMENT BASE
- POLITIC CHANGE
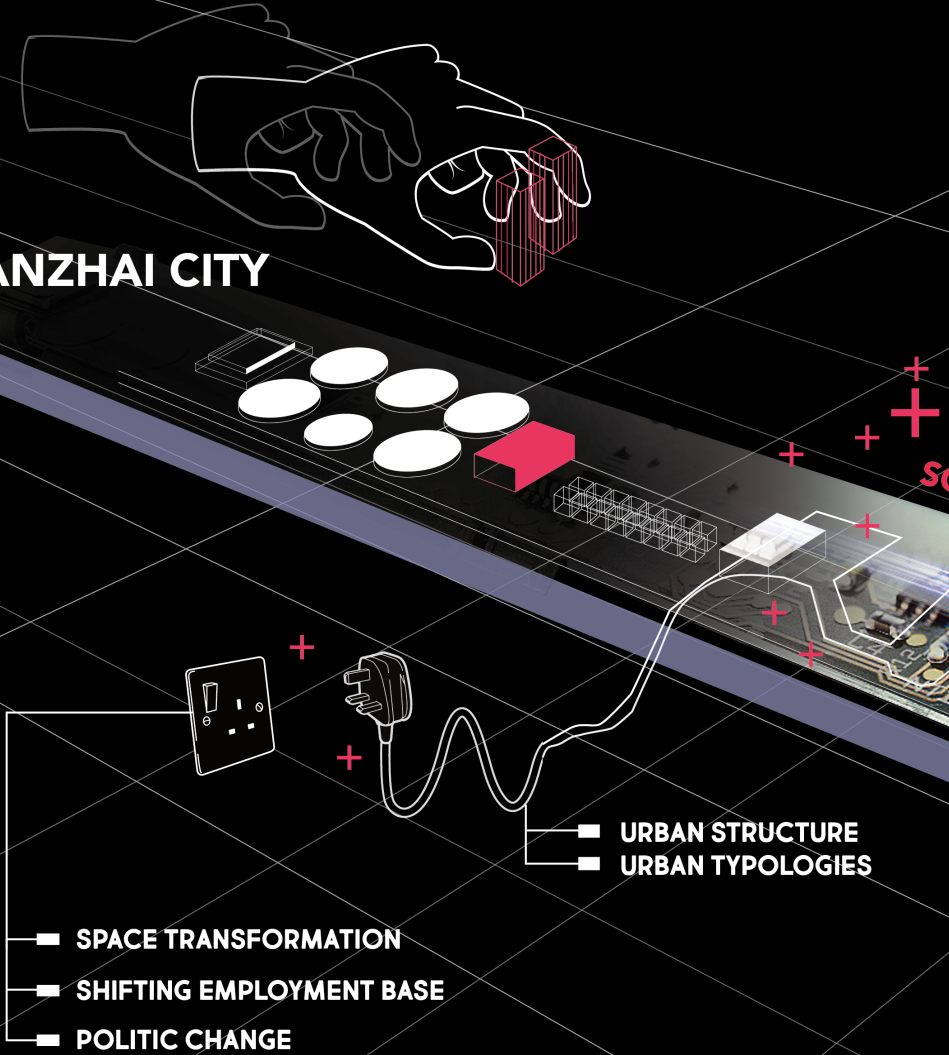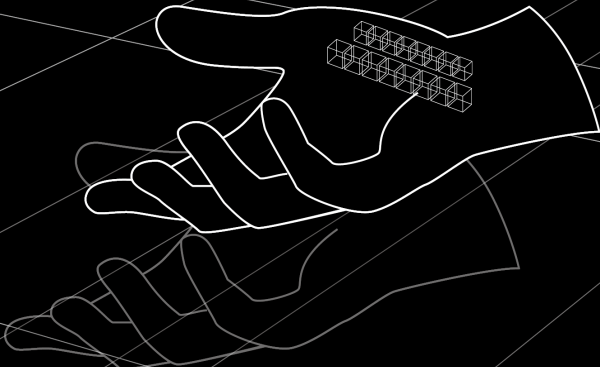
SOCIAL EXCLUSION

MAKER CITY

GUANGMING DISTRICT
KM2(41%)

SHIYAN DISTIRCT
7.6 KM2 (47.4%)

GUANLAN DISTRICT
7.6 KM2 (4 %)

2(41%)

HIGHE EDUCATION TOWN
5.8KM2 (4 %)

SHENZHEN BAY
11.5KM2 (28%)

GUANGMING DISTRICT
20 KM2(41%)

GUANGMING DISTRICT
20 KM2(41%)

GUANGMING DISTRICT
20 KM2(41%)
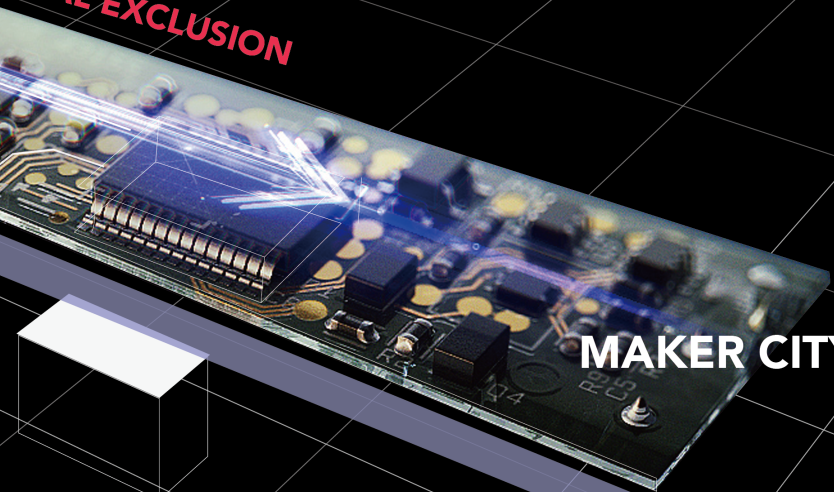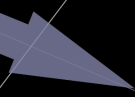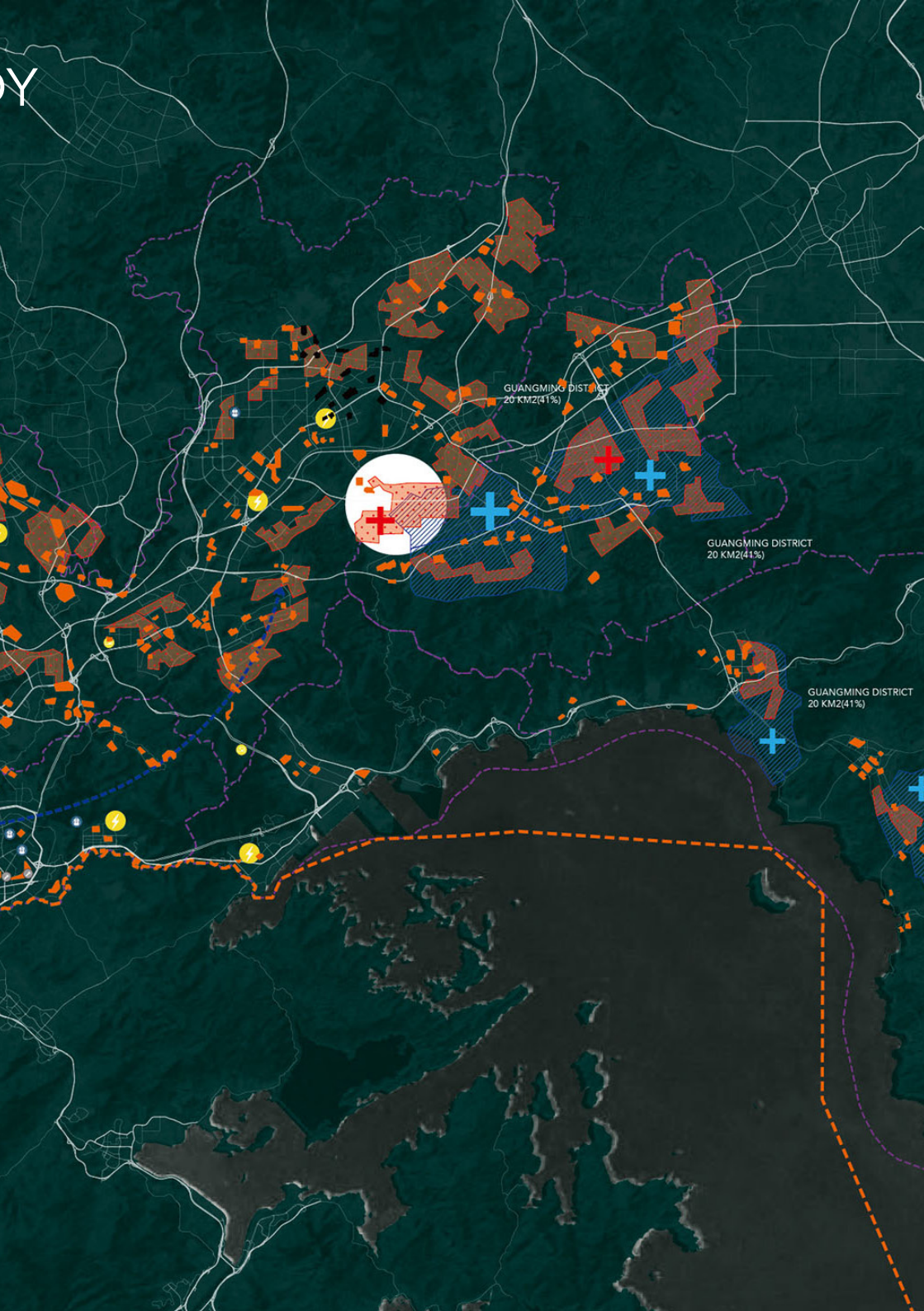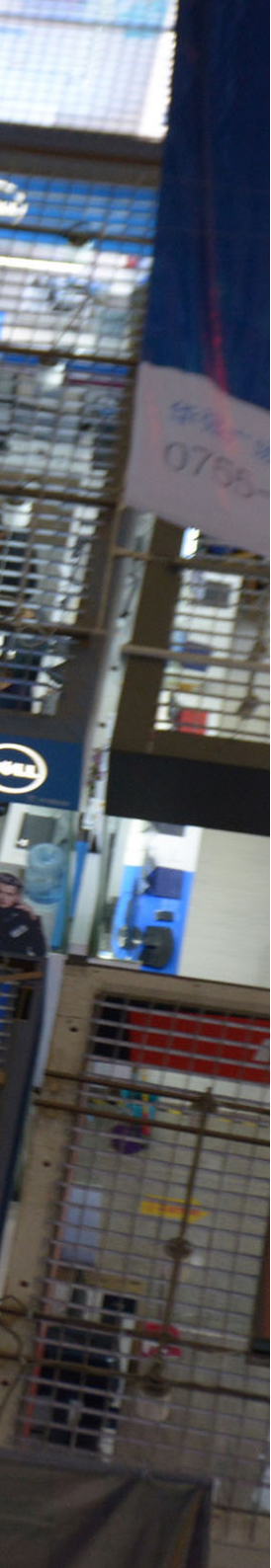
1.12 RESEARCH QUESTION

How to build a strategic design framework based on Maker Movement to revise the process from Shanzhai City to maker City thereby including rural migrants in urban redevelopment of Shenzhen?

Key Words: Strategic Design Framework, Maker Movement, Process, Inclusion

+What are the conditions for emerging of Shanzhai movement in Huaqiangbei that could provide principles for fostering maker movemnt in urban redevelopment project? (SHANZHAI CITY)

+How could current maker movement be rivised to meet demands of maker groups and bring new value? (MAKER CITY 1.0)

+How could maker movement be integrated for making a urban design framework to achieve inclusion of migrants in urban redevelopment? (MAKER 2.0)

As mentioned before, Shanzhai model which plays an important role in economic and urban development of Shenzhen along with its resulting urbanism experience deserves a further analysis on its systematic evolution and its possibility of application in facilitating social movement. Thus section Shanzhai city is about learning experience and exploring the pathway Shanzhai movement follows in its development history.

Then, current situation of maker movement will be discussed. First, how current maker movement has developed and its history. Secondly, the stage of maker movement it situates and the values it represented. Thirdly, demands from makers this hidden group and how their values could be expressed in space.
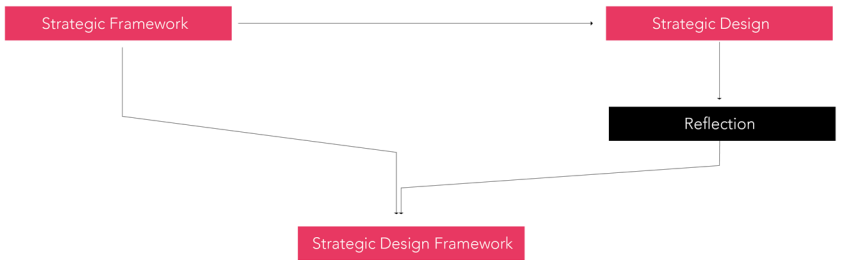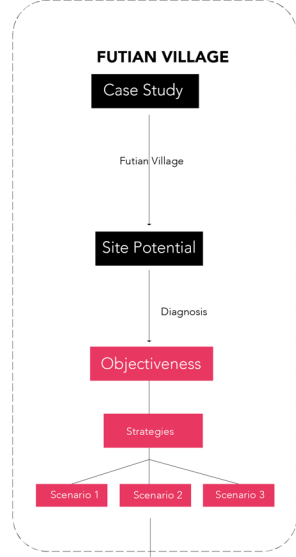
Section 1   Section 2   Section 3

Huaqiang North Area   **SHENZHEN**   **FUTIAN VILLAGE**

Policy Review   Interview   Literature   Case Study

                                             Literature   Comparative   Snowball
                                                                            Sampling

Historic   Potential   Mechanism   Futian Village

                                             Makerspaces in   +Makers
                                             Netherlands   +Makerspace Managers
                                                                            +Shanzhai Community
                                             Makerspaces in   +Urban Planners
Shanzhai   Shenzhen
Movement
                                             Maker   Problems of   Demands from
                                             Movement in   Current   Makers for   Site Potential
                                             Shenzhen   Makerspace   environments

                                                                                               Diagnosis

                                                                                               Objectiveness

                                                                                               Strategies

                                                                           Scenario 1   Scenario 2   Scenario 3
Princinples   Guidance

                    Strategic Framework   Strategic Design

                                                                                         Reflection

                                      Strategic Design Framework

Eventually, reflecting what I learned from first two section, consisting of principles and guidance on urban design framework on case study forms a test design to evaluate the possibility of revising the process from Shanzhai city to Maker City while including migrants in urban redevelopment.

1.13 METHODOLOGY

In my research, I used politics as a tool to do the analysis, form strategy and contribute to the design, eventually reflect to policy. As Castells and Castells (1998) stated, "space is expression of society, not reflection of society." The design intervention proposed will in turn affect the society and assist in related policy to help community better express themselves in space.

Method chosen for research consists of three sections as figure 2 shows. In the section one, History and policy review gave me an insight about the current innovation system and how space can contribute to its development along with the role of government in shaping the Chinese innovation typology in China. Meanwhile, it demonstrates the fact that grassroots innovation model in Shenzhen reflects the strong demand from locals for their own environments.

How locals use their own intelligence through collective efforts to fight with governmental organizations contributed to the principles for later design intervention. Section two is about identifying the local demands which is also in line with the potential but fragmented demand for more control on their environment, as individual, collective and even on a regional scale.

2016   **2017**

| 09 | 10 | 11 | 12 | 01 | 02 | 03 | 04 | 05 | 06 | 07 |

Literature

Design Principples

Comparitive

Interview

Design Guidance

Site Visit

Site Analysis

Diagnosis

Concept

Strategic Design

Evaluation

Strategic Design Framework

Conclusion

Final Report

P1   P2   P3   P4   P5

Politics review helped me identify the mismatching between local demand and national culture. Relocating 'makerspace' in national innovation system revealed the fact that a gap exists between national culture and grassroots risky culture in term of innovation.

It suggested that new value should be introduced to the current maker movement, which is about making mistakes, taking risks and making as a lifestyle. Final part of the research intends to use urban village as case study to explore the possibility of using makers as a hint for inclusive urban redevelopment. The relationship and accord among different stakeholders influences a pathway of future development of urban villages. Especially, how government as a player or not as a player in urban redevelopment could provide different scenarios for a possible future.

Therefore, the methodical line offered by the studio perfectly matched to the methodical

SHANZHAI CITY

2.1 BASIC INFORMATION

Huaqiangbei locates in the Futian District of Shenzhen and backbone of Shenzhen, Shennan avenue come across this area. As map shows, it has a good geographical location and has geographical proximity to Shenzhen-Hongkong border. Because of its central location, it could be easily accessed by highways and public transport including metro and bus. However, highways limited the accessibility of this area in a way that central park is not easy to be accessed. The whole research site is about 4.67 km2 which consists of several different typologies, including Danwei Housing, which is a heritage from planned economy when state-owned company was in charge of the accommodation of their own employee, gated community, urban village, commercial area, office area and relocation neighborhood (Figure 2.1).

2.2 REASONS FOR CHOOSING THE SITE

Huaqiangbei area is planned as one of main commercial areas according to Shenzhen Master Plan 2010-2020. Meanwhile, it has another mission to become international maker center which will rely on its rich resource of hardware and manufacturing ability. As the headquarter where Shanzhai enterprises used tp gathering, Huaqiangbei area locates in the very center of Shenzhen, Futian District and it is famous for its electronic products business national wide. According to the analysis done before, the whole Shenzhen could be divided into three type of cities concerning its function, development strategy and occupations. Creative city where Huaqaingebi electronic market locate will be the main force in influencing how innovation is available to public. Compared to other area, city center would have higher opportunity for success of incubating grassroots innovation along with the rich resource of exploring the possibility

Fruther research will be focused in Huaqiangbei District in Futian District.
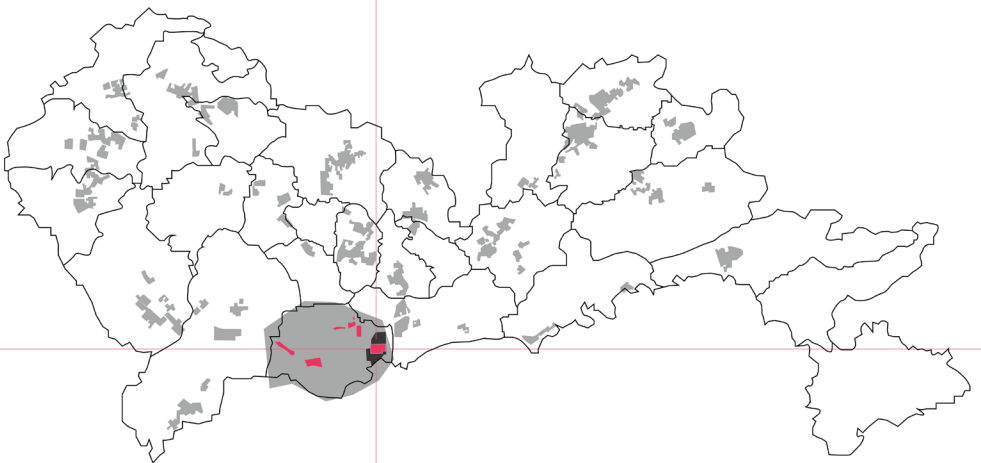
maker city. Governmental support along with local demands both exist here which would contribute to the ideology of maker city later.

2.3 RESEARCH SCOPE AND METHODS

In this chapter, HQB industry area is seen as collective effort in transforming the zoning plan by Shanzhai entrepreneurs. I used three main research methods to reveal the essence and value of Shanzhai movement. Policy review is used for studying the historic and fundamental relationship between architecture, planning and 'government' where design does not only have a functional role in the organization of the territory, but also expresses the values that is highest on the agenda. The relationship between market and governmental control in shaping the environment indicates a dramatic paradigm shift over the

Huaqiangbei

last few years in Shenzhen. It has moved from top-down planning, infrastructure-led and manufacturing development towards a new wave of experimentalism that attempts to tackle contemporary urban complexities, develop holistic social growth and steer new social values not solely dependent on economic metrics.

Interviews I conducted with Prof. Tat Lam, PhD student Yujing Tan widened my understanding of Shanzhai movement from purely industry aspect towards inclusive social movement in informal economy. Their understandings in Shanzhai Movement provided a wide thinking about possibility of Shanzhai Mechanism in the future. After their introduction about informality in Shanzhai Movement. Literature review assists me in deep understanding about the mechanism behind this social movement. I emphasized three strategies—framing, aggregating, and bridging—Chinese entrepreneurs employed

to mobilize support, garner resources, and increase their amount and level of legitimacy (Lee and Hung, 2014).

Research scope will be limited to original industry zone area which mainly consists of industry blocks. New development in surrounding area could be seen as top-down decision while functions in industry area is a compromise between market forces and governmental control.

2.4 HISTORY OF HQB

At very beginning of the opening up, Beibuling (now Huaqiangbei area) is planned as 1.2 km2 light industry district. Hundreds of industry enterprises from national wide came to this area for looser political environment, more money resource and closer distance to market. A morndenlised manufacturing zone started to be shaped by this investment heat. However, in middle 1990s, rapid urbanization happening in Shenzhen led to increasing land price and rent with governmental vision shifting from industry city to innovation city, many manufacturing enterprises are forced to leave from city center to sub-urban areas or other cities promoting manufacturing industry.

With industry enterprises moving out, the whole industry zone became empty until private enterprises silently rented these industry building blocks for commercial purpose. With Shanzhai mobile phones business booming, gradually have the function of these industry blocks been changed from industry production to variety of purpose, such as retailing, residential, office, restaurants. Debate on legalization of using industry blocks for commercial purpose in this area led to the larger involvement of Shanzhai Entrepreneurs in decision making of urban planning of the Huaqiangbei area. Huaqiangbei is a case of bottom-up urban development mechanism. It was transformed from an industrial land into a successful commercial area mixed with remaining industries without official planning, and got justified later through adjusting zoning plan.

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华强三洋 SANYO

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数千移动DVD
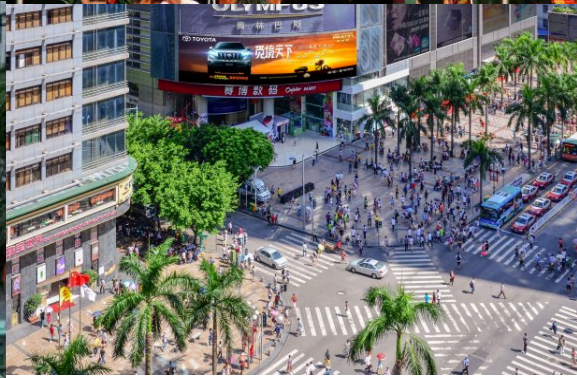
In order to show this development process, it is important to recognize how governmental visions changed in Huaqiangbei area and accommodate the local demands in new urban planning.

2.5 HQB IN GOVERNMENTAL PLAN

In 1980s, Shangbu Industry Park was clearly planned as "industrial park of electronics and light industry". After that, Shenzhen government plan put forward that its function could be gradually transformed from industry park into electronic technology, commercial trade and securities trading-based integrated area, which later would integrate with Futian Central and Luohu Central areas.

Luohu - Shangbu- Futian area would constitute an organic part of Shenzhen City where the business, financial securities

图 3　2004 年现状与 1999 年规划比较未按规划实施用地(深色部分)
Fig.3　Situation of 2004 and self-developed land compared with the planning of 1999 (dark color)

(Tao, 2008)

and office-based business are integrated together. The end of the 1990s, facing severe macroeconomic development situation, Shenzhen government proposed that the function of Shangbu Industry park is "residential purpose mainly, while business, financial securities and office mixed use area; sub district level commercial service center; city level home.

appliances, electronic and communications products wholesale sales center". However, 2005 development plan has put forward the mission of it, "regional electronic professional market as the representative of the international logistics center; mixed use city commercial center; high-tech research and development Center; office, residential and other functions integrated area".

(You, etc., 2011)
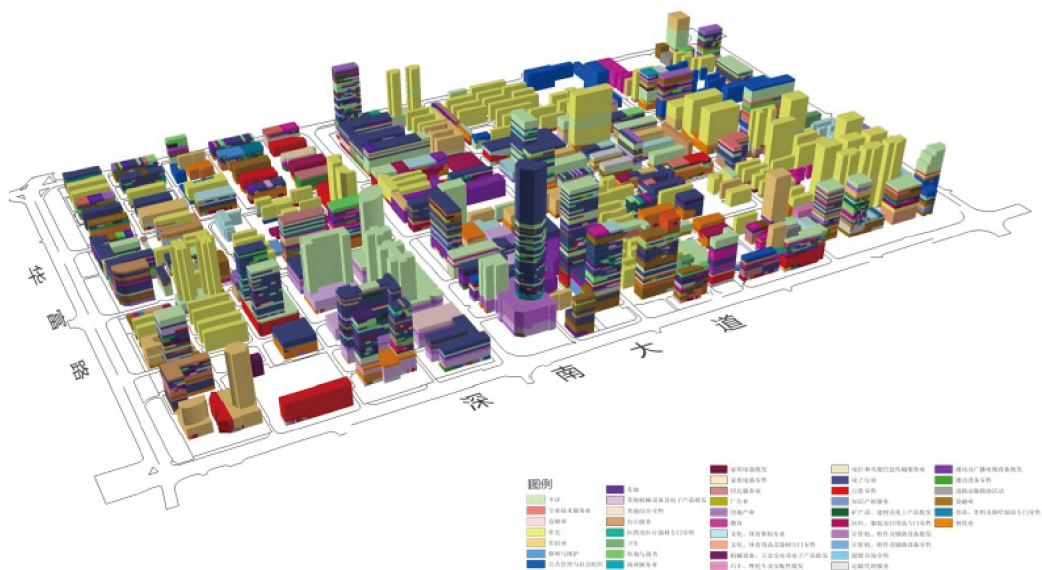
If we summarized above content, we could get three key words in term of how Shenzhen government positioned function of Shangbu Industry park in the past 30 years.

Early 1990s, "Securities Trading Mainly",

1990 "Residential mainly", "Sub district-level commercial service center" and so on

2005, Regional Electronic Market

NATIONAL ENTERPRISES

SHANZHAI BUSSINESSMEN

HUAQIANGBEI COMMERCE COMMUNITY

MANUFACTURING MAKERS

CONSUMERS

GOVERNMENT

FRAMING

AGGREGATING

BRIDEGING

Government Recongnized the Legal Statue of Changing Industry Block to Commercial Purpose

Keep Outdoor Advertisements and Organize Commercial Promotion Events in HQB
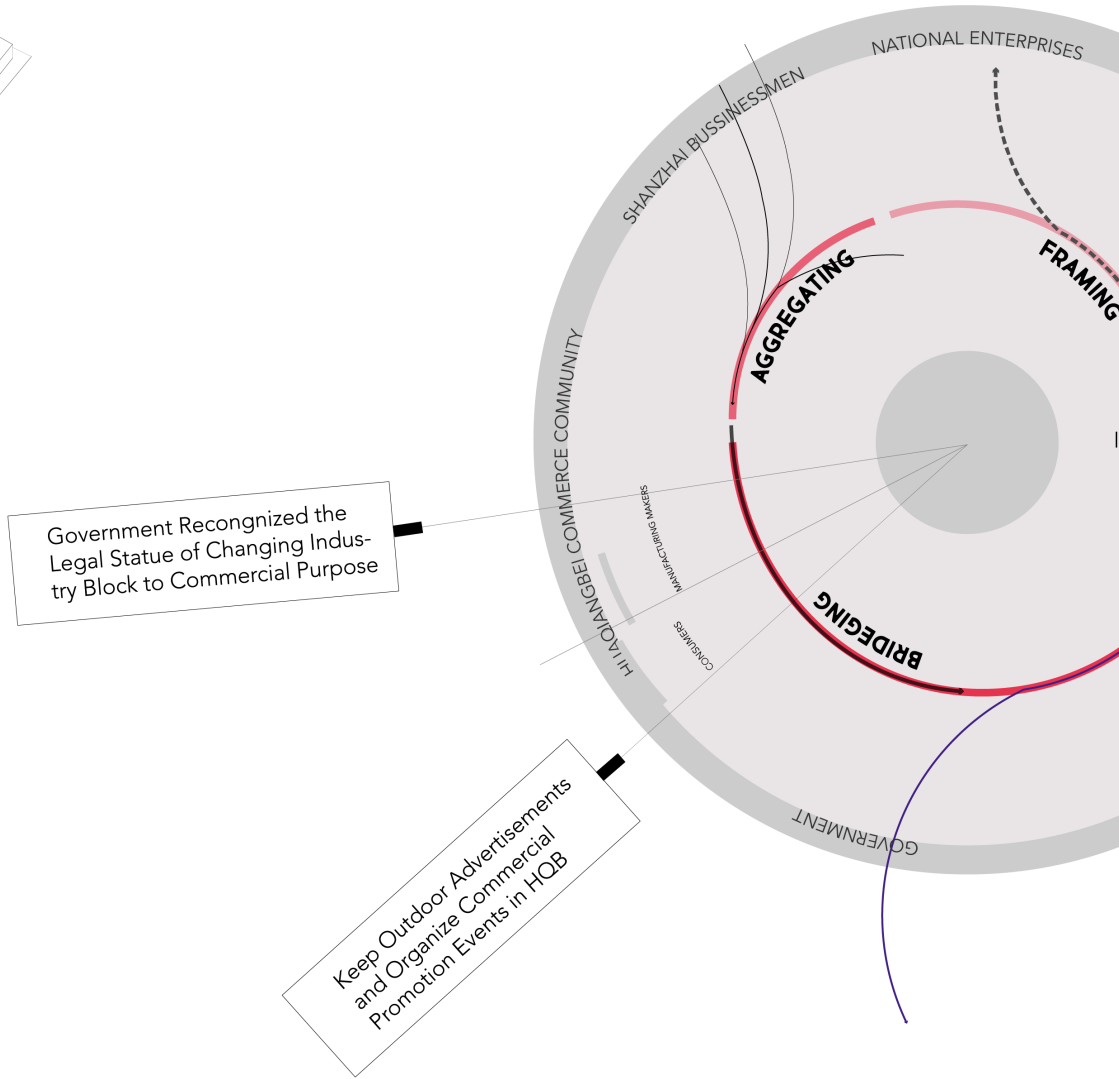
2.6 SOCIAL MOVEMENT STRATEGY IN SHANZHAI MODEL

In Shenzhai study, the uniqueness of this social movement is about collective efforts in adapting this Shanzhai phenomenon from informal to formal through both institutional and spatial aspects. In term of institutional aspect, the way how Shanzhai Enterprise is developing actually reflects in a way government tries to absorb these informal power and decease the threatening from them. On the other hand, informal enterprises seek to obtain formality and become formal through collective effort and actions.

As Lee (2015) stated, three strategies are quite essential for obtaining formality and gathering formality. The first strategy is framing, which means developing a frame for development of re-cognitive things to interpret the structure. The reinterpretation of the entrepreneur's action is desirable, proper, and appropriate. The second strategy is aggregating, means that enough actors will be organized around the common interests. The third strategy is bridging, means to catch the bridge with the outside world in order to obtain the necessary key resources, escape path dependence, both by the framework or resource environment locked dead loop. Bridging is not a general link, but an organizational hole that occupies a strategic location, it can help the actors in a system to cross to another system, looking for complementary resources, alternative solutions, Or new possibilities (Lee and Hung, 2014). Corresponding to this strategy, Shanzhaientrepreneurs started to express their de

nformal   Formal
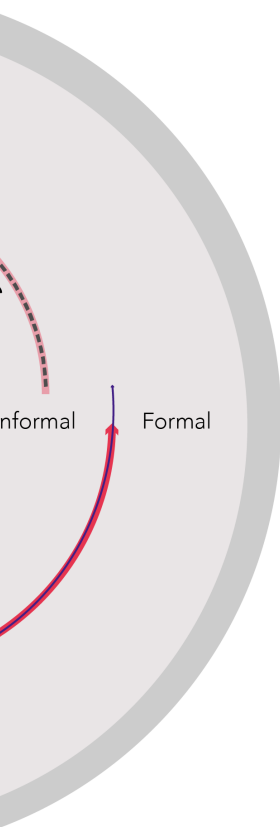
mand in shaping environment spatially. The functional change happing in these buildings fostered the interactions between people and maximize surfaces to win more business opportunities. Starting from one single building, diving the single buildings into hundreds 1*1m plots for transparent counters totally occupied the previous industry buildings. Later façades were opened for more street shops and window shopping which gradually transformed the appearance of industry buildings. More entrepreneurs gathering in this area partially changed the functional zoning of urban planning. Milieu is the most valuable aspect in industry clustering and also most valuable aspect in Huaqiangbei area.

2.7 SOCIAL LEARNING IN SHANZHAI MODEL

Shanzhai is a manifestation of collective innovation and distributed creativity, an intelligent evolutionary process through time that involves many investors and users creating the most dynamic, micro-scale and localized solutions. Shanzhai innovation challenges the traditional avant-garde innovation model with thousands of grassroots investors in Shenzhen. The evolution of Shanzhai innovation originated from simple manufacturing activities in developing regions and the grassroots community. But in contrast to entrepreneurs and governmental institutes, the grassroots community captured the know-how (the skill to make). But not the knowledge (the intelligence to create), behind innovation to create the most sensitive technology while facilitatingthe smartest technologies developed by other inventors..

NATIONAL GOVERNMENT

LOCAL GOVERNMENT

DEVELOPER

CREATIVE BUSSINESS OWNER

CREATIVE EMPLOYEE

CREATIVE BUSINESS

SUPPOTIVE BUSINESS

SUPPORT EMPLOYEE

SUPPORT BUSSINESS OWNER
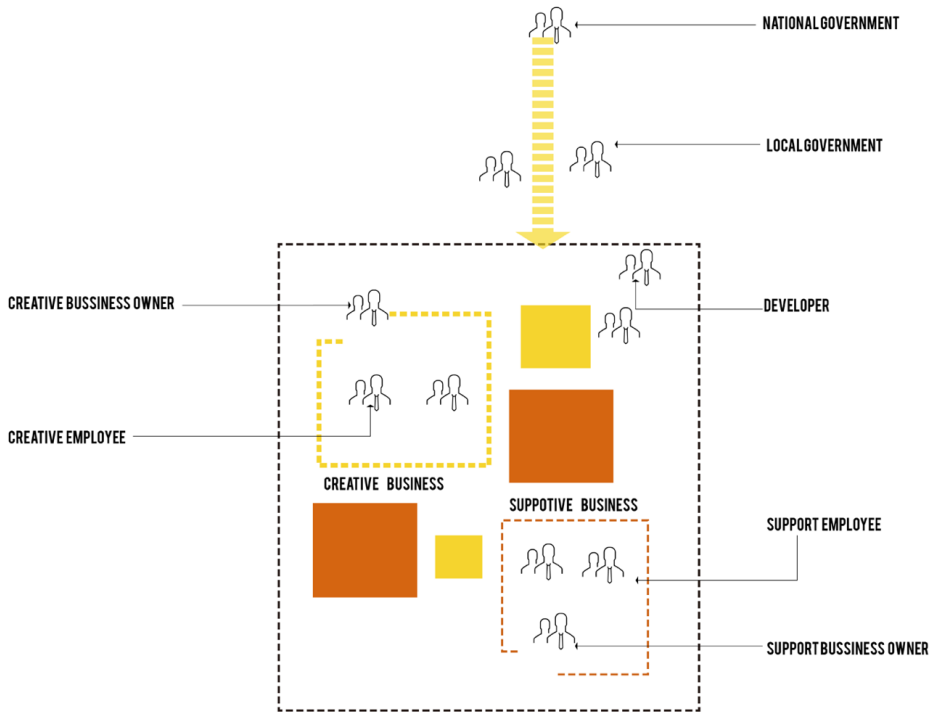
Shanzhai, which is synonymous with the innovation know-how process, is far more resilient than any existing economic structure based on capitalist rules, because it is based on the collective of millions of innovators instead of relying on a monolithic knowledge management system that can fail easily due to one wrong decision at the executive level.

DEVELOPMENT HISTORY

	BOTTOM-UP	TOP-DOWN
MARKET-DRIVEN	Consolidated arts development based on existing community Huaqiangbei	Commercially based development from scratch OCT LOFT
GOVERNMENT-DRIVEN	Cultural development to bolster existing community UABB*SZHK	Cultural development from scratch Technology Park

OWNERSHIP MODEL

(Tat, 2011)

Commercial

Industrial

(ZOU, 2014)
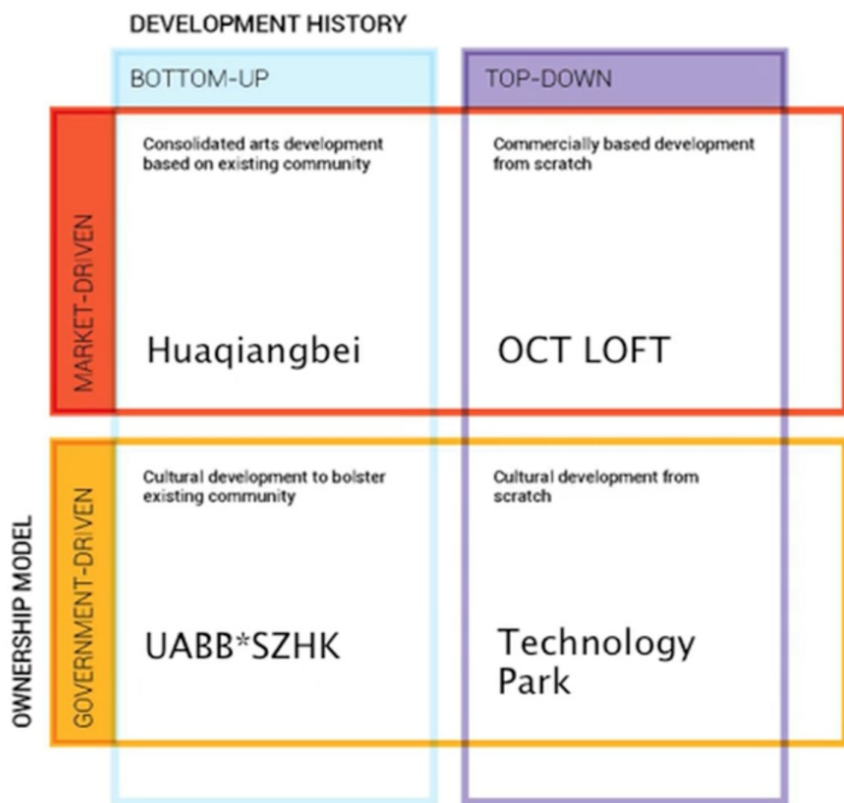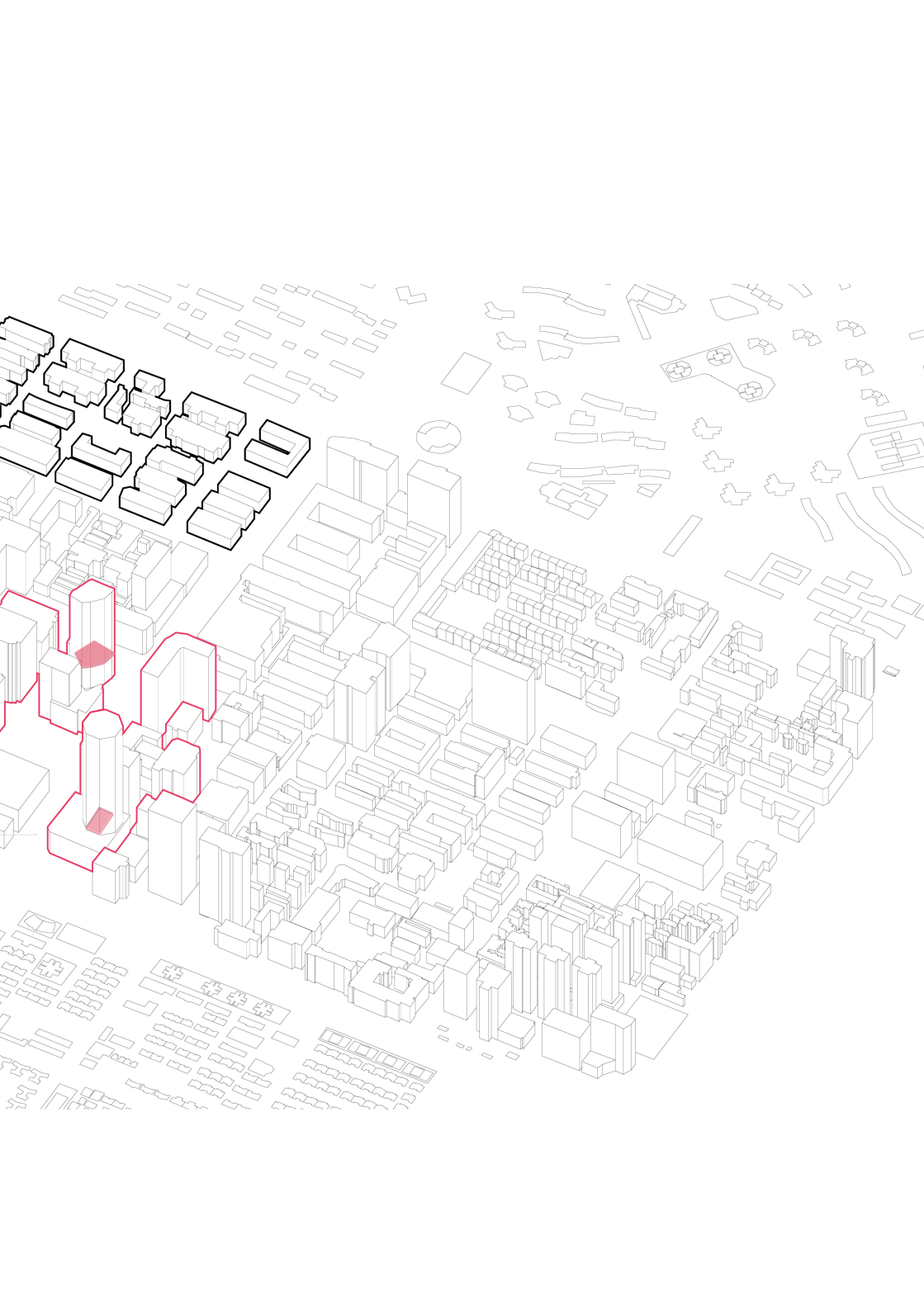
PROTOTYPE

Hirizontally-Integrated

Vertically-Integrated

INFRASTRUCTURE
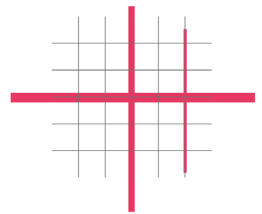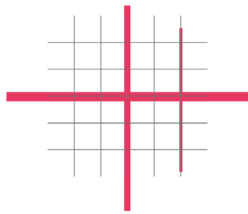
PROGRAM

ZONING

SKYLINE
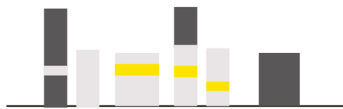
Adjacent
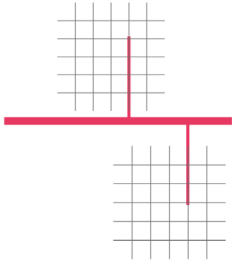
Autonomous
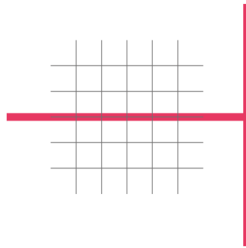
2.8 CONDITIONS FOR EMERGING OF MAKER MOVEMENT IN HQB

In order to qualify the urban development in Huaqiangbei area, evaluation model created by research group Why Factory of MVRDV is applied to define the quality of Huaqiangbei. According to the benchmark it proposed, The Why Factory (2012) recognized that the quality of communities is their ability to combine two seemingly competing characteristics: density and individuality. They understood it that on the one hand, communities are dense, public and collective; on the other, they enable individual freedom and identity, traits expressed through flexibility and diversity. In its benchmark,

11 qualities are listed as factors in evaluation, including density, publicness, critical mass, informality, human scale, individuality, flexibility, identity, diversity, evolutionary and collectivity. According to our spatial and social analysis, conditions that how maker movement is emerging in Huaqiangbei area could be summarized in five elements, namely critical mass, density, evolutionary and informality.

1. CRITICAL MASS

Communities have critical mass, they have enough people to have a self-sustaining social momentum, retaining and reinforcing their positive aspects over time. Individuals are drawn together by this force, creating a

Source: Why factory, 2012
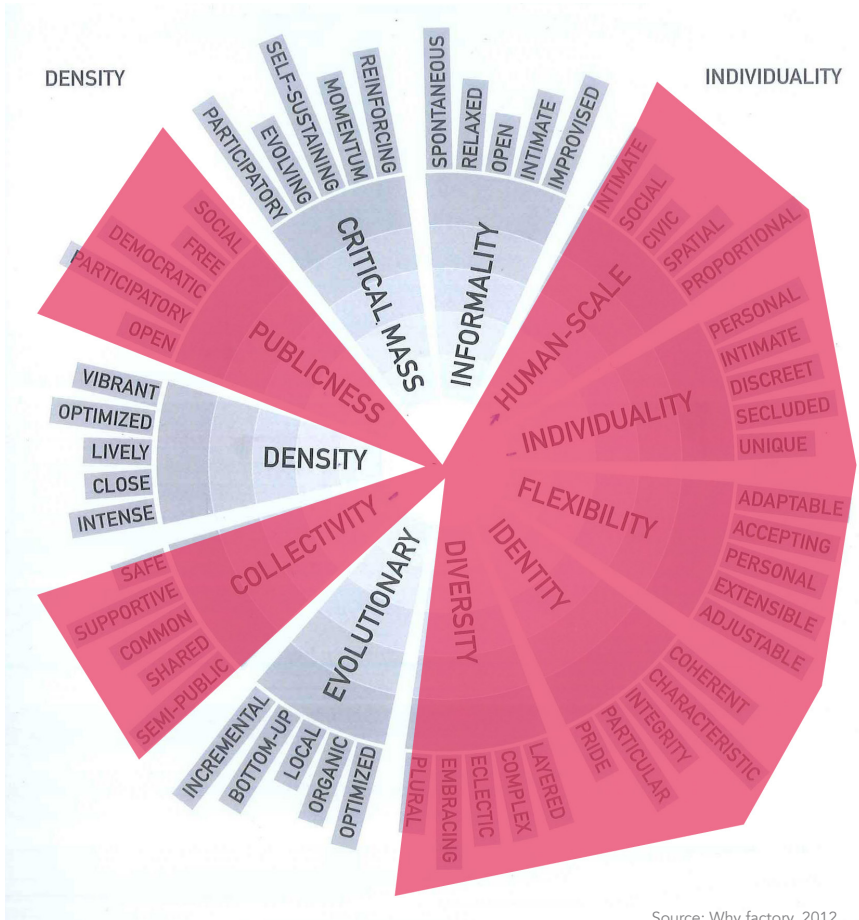
sense of urbanity as a participatory project greater than the sum of its parts. Critical mass is achieved once the number of people reaches a certain threshold to generate density and collectivity.

In the case of shanzhai movement, aggregating of different stakeholders is the case for gathering enough people for changing the voices and environment.

2. DENSITY

Communities are dense, creating an urban vibrancy, liveliness and intensity that comes from the pressure of a large amount of programme and people compressed into a small area. Through optimized design and general social consideration, the negative aspects of living in a dense space can be more than offset by the opportunities it provides. There are explicit methods for measuring density on an architectural scale, using the FAR-Floor Area Ratio.

Density created geographical proximity in the case of Shanzhai entrepreneurs which is about atmosphere in community, contributing to innovation know-how.

3. INFORMALITY

Communities are collective: they offer the feeling of being part of a safe and mutually supportive group, with shared ways of living, ambitions, characters and qualities, tied together by a dense social fabric. Spatially they are often organized around a semi-public common space, with shared facilities or resources. Collectivity can be measured by the mix of private to public space and the presence of common programmes.

4. EVOLUTIONARY

Communities evolve. Their overall character is determined by an incremental process of adaptation, and the optimization of local conditions. Their development is organic and bottom-up, reflecting the changing needs, wishes and habits of the people who shape their environment over time. Evolutionary growth can be measured by the continuity of investment or development in an area.
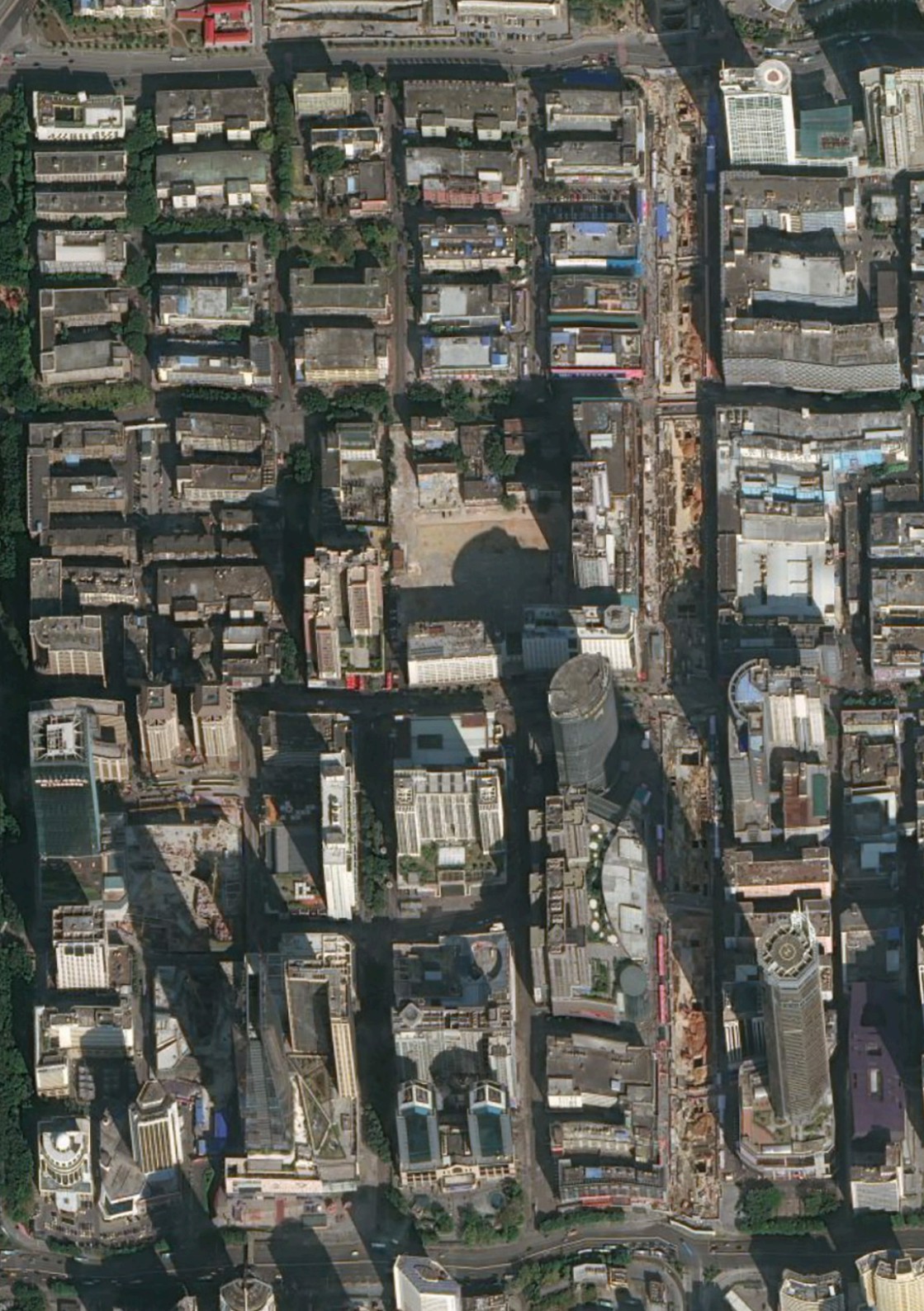
2.9 CONCLUSION

Research on Huaqiangbei Area gave an valuable experience on how grassroots community, Shanzhai entrepreneurs fight for their own spaces in city and changed the governmental place for it. HQB could be seen as a success of communication between top-down planning and grassroots development. The strategy used by Shanzhai entrepreneurs could be useful for facilitating the social movement in Shenzhen later, which consists of framing, aggregating and bridging. It is an evolutionary process to assist Shanzhai community in strategic development and gaining voice in their own environments. The grassroots community 'illegally' transformed the functions of these industry blocks since functions are different what governmental zoning planned. Mismatching between governmental vision and local demands in early stage gave a chance for emerging of experimentalism and risky culture.

Later stage Broad scale spatial transformation had a more visually visible transformation in city which led to government's rethinking on the positioning of the HQB area. Then bridging which means formalization of informal business finally contributed to the connection between these entrepreneurs with governments. In this process, market driven spatial transformation quickly reposed to local demand and it provided us certain principles for incubating such vitality, critical mass, density, collectivity, informality and evolutionary.

MAKER CITY 1.0

3.1 MAKER MOVEMENT IN SHENZHEN

As stated before, the shift of governmental vision leads to the emerging of maker movement in Shenzhen. Government saw it as changing point of made in China to design in China. Since the rich resource of hardware, Huaqiangbei is set as the international maker center for strengthening the vison of maker city. Known as biggest retail and commercial center in China, Huaqiangbei already attractes thousands of makers including DIY lovers, Start-up teams both external and oversea to come and assemble their own products based on the materials from electronics market.

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center for strengthening the vison of maker city. Known as biggest retail and commercial center in China, Huaqiangbei already attractes thousands of makers including DIY lovers, Start-up teams both external and oversea to come and assemble their own products based on the materials from electronics market.

Shenzhen government released the Three Year Action Plan on Promoting Maker Movement ¬in Shenzhen from 2015 to 2017 after President Li Keqiang visited the Chaihuo Makerspace. This plan aims to give an incentive to the development of makerspace through subsidy and expect to build 200 makerspaces by 2017 (Shenzhen Municipal Government, 2015). After that, the number of makerspaces Shenzhen witnessed a sharp increase and majority of them locate in original Shenzhen Economic Zone. Categorized as new typology of innovation space by National Government, this maker movement in Shenzhen is expected to be used as economical tool for economic and innovation development. Rich resource of hardware makes it possible in Shenzhen and previous Shanzhai Culture in manufacturing facilitates the building up of solid and complete manufacturing industry. This provides the background of the further discussion in this article and as a western origin term, the definition of Maker movement and makerspace will be discussed

understanding. Then Shanzhai culture in Shenzhen provides clue how hardware manufacturing is developed and later provided the chance for maker movement. This shows how grassroots innovation is happening and top-down innovation system planned by national government would show another aspect of make movement which represents the new innovation strategy. At the end, values difference in western and Chinese context will give some hints about next step of maker movement. What else role of makerspace could play in urban development of Shenzhen will be further discussed.

As Tan (2017) states, "No one in government institute understands the meaning of makerspace and the term 'makerspace' mixes so many different types of ideas." The interview did with PhD researcher Tan gave me a hint about the understanding of current situation of makerspace now.

3.2 RESEARCH METHODS

The research method I'm taking first is to use literatures as context to understand maker movement and maker space in both western and Chinese context. Using policy reviews as a tool to relocate the role of maker space related policy in Chinese innovation system. Then comparative studies among 11 maker spaces in both Shenzhen and Netherlands for
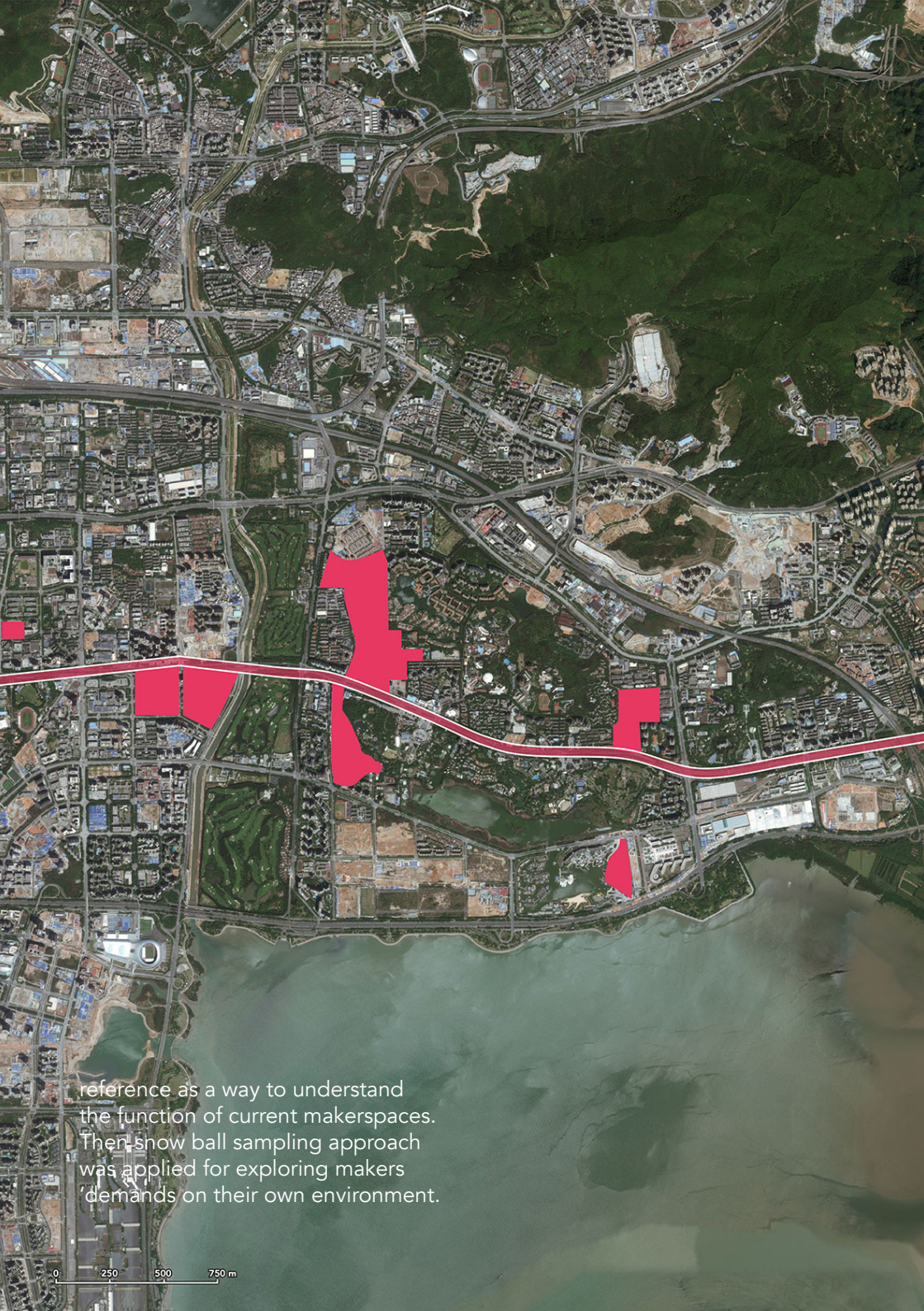
reference as a way to understand
the function of current makerspaces.
Then snow ball sampling approach
was applied for exploring makers
demands on their own environment.

0   250   500   750 m

Site Visit in Shenzhen
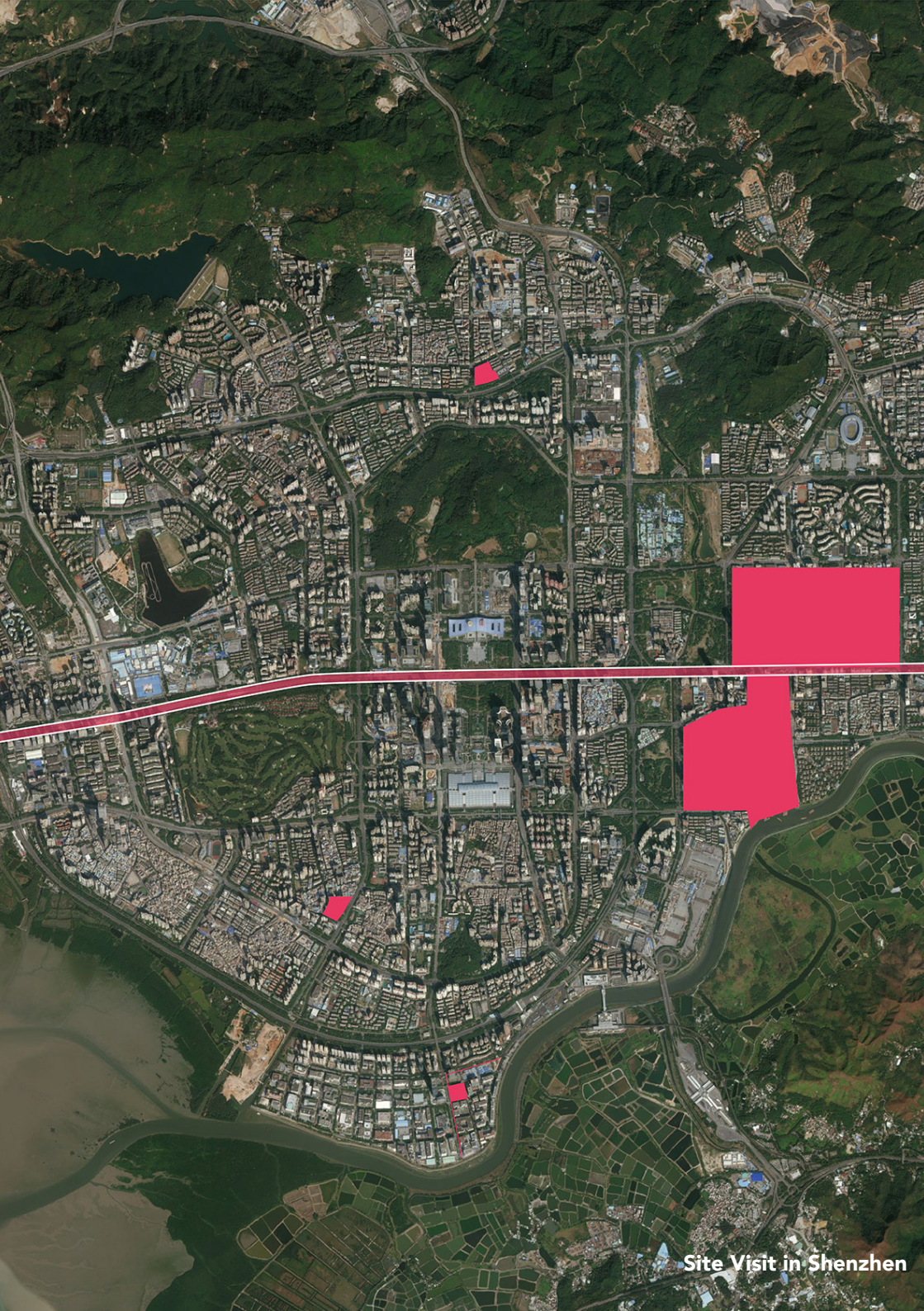
3.3 MAKER SPACE IN MAKER MOVEMENT

Maker movement is normally described as a new craft movement connecting craft and hobbies in order to recall the relationships with materials. Basing on online community and resources, makers could get instructions from plans, how-to guides and creation and retrieving schematic diagrams. Majority activities involved in maker movement are 'making' related, which means "to build or adapt objects by hand, for the simple personal pleasure of figuring out how things work", as Honey and Kanter (2013) stated. These activities include hardware kits assembling, fabric "wearables" creation and wood and metal work. Maker movement continues gaining momentum through Online Maker Community, Make Faire and Makerspace, physical maker community workspace. Dougherty (2012), who called Maker Movement as "experimental play", initiated the Make Faire in 2006 and it becomes a largescale event organized worldwide attracting thousands of local people. First Shenzhen Make Faire was organized in 2016 which attracted 200 thousand visitors in one week. With digital tools popularizing and being accessible, maker movement obtains the new characteristics, including the use of digital tools for creating products and design file standard. Meanwhile, cultural norms of collaboration have always been highlighted in advocating maker culture (Schrock, 2014). In that sense, maker movement is not only about technology but also a social practice and it connect individuals to materials,

social collaboration and global networks through the act of making, which as Lindtner (2012) describes, "technological and social practices of creative play, peer production, a commitment to open source principles, and a curiosity about the inner workings of technology".

Makerspace acts as the community centre for makers who have common interests, often in computers, machining, technology, science, digital art and electronic art to meet, socialize and collaborate. As physical community workplace, makerspace provides computer tools lending libraries and physical tool set lending libraries as a sharing resource for makers. As Figure 1 shows, makerspace normally contains quite rich set of tools for makers to cut away or deposit new material to create the desired shapes (Martin, 2015). The widespread of Fablab, Techshop,etc facilitates the growth of maker movement. According to the observation and research did by author, makerspace shares the four common functions namely education, production, discussion and operation. Education function refers to space for lectures, training and workshop. 3D printers, Laser Cutter and Tool set occupy certain area of space which combines with hand making area makes up the space for production. Operation space is more related to the computer-based work such as CAD file creation and operation of the open innovation software. In addition, discussion space is quite important among the members of makerspace for sharing knowledge and information. Four functions mentioned sometimes mixed as one open and sharing space design.

3.4 FROM SHANZHAI TO MAKING

In western context, making is seen as an innovative solution to existing social and economic burdens through bringing the production back to city centre again which was lost because of industry upgrading and globalization. Making enables "a return to a state of authentic, deep, and hands-on engagement with the world" and reengaging with tool set for production, the machine and materials but technologically enhanced. The library, the makerspace, the university lab and the garage where these DIY activities happen provides a safe confine of creative environment. Marketing as backbone of new industrial revolution, maker movement represents a utopian view which tells technological determinism. Tracing back the origin of maker culture in west, it shows close connection to US 1960 and 70s internet counterculture.

Different from interest based and hand-on experience of maker culture in west, the makermovement in China shows a strong rely on manufacturing. Isolating manufacturing from hobbyist making tends to render manufacturing as a dream site for technology innovation, as Lindtner (2015) stated, "This boundary work was performed not only through articulation in talks and writings but also through the setup of Chinese businesses such as DFRobotand Seeed Studio. China's makers articulated manufacturing as a site of both technological and cultural expertise." From government perspective, this redefinition of making directly link to economic development and innovation development Chinese which is essentially functional. As the explanation given by The

"Makers are devoted to innovation passionately. They control the production tools themselves. Taking 'user-innovation' as a core concept, they excel in discovering problems, unearthing (customer) needs, and providing solutions. Through creativity, design, and manufacturing, they offer a variety of products and service." (Yu and Deng 2015, cited in Wang, 2016)

Corresponding to this official interpretation, Chinese President Li Keqiang proposed two ideas, "Mass Innovation" and "Mass Entrepreneurship" and one year later he stated, "Making and creating is no longer a privilege reserved for the elites but an opportunity afforded to the greater majority of people." Although mass entrepreneurship contributes to open innovation and makes innovation available to grassroots actors, national attention on maker movement kind of formalized makers movement. What is missing in the definition mentioned above is the spirit of collaboration in multi discipline team and pleasure of doing for fun and creative ideology of "learning by making". The emphasis is placed on a dry industrialist take on innovation. In that sense, the maker movement in China is not grassroots dominant but more from blessing of national government (Wang, 2016).
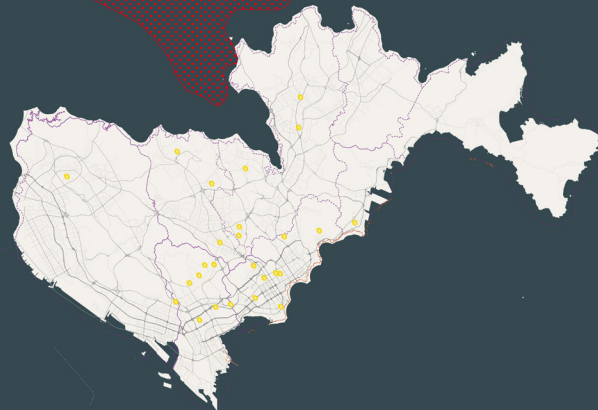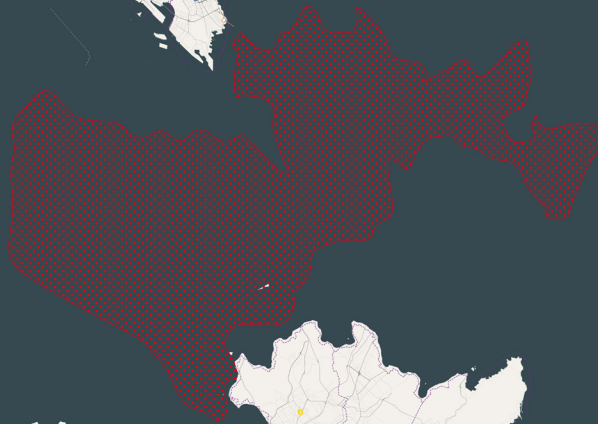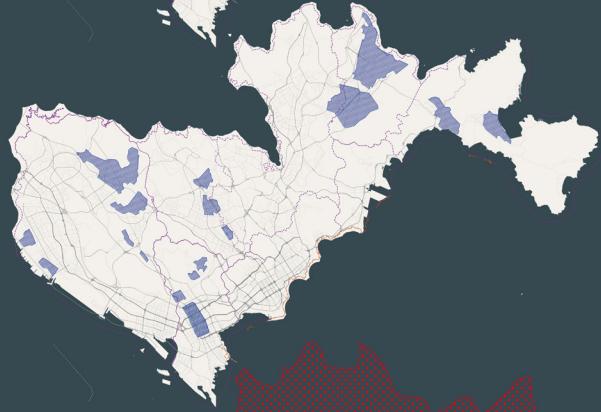
LAYER ONE

RESEARCH INSTITUTES
HIGHER EDUCATION INSTITUTES
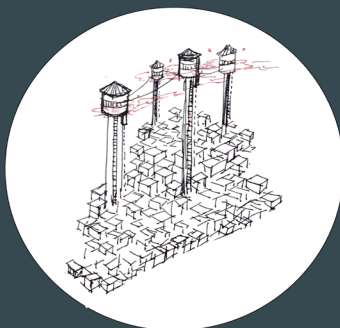
LAYER TWO

SCIENCE TECHNOLOGY PARK
SOFTWARE APRK
SCIENCE-TECH BUSSINESS CENTER
PRODUCTIVITY PROMOTION CENTER

GAP
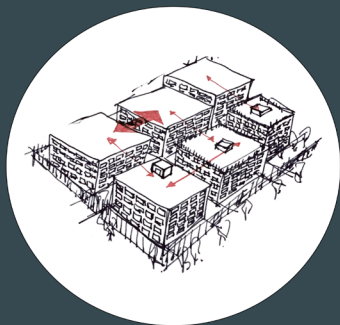
WHAT GOVERNMENT NEEDS
WHAT PUBLIC NEEDS
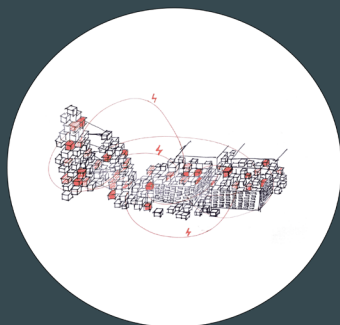
LAYER THREE

WIDESPREAD GRASSROOTS   EXPERIMENTA-
TION, FOR EXAMPLE, MAKER SPACE
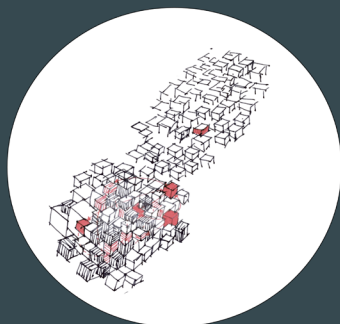
3.5 FROM SHANZHAI TO MAKING

In the western context, when maker culture is seen as backbone of next industrial revolution, research shows (Wang et al., 2015, Troxler, 2010) it would play a more important role in social aspect particular in social innovation. Such social innovation would be more connected to individual empowerment and community building. When western makerspace would function as a social space for community and individuals, another trend of production could be observed from China's makerspace. These makerspaces are not just related to hobbyist creation, but also production place which involved in long tail of manufacturing.

Anderson (2013) adopted the long tail theory in maker movement and this long tail model in manufacturing represents a twenty-first mode of production "anyone can access from Web browsers and scale up and down at will". According to him, the focus of our culture and economy is shifting from mainstream products and markets to less popular niche products and markets in the long tail which matches with the ideology of makerspace, "make what you cannot get from the market" (as Figure 2 indicates).
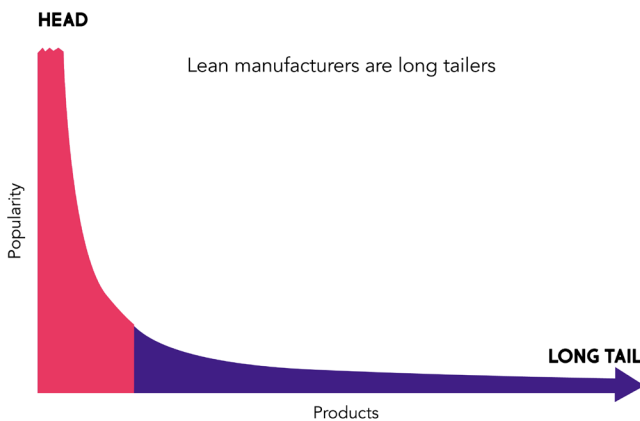
HEAD

Lean manufacturers are long tailers

Popularity

LONG TAIL

Products

Shenzhen owns a rich resource of cheap and good quality hardware which makes the industry connection easier compared to developed countries where manufacturing is outsourcing to developing countries and IT industry is well developed. The shifting from manufacturing to High-Technique Industry is related to the existing grassroots model in Shenzhen named Shanzhai model. When Shenzhen municipal government decided to upgrade the industry, Shanzhai which means copycats of brand products and electronic devices and but in much cheaper prices, especially in phones market where Nokia and Samsung are always become the target, became a widespread phenomenon in Shenzhen. Shanzhai Innovation at that time means easy copycat of successful goods in market (David, 2014). 30 years witnessed the widespread of Shanzhai Model from electronic devices market to whole manufacturing industry. Meanwhile, it goes beyond production as Lam (2016) emphasized, "Shanzhai model is increasing by applied to the entire open manufacture system development developed in Shenzhen as an ad-hoc model based on easy and open access to electronic components, ready to produce key solutions 'open boards' and a network of relationships and providers. It is more than copycat and products made by that way are even better than original brands". Benefiting from this Shanzhai model, Shenzhen is so called "Silicon Valley of hardware"(2016) in the documentary published by Wired which indicates the rich resource of hardware in Shenzhen after years of manufacturing development.

3.6 MAKING AS MANUFACTURING

As mentioned above, maker movement in China is more based on manufacturing and government tries to put strong emphasis on its role in industry chain acting as incubators. According to the survey conducted in Shenzhen by Ying et al. (2015), the network of makerspace in term of manufacturing not limited to local scale but also with global scale. The Diagram (Figure 3) shows how makerspaces are involved in industry chain and their roles will be more linked to "idea to Prototype", "Prototype to Product". In the stage from idea to prototype, it functions similar to Fablab or TechSpace these makerspace as community center for makers where ideas could be shared, developed and improved. Maker Faire as most known event for makers is used as for showroom of design ideas from makers to public.

MAKER MOVEMENT

The maker movement is a trend in which individuals or groups of individuals create and market products that are recreated and assembled using unused, discarded or broken electronic, plastic, silicon or virtually any raw material and/or product from a computer-related device.

Higher-educated,
research-based
economically-beneficial

MAKER SPACE

CHEAP HARDWARE

SHOPPING MALL

low-education
from contryside
high mobility

200,000

MAKER FIARE 2015 SHENZHEN

"The free, informal and open source systems through both makers and Shanzh manufactures operate has allowaed the development of a particular type grassroots innovation, particularly in Shenzhen"

DAVID, LI
CO-FOUNDER OF THE FIRST MAKERSPAE IN CHINA

	Idea to Prototype	Prototype to Product	Funding and Market Prediction	Small Scale Production
GLOBAL	TechShop.etc	Highway 1	Kickstarter VC from Los Angeles	Industry Chain Supplier
LOCAL	Chaihuo Makerspace TechSpace Makeblock	HAXLR8R TechSpace World Maker	KnewOne Demohour Shenzhen Bay	Small Scale Production: SeeedStudio Offline Sale Center: Huaqiang North Online Sale Center: Alibaba

.... Information Flow

———— Capital Flow

- - - - - Product Flow
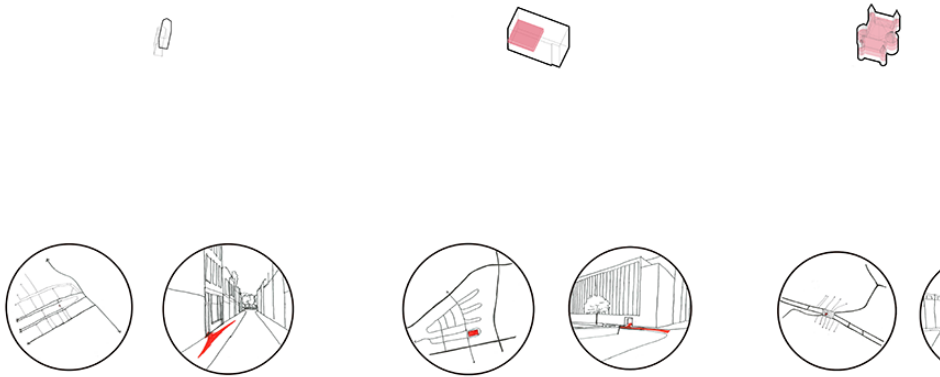
RENT

FUNDING	private	government	private
BUSSINESS MODEL	community-based	facility-based	facility-based
		Membership Fee	Membership
TARGET GROUP	Local Community	Local Community	General Publi

enterprise

resource-based

Fee

ic
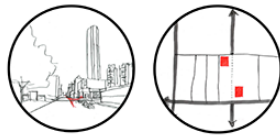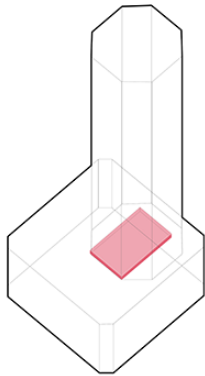
Start-up Teams

enterprise

resource-based

Start-up Teams
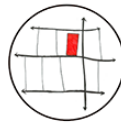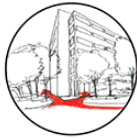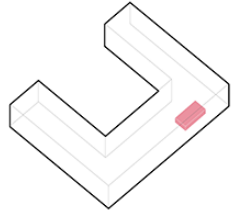
enterprise

government

community-based

resource-based
facility-based

General Public

Makers
Start-up Teams
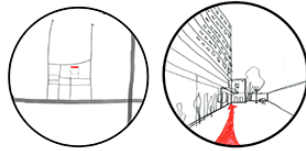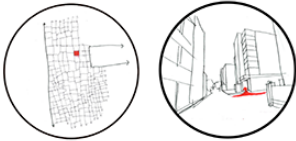
self-organized

private

community-based

innovation-based

Makers

Students
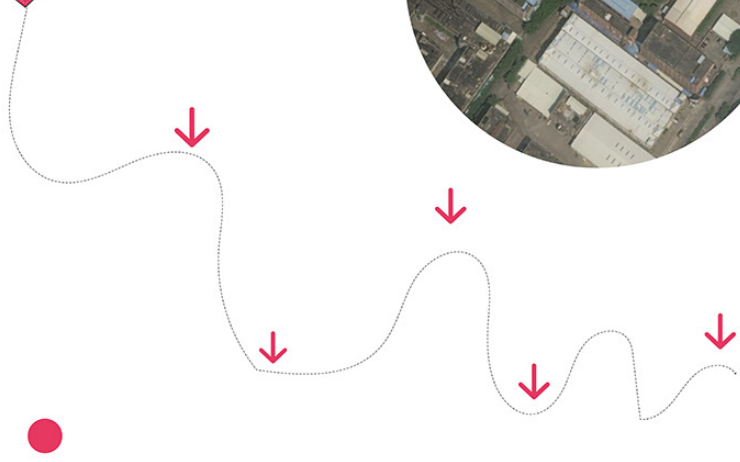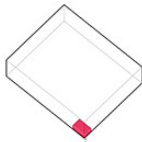
private

community-based

Flowing Children

By Arthour

3.7 MAKER SPACES IN SHENZHEN

In order to understand current situation of maker movement, I chose 10 makerspaces for detailed analysis either through interview or online information. These eleven makerspaces, three of which are located in Netherlands namely Plugemake (delft), Waag Society (Amsterdam), Stadslab (Rotterdam) while other seven makerspaces all locate in Shenzhen, namely Chaihuo Makerspace, Huaqiangbei International Maker Center, Seg Maker Center, Lichee Makerspace, Shenzhen DIY, Shenzhen Open Innovation Lab and Kidolab. According to the survey I did, I summarized them in diagrams considering the accessibility, business model, funding, target group, location, typology and entrance of them. These ten makerspaces focus on different functions and serve different target groups.

HARDWARE DESIGNERS
SOFTWARE DESIGNERS

INCOME 1,500 EURO/M

Idea to Prototype

Prototype to Product

Funding and Market Prediction

Small Scale Production

PART–TIME MAKERS

START-UPS
FOREIGH MAKERS

Idea to Prototype

Prototype to Product

Funding and Market Prediction

Small Scale Production
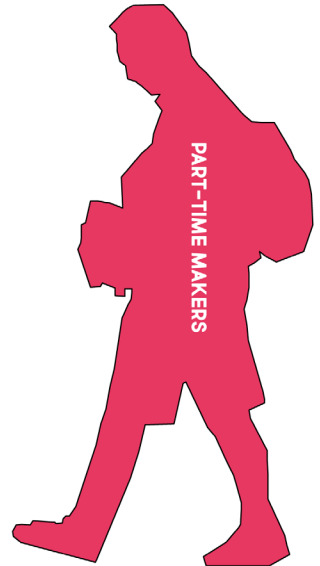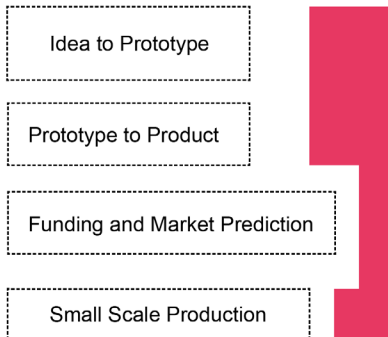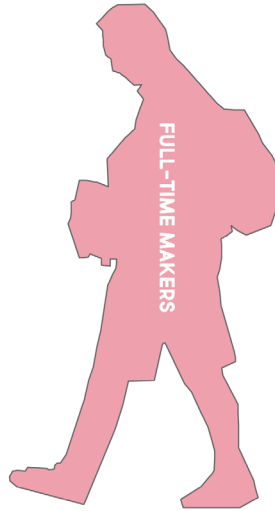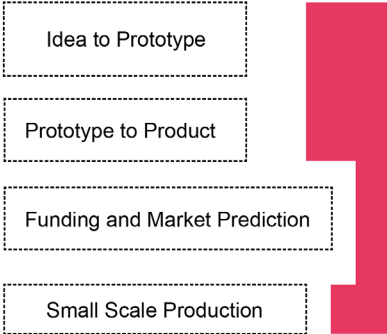
FULL-TIME MAKERS

PRIMARY SCHOOL
MIDDLE SCHOOL
HIGH SCHOOL

Knowledge to Idea

Idea to Prototype

Prototype to Product

Funding and Market Prediction

Small Scale Production

STUDENTS

WU

FABLAB WORLD MAP

SHANZHAI RESEARCH GROUP

LOCAL MAKERS

INTERNATIONAL MAKERS

Urban Planner

Maker

Researcher

Makerspace Manager
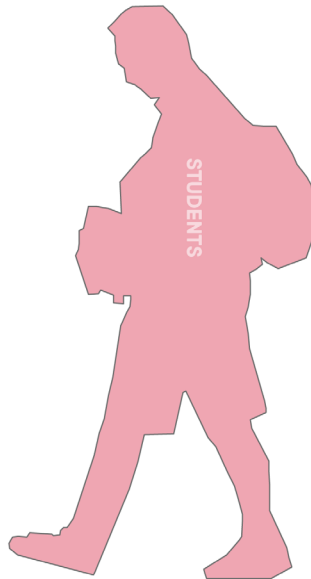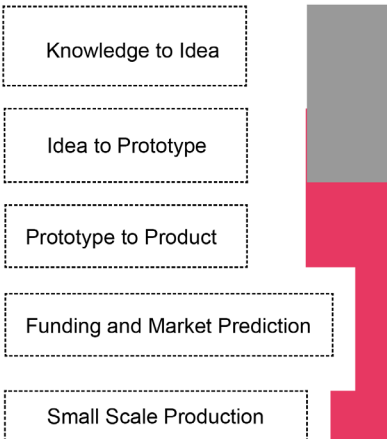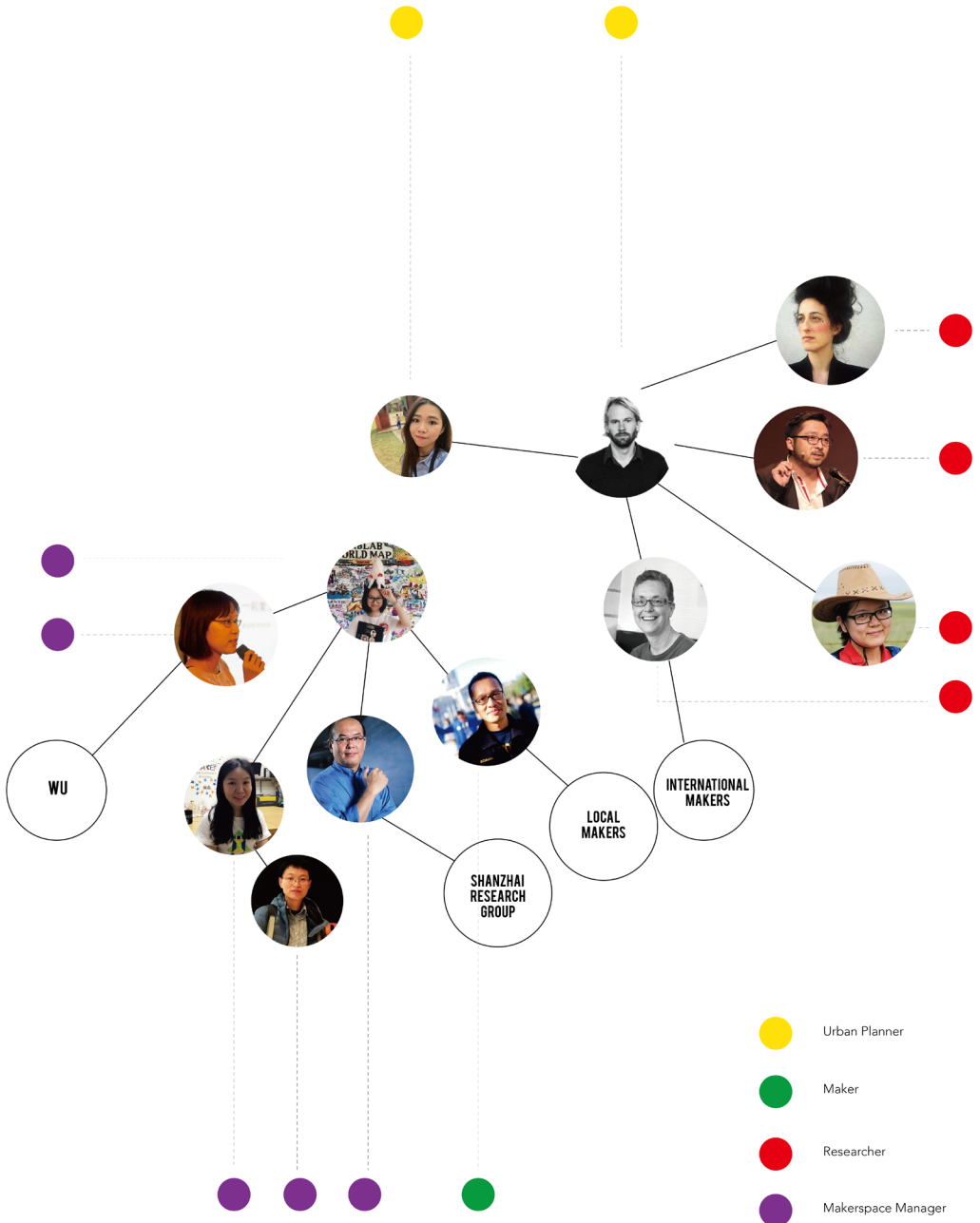
Curretn maker group in shenzhen consists of three mian groups of people, part-time makers, full-time makers and students. Part-time makers mainly consist of hardware or software designers. They have a good weel-paid job but tyring to explore the making by either interest or opportuinty for making money out of it. Full-time makers are made by start-up groups and foreigners, these two groups people seek cheap materials and investment in Shenzhen. What they need will be more related to investment and incubation. Students will require more studying resource from maker space which could contribute to their porfolios and application for university oversea. As one of the hidden group, the online chatting group provided a long run understanding about what they generally require in term of being a maker in Shenzhne. It shows what space quality needed for them to make it lifestyle.
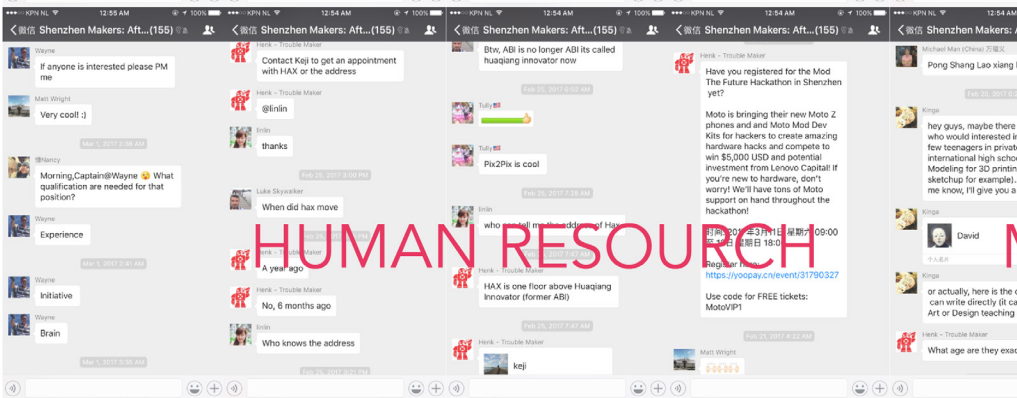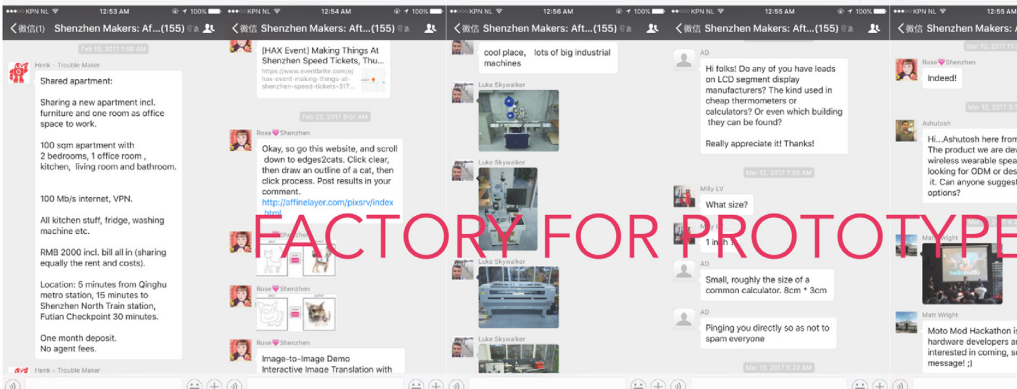
HOUSING   MATERIALS

FACTORY FOR PROTOTYPE

HUMAN RESOURCH
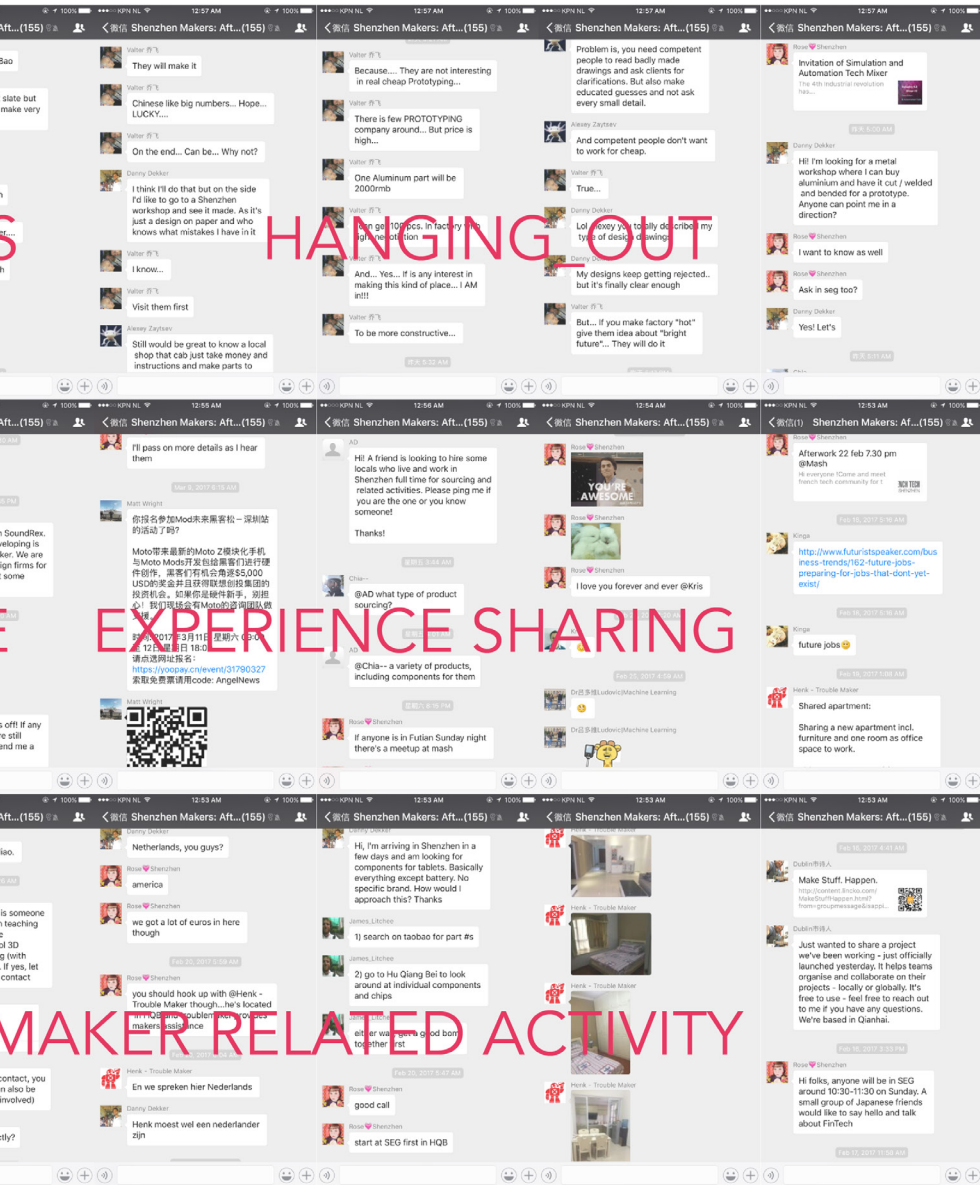
HANGING OUT

EXPERIENCE SHARING

MAKER RELATED ACTIVITY

3.8 VALUES BEHIND MAKER MOVEMENT

The values showed in maker movement in China indicate different attitude towards making this act. Martin (2015) summarized four main values behind maker movement including "playful", "asset and grow-oriented", "failure-positive" and "collaborative". Although these values still could be observed from activities happening in China's Makerspaces, the involvement of government leads to over emphasize on entrepreneurship and manufacturing aspect, which indicates a trend of connecting individual wealth to national wealth through maker movement.

Although Shanzhai model is supposed to be the main driver of transforming the ageing manufacturing into advanced industry production, two main group of this maker movement, one consists of entrepreneurs and companies who used to base on a copycat strategy of brand products, and the other a more international-oriented maker community do not share same values in this process. They are supposed to use the value of "open innovation". In fact, Rare collaboration happens between these two communities. Shanzhai community, this kind of open innovation means "total deregulation and a kind of coopetition that poorly masks fierce competition" when makers still struggle with 'open' and 'closed' commons (David, 2014). These two values are somehow merged by official definition of maker which would more functional and manufacturing based. However, this could be an opportunity for future development of maker movement in China about the value of open innovation.

3.9 EDUCATION, NEXT STEP?

Although Maker spaces will proliferate in China thanks to the government's blessing. Nobody can tell if a hundred potent ideas and start-ups—will spring out of those state funded creative spaces. Will these suffer the same fate as the hundreds of lacklustre creative industry clusters? As Wang (2016) mentioned, "Perhaps we should all look elsewhere, to education, for clues about how to assess the productivity of a state-consigned maker movement." There is ample evidence that something dynamic is happening in places out of media reach. Rudimentary makerspaces emerged long after 2015 in elementary schools and junior and middle highs, representing a less publicized grassroots effort made by tech enthusiast schoolteachers to introduce more culture to the next generation: "teaching children skills needed in a Makerspace and let children build what they want'. Most surprisingly, the prototypes of 'maker education' are found not only in prestigious schools but also in schools of less developed region. The onset of this phenomenon appears to be an attempt initiated by maker-teachers voluntarily.
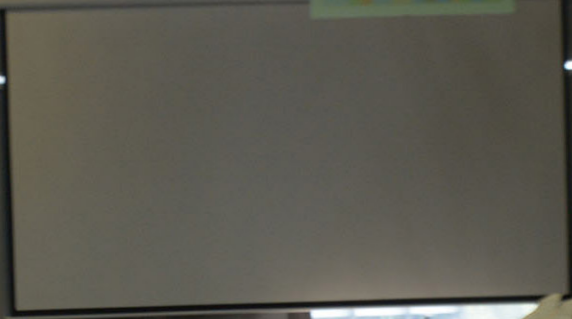
3.10 CONCLUSION

To conclude, the policy published by Shenzhen Municipal Government on promoting maker movement indicates that government tends to increase the influence of makerspace in economy, which makes making functional and economic. The value behind this strategy is different from what western makers advocate, doing for fun and doing in group. However, the Shanzhai model and localized maker activities makes the maker movement in Shenzhen own Chinese characteristics. Realizing the importance of this aspect and bringing more social benefits from this maker movement to public would be important for future maker development. When maker community is not a counter group anymore, more social responsibilities need to be taken by them for the benefits they earned from governmental support.

Values behind current maker movement decided that the purpose of majority maker spaces in Shenzhen are for manufacturing production only. Politics review would help us identify the mismatching between local demand and national culture. relocating makerspace in national innovation system would reveal the fact that gap exists between national cultural and grassroots risky culture in innovation.

Meanwhile, current makerspace does not meet the demand of makers which could be observed from the online chatting group. In order to foster the grassroots innovation development, we need to create relative infrastructure for them. . Political power already put a strong frame above the city where it could go further and it should go further. If such powerful frame is put on daily life of public, vitality and urbanity will definitely disappear in city. We expect that being a maker or entrepreneur could become a trendy lifestyle, however, no supporting life element could contribute to this lifestyle. Risk, Expense, Failure are three words that make people hesitate and stuck. For individuals, it represents the conflict between making as manufacturing and making as a lifestyle. How could urban space satisfy their demands in affordability and flexibility would be a challenge in city center area.

MAKER CITY 2.0

MAKER CITY 2.0

FUTIAN village
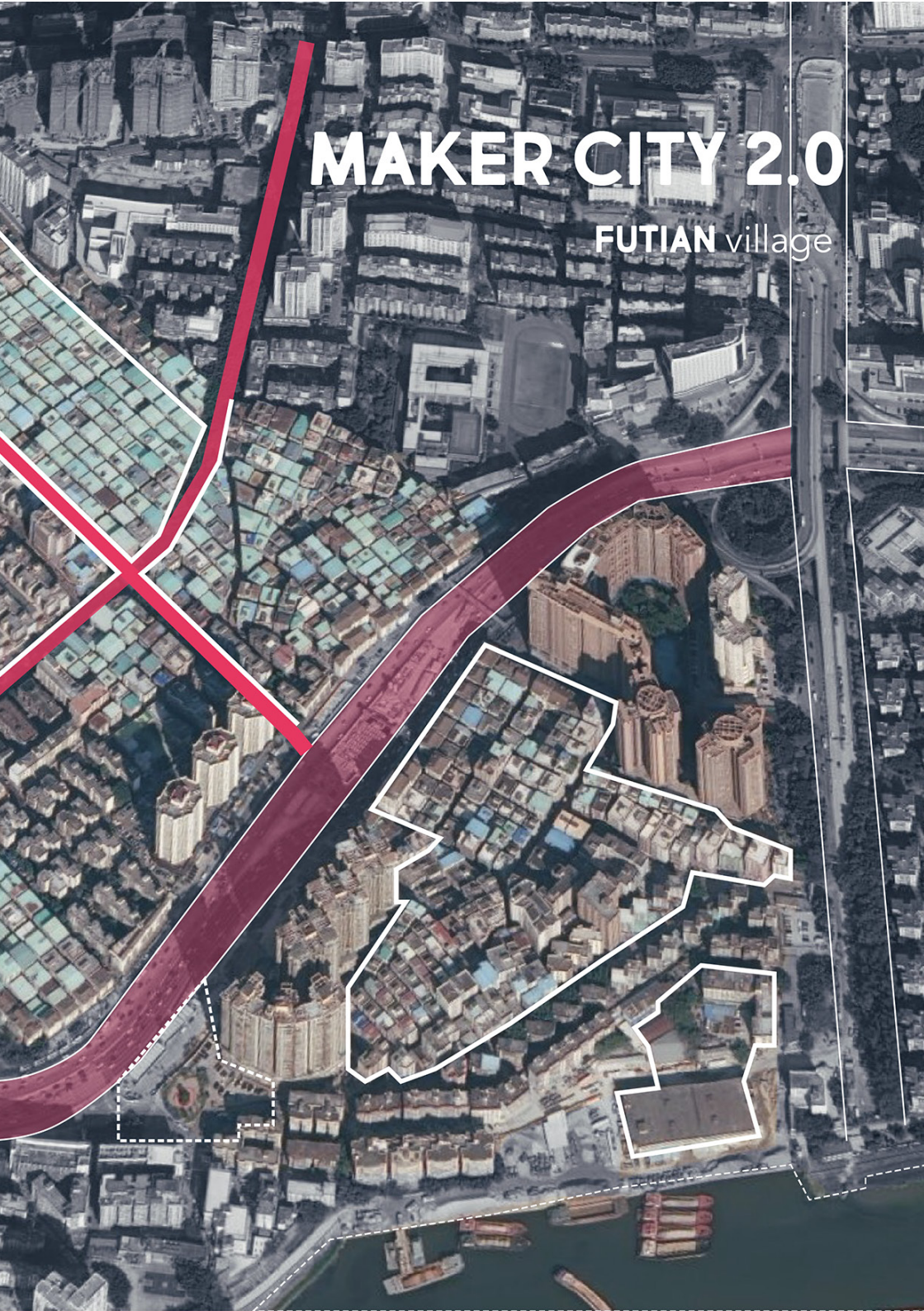
Maker city 2.0 is about inclusive urban redevelopment especially for migrants and how this group of people could contribute to the maker movement in Shenzhen. This chapter is trying to answer the question how could maker movement contribute to the inclusive urban redevelopment to form a urban design guidance? In order to argue for that, one case study has been chosenas to explore the answer of the question in real context. In Huaqiangbei area, there is one urban village called Futian Village which is the most affordable living place nearby because of Huaqiangbei's centeral location. Daily commuting between Huaqiangbei electronic market and Futian Village exists for long term. The relationship between Huaqiangbei and Futioan Village fucntions like living and working space, HQB providing job oppotuinty while urban village supporting affordable living in center Shenzhen. However, the possibility of

creating deeper connection between Huaqiangbei Commercial Area and Futian Village, not only in hosting people but social-economically would create an interesting discussion especially by invloving this new group of people, makers. The main argument regarding the spatial aspects of this has been that – on the one hand – the more codified the knowledge involved, the less space-sensitive should these processes tend to be. If – on the other hand – the knowledge involved is diffuse and tacit, the argument is that such interaction and exchange is dependent on spatial proximity between the actors involved. Only by being in the same local environment, and by meeting repeatedly in person, can and will such more subtle forms of information be exchanged (Bathelt, Malmberg and Maskell, 2004).

The aim of the following, therefore, is to develop a crude but still somewhat more sophisticated line of argument that geographical proximity between makers andmigrants would create at least communication between each other and enhance the tacit knowledge sharing creating learning by doing stomesphere.

4.1 RESEARCH AREA AND METHODS

Futian village locates in Futian Central Area and this village has an 800-year history, of which could be traced back to Song Dynasty. According to the CEO of Futian Village Join-Stock Company, The number of Futian Villagers who are living in HK are more than population who owns Hukou in Futian village.

Because of this village, Futian District in Shenzhen changes its name from Shangbu District to Futian District in 2000. Currently few agricultural lands remained, majority of the villagers prefer to doing business, which means renting the house built on collective owned land for housing renting business.

In the following content, fisrt analysis on three scales will be disccussed to generate three different visions for each scale. Then based on the strategy learned from Shanzhai study, it helps form objectives for each scale. Actions related to each scle will corresponse to these three objectives. Detialed actions wil be mentioned in the first scale, typology and urban village scales. However, knowledge on third scale will be further disccussed by introducing thee scenarios. It will explore possible and more complex future, which will come along with the recommendations of further research.

METHODOLOGY

ANALYSIS

SPATIAL A...

SITE
L

URBAN VILLAGE
M
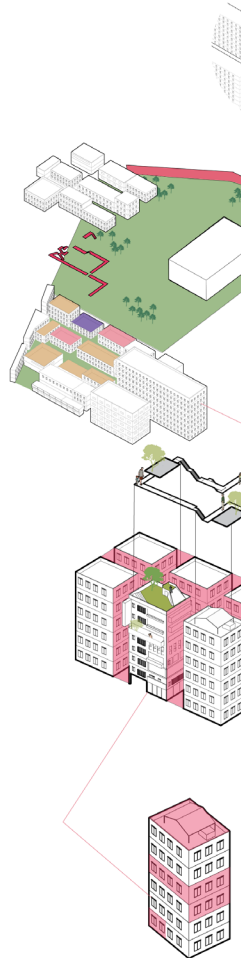
TYPOLOGY
S
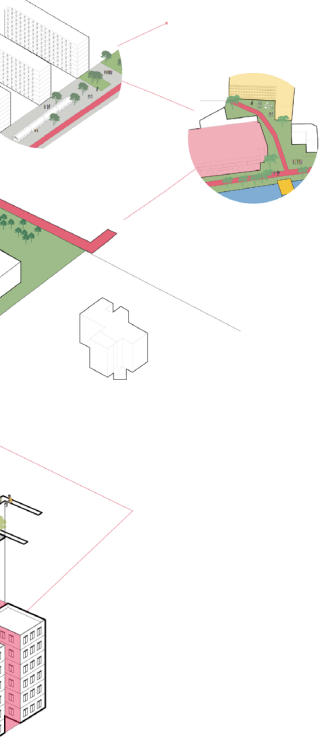
OBJECTIVES

BRIDGING

+Enhance the connection of
Futian Village to larger social
economic system
+Create New Centrality

AGGREGATING

+Provide more sharing places for
Live and work of different groups
of people especially for makers
+Forster the local economy especially
informal economy
+Enhance the internal connection of Futian Village

FRAMING

+Set Standards for tranforming current typology
to suitable living and working place for makers

Drawn by Author

4.2 CONTEXT

Futian village is located in the southern part of the Huaqiangbei Area and it is surrounded by variety of building typologies such as Danwei Buildings, Public buildings, Schools and Office. Such mixed typology threatened the existing of the urban village since the whole urban village is locked by the walls surrounding around. die soon if the heat continues. However, only energy from interval could really give birth to a new life.
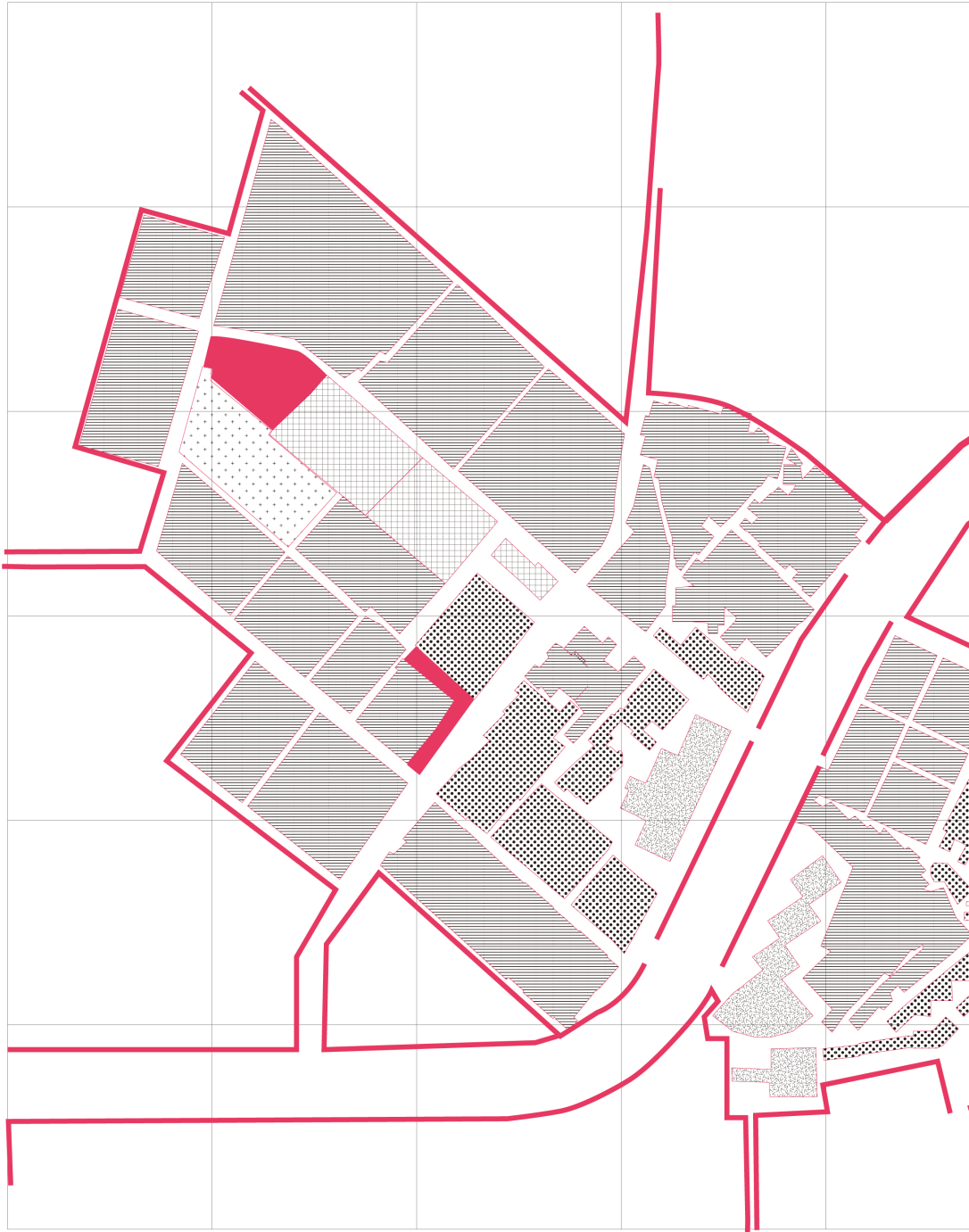
Meanwhile, these sorrounding typlogies functions as walls blocking its accessible entrances while decreasing accessibility. However, typologies inside urban village also shows a quite diverse situation where majority of space is occupied by Tongzilou (High density residential units in urban village).

Meanwhile, two public spaces could be observed from site visit and these two show a great vitality and urbanity while also noisy and crowded because they are full of people and activities during night time.

Industrial Buildings

Urban Villages

Danwei

High-Rise Residential

Public Buildings

Public Space

Fence

24M

16M

64M

INFLUENCE OF INSFRATRUCTURE

36M
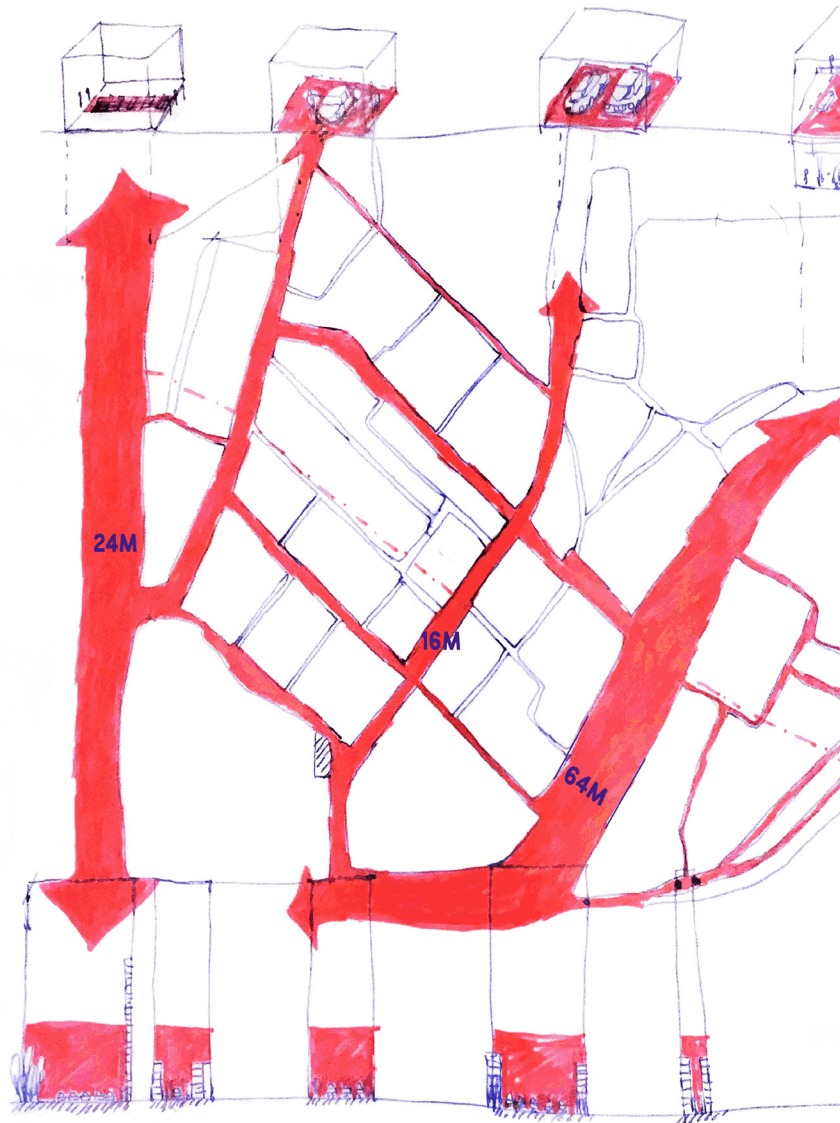
BY-PRODUCT

+Along the main road
+Under the Highway
+Parking space in urban village

Large public system is segregated by high way and infrastructures play an important role in opening up the urban village in a negative way since it occupies the previous pedestrian area. As the diagram indicates, the widest part road reaches 64 meter. Infrastructure and walls work together to squeeze the living space of urban village.

LIBRARY

KINDERGARDEN

TOO OLD 老年活动中心

村委会
老信息发让地机管理

WALLMART

PAVILLION

菜市场

Gated community. Primary school. 居居居
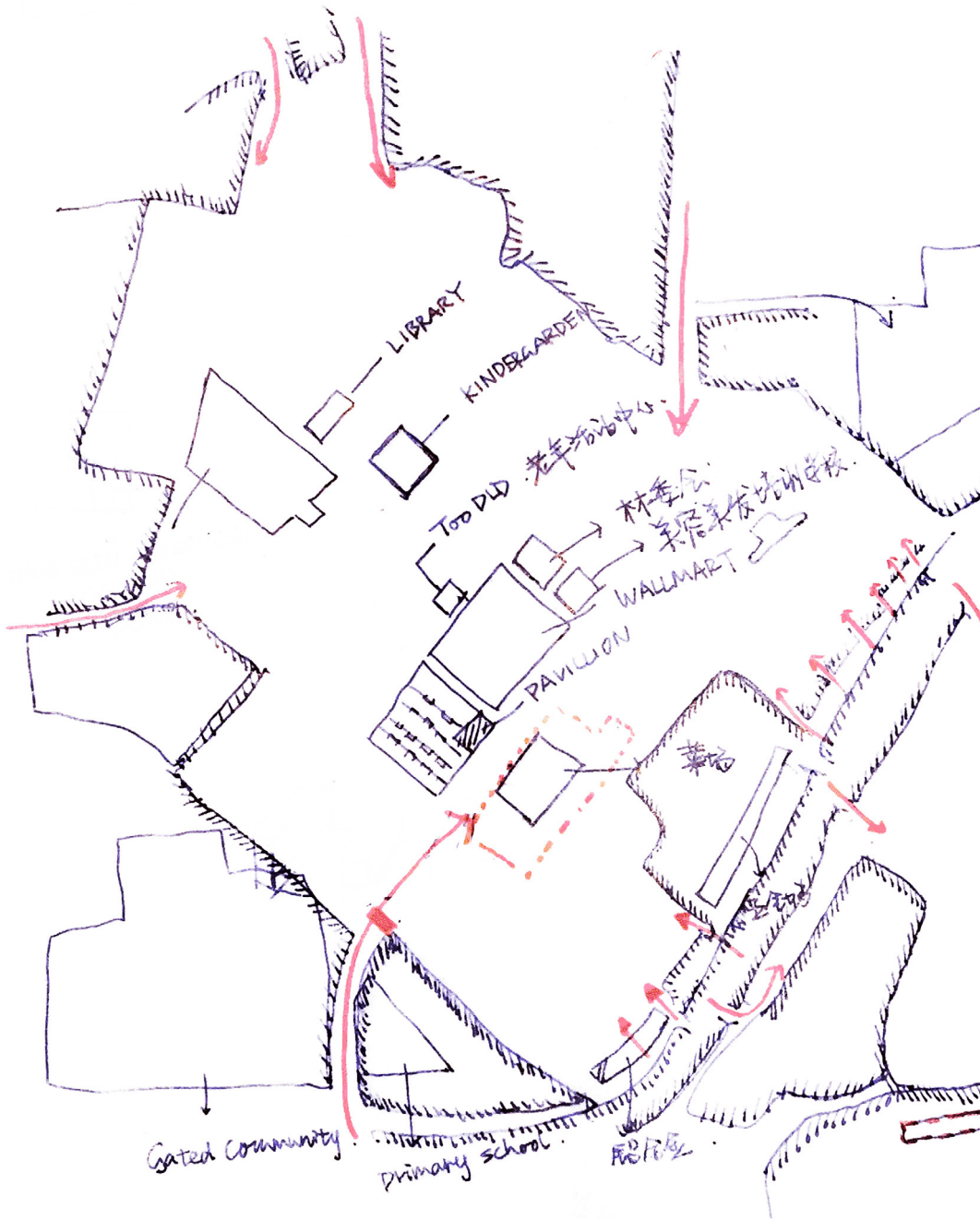
Site Visit Notes, hand drawn by YI YU

+ RELATIONSHIP TO EDGE ARAES.

+ ROOF ARAES

HIGH SCHOOL.
南华中府.
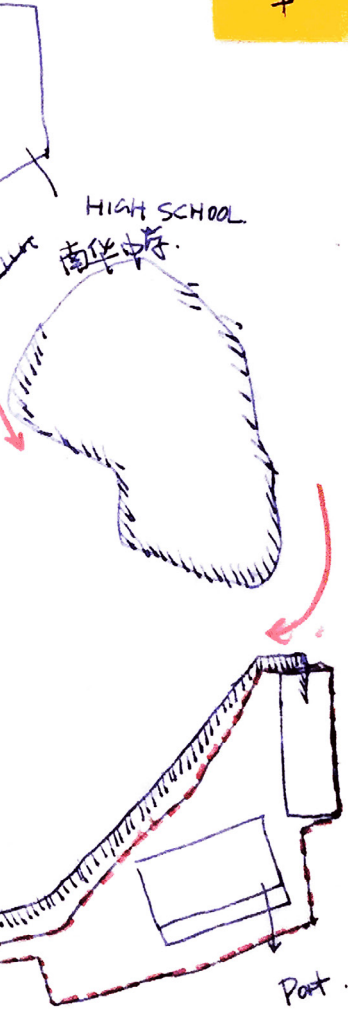
Port.

However, edge areas surrounding urban village all fenced by walls in a way claim the using right to certain typology. Urban village provides important daily services to migrants as well as residents live nearby. Fresh food market, restaurants, Walmart Supermarket all important daily life service guarante the affordable lifestyle in urban village.

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CO
+Dist
+Hav
+Sha
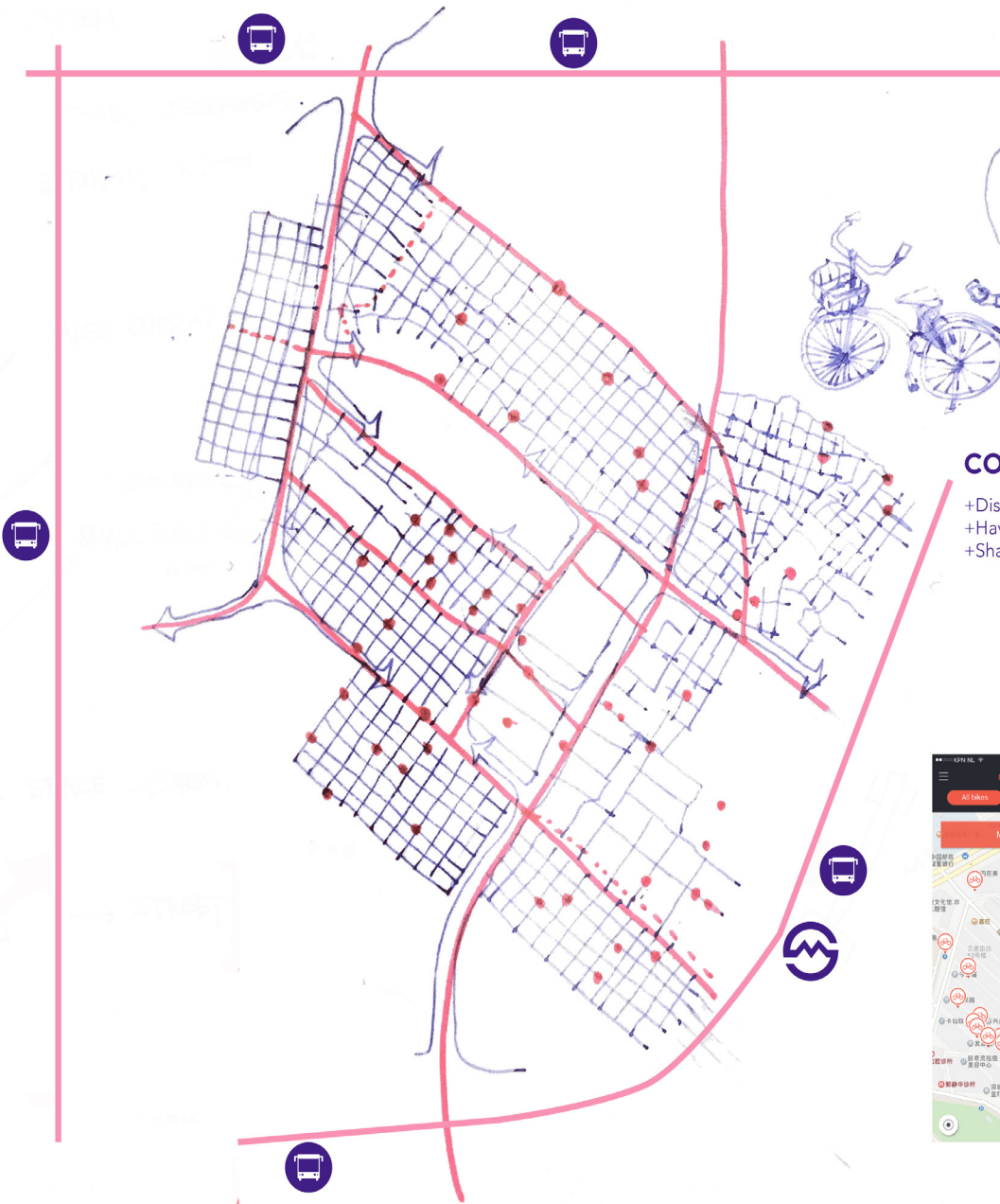
Site Visit Notes, hand drawn by YI YU
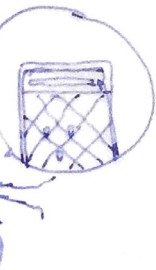
ONNECTION

tance between buildings is 2-4m
ve a good location in tem of public transport
aring bike is popular
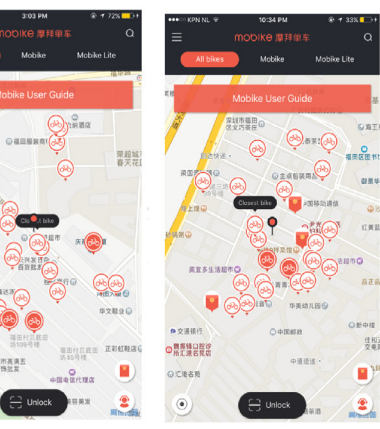
Although the village seems disconnected from sorrounding typology, its geographical location still provides its privilidge in accessing public transport. As you could observe from the map, Futian village has a good connection to public transport including one main metro stop and several bus stops.

With sharing bike becoming popular, people living in urban villages start to adapt to this new trendy transport means. The Mobike App (developed by one sharing bike company) shows how active people using sharing bikes in urban village. Although infrastrucutre seems to epxand in urban village, it does not stop people in urban village to obtain certain autonomy through sharing bike system. However, what is lacking in Urban village or does not correspond to the new phenomenon is that no bicycle lanes and bike parking areas are provided in urban village. Compared to car tansport, sharing bikes provide an equal opportunity for all people to enjoy the cheap public facility.

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4.3 ECONOMY IN FUTIAN VILLAGE

As the diagrams shows, majority of the business in urban village is about Small Bussiness and Housing Renting. For most of the villagers, they purely relay on housing renting for sustaining their lives. The economy activity of Villagers in urban village highly depends on the housing they get from collective land. The employment structure in urban village is quite simple: first type of urban villagers are either managers or safety guards of village joint company. According to Xie (2006), 5% of the villagers choose to work for village joint company. The second type is working outside village joint company and the third type is doing business their owns.

Except for all of these physical situations, the economy system of current urban village is highly dependent on migrants, no matter housing or small business all follow the money flow as shown in the diagram. Migrants are the source of money while only small return has been given by Village Joint Company for basic infrastucture.

However, the history of urban village tells certain similarity in term of limitation of economy strcuture. Although villagers no longer make a living by agriculture production, ideology behind current bussiness keeps the same. Why? The process of agriculture production follows certant circulation, which is about seeding, planting, croping and harvesting. collective land is what

villagers base their income on. They didn't plant any agricultural crops anymore but plant housings instead. Planting all these housings on collective land awaits for rents from migrants monthly, annually, which did not change the essence of resource monopoly. While villagers barely stay in these propoties, migrants seem to become real onwers of living spaces here. However, migrants did not own equally right to their living environments.

ECONOMY MODEL IN URBAN VILLAGE

SMALL BUSSINESS OWNERS

VILLAGE JOINT COMPANY

MIGRANTS

VILLAGERS

Money Flow in Futian Village

Infrastrucutre Investment

SEEDING

HARVEST

CROP

1980'S   1990'S
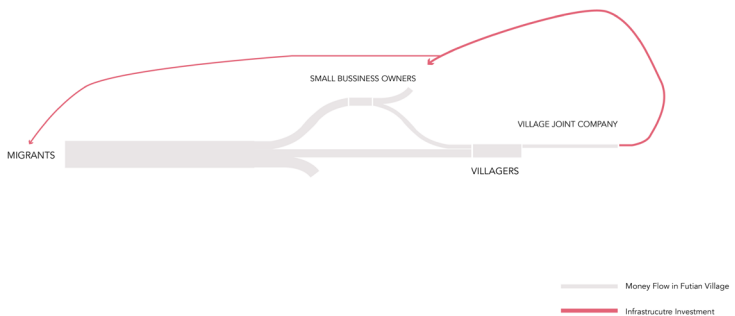
Same Ideology Behind Different Stages Development of Urban Village, Drawn by Author.

To summarise this part of analysis, social-economic system in Futian Village is relatively weak compared because of its exisiting economy system and pressures from surroudings. Typology attacks squeeze the space of urban village while still relay on urban village for affordable living. Thus, in order to strengthen the power of urban villages, we need to realize the social-economic system beyond physical strucutre and look larger networking. Here is a list of objectives for large scale of urban village:

4.4 OBJECTIVES FOR LARGE SCALE

+Increase the connection of urban village to larger public space system
+Create new centrality through foster the economic system within urban village
+Prevent the influence of car transport and foster the emerging transport means
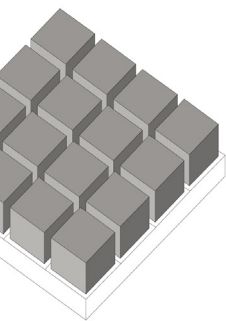
2000'S
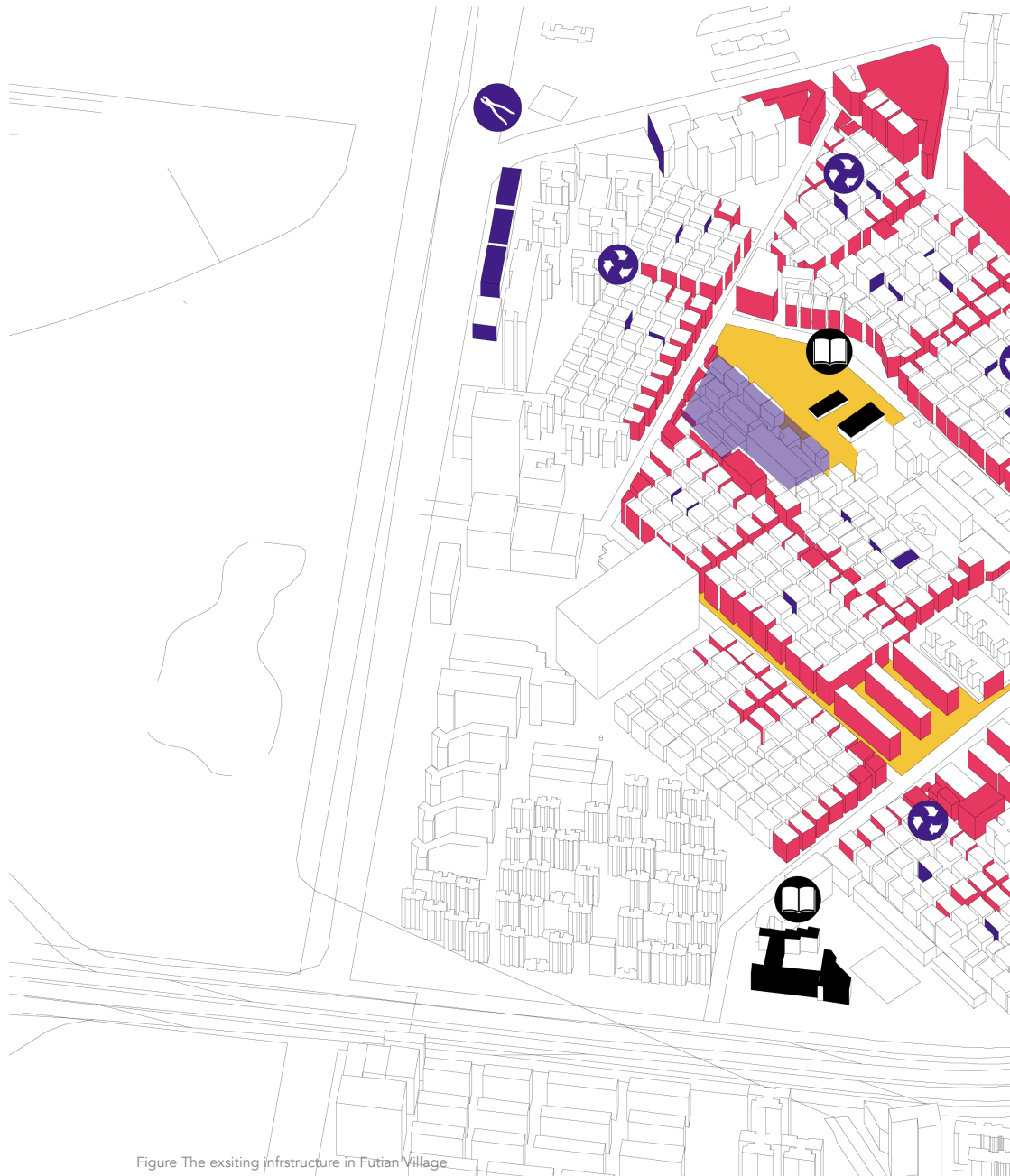
Figure The exsiting infrstructure in Futian Village
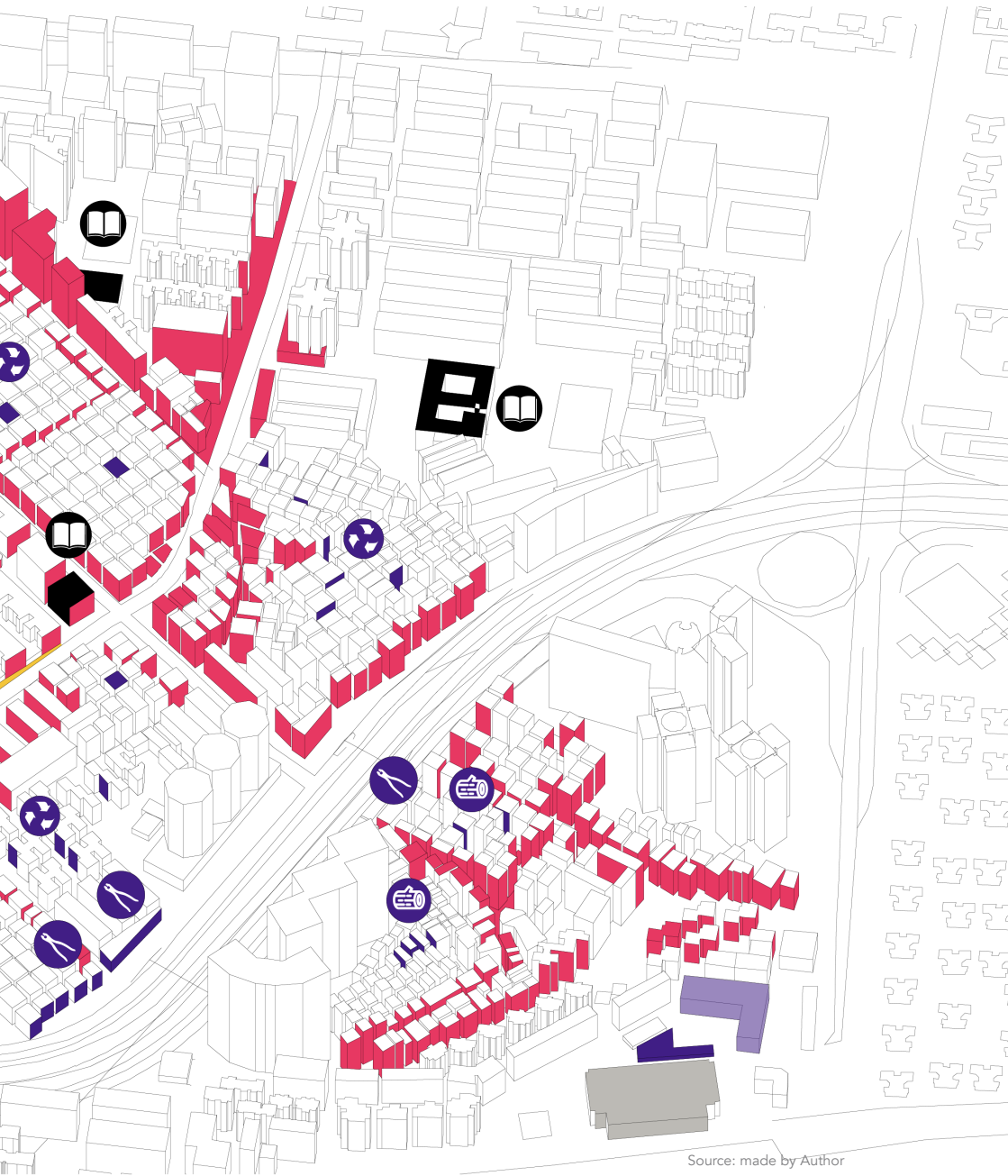
4.5 INFRASTRUCTURE IN URBAN VILLAGE

As you could see from Figure , urban village owns two main nodes for people gathering and contributing to public realms, Futian Square and Pavilion area. These two places are popular during nights even attracting residents who live nearby to come. However, public space is often too crowded and no varieties of public space are provided to meet different demands from migrants. The Futian square contains open area, stage area and two basketball fields while pavilion corridor is built for sitting and gathering as pics show.

Meanwhile, Futian village enjoys a rich resource of education because five schools locate either within or near urban village and one public library is built for serving both villagers and migrants. Such unequal inclination in education facilites is worsening the situation where social exlcusion happens.

Migrants choose to live in Futian village because of its central location and cheap rent price. It is a compromise between livability and affordability for them. Still have they individual demands in term of public space, activities, living environment, employment opportunity and education chance and maker group has even more specific demands for living and work environment which could be found through the research part of Maker City 1.0. These demands indicate the desire from individual development to collective life.

According to the interview of CEO of Futian Village, Village Joint Stock company intends to own more autonomy in redevelopment of Futain village and expects that hisotrical monumnets such as ancestral hall, stele could be perserved as part of history and stay as geniues of Futian Village. Since villagers own collective land right, they also have a long term view about the future of urban village and expect the land price would continue increasing in the future.
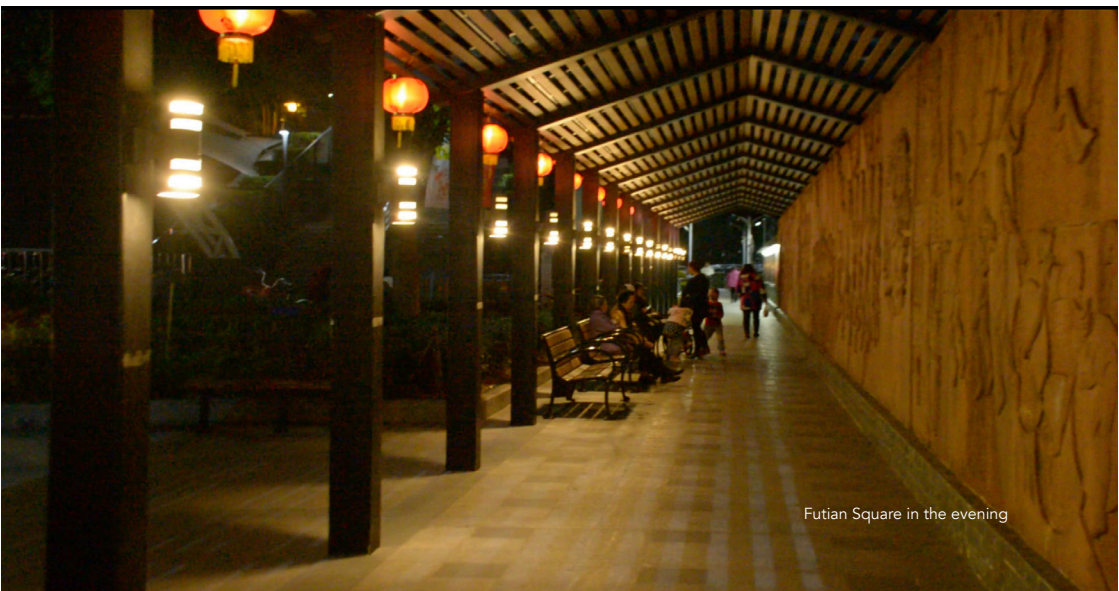
Futian Square in the evening

Extending function outside, photo taken by Author

Disccusion above hilighted the different demands from different stakeholders and also intends to hilight possible sharing interest among different social groups.

However, we are not only discussing about the physical environment of urban village, instead, the intangible network of the community needs to be strengthened. Futian village has a strong informal economy network such as second hand furniture shops, metal workshop, electronic shop and building material shop. Revealing these local social-economic network would be quite significant for next step of urban village. Maker group would also benefit from local production and connection through networking. Informal activities happening in Futian Village would contribute to lower barrier in grassroots innovation and encourage hybrids among among social activities and groups.

Extending function outside, photo taken by Author

Urban innovation arrives at a stage where gentrified post-industrial clusters become less attractive but lower-barrier collective innovation process, maker movements or the mass amateurization of invention, innovation and technology will become more significant in the future.

To sum up, this part analysis focus on existing infrastructures and possible demands of stakeholders. Based on above content, several objectives are proposd:

4.6 OBJECTIVES FOR MIDDLE SCALE

+Provide Sharing Facilities for different group of people,
+Provide Facilities for Makers which could help them work better in Urban Village,
+Intergrade maker production with informal economy in urban village to achieve more resilience, critical mass

4.7 DENSITY AND COLLECTIVITY

The street life in Futian Village shows a super densed life horizontally. As the diagram shows, ground floor is full of activities such as resturants, shops, clothing shops. All these small bussiness along with densed spaces shape the life between buidlings. Not clearly defined relationship between public and private facilitated more hybrids among different people and different activities.

STREET	SIDEWALK	FRONT OF HOUSE	BACK OF HOUSE
6m	3m	6m	3m
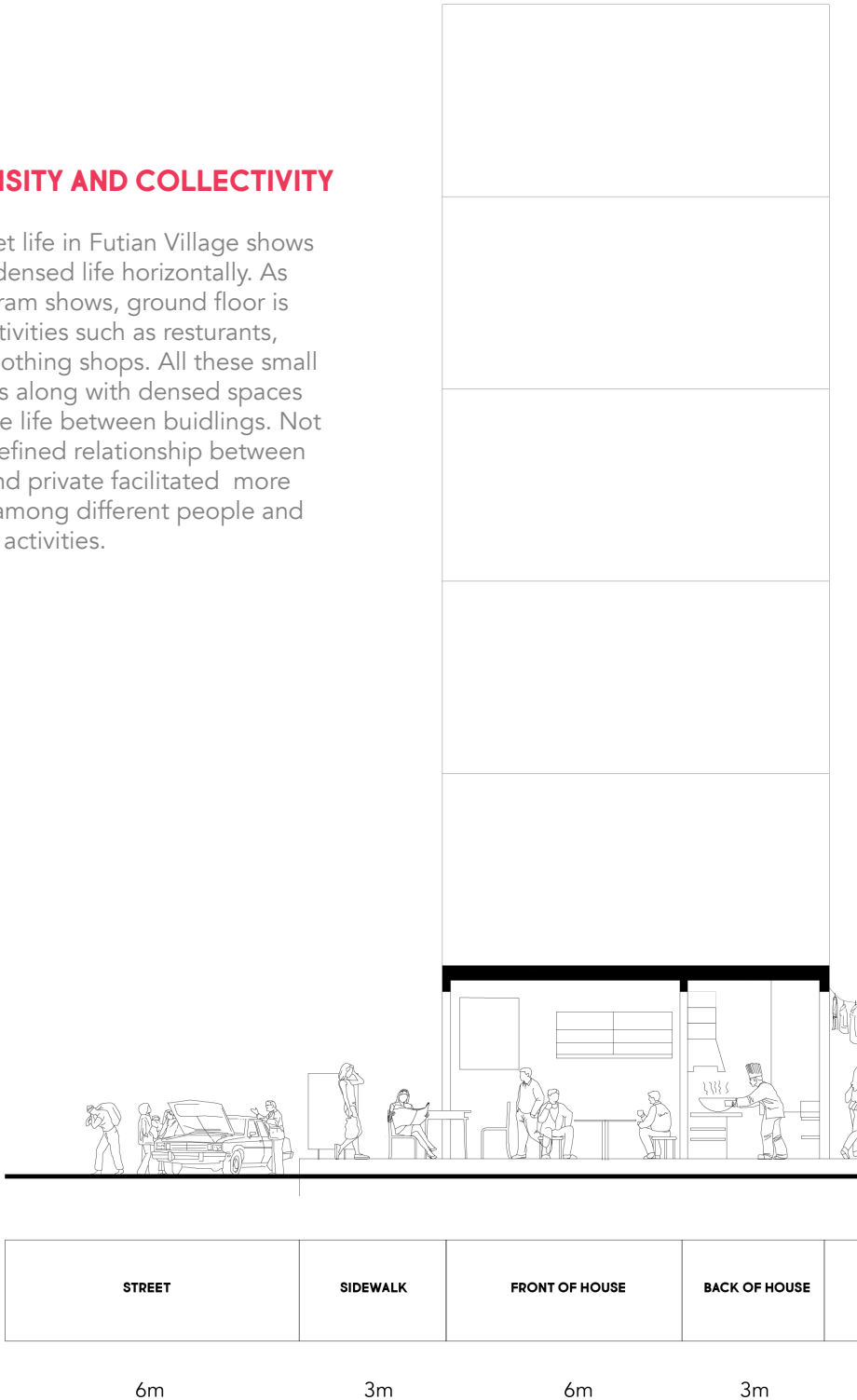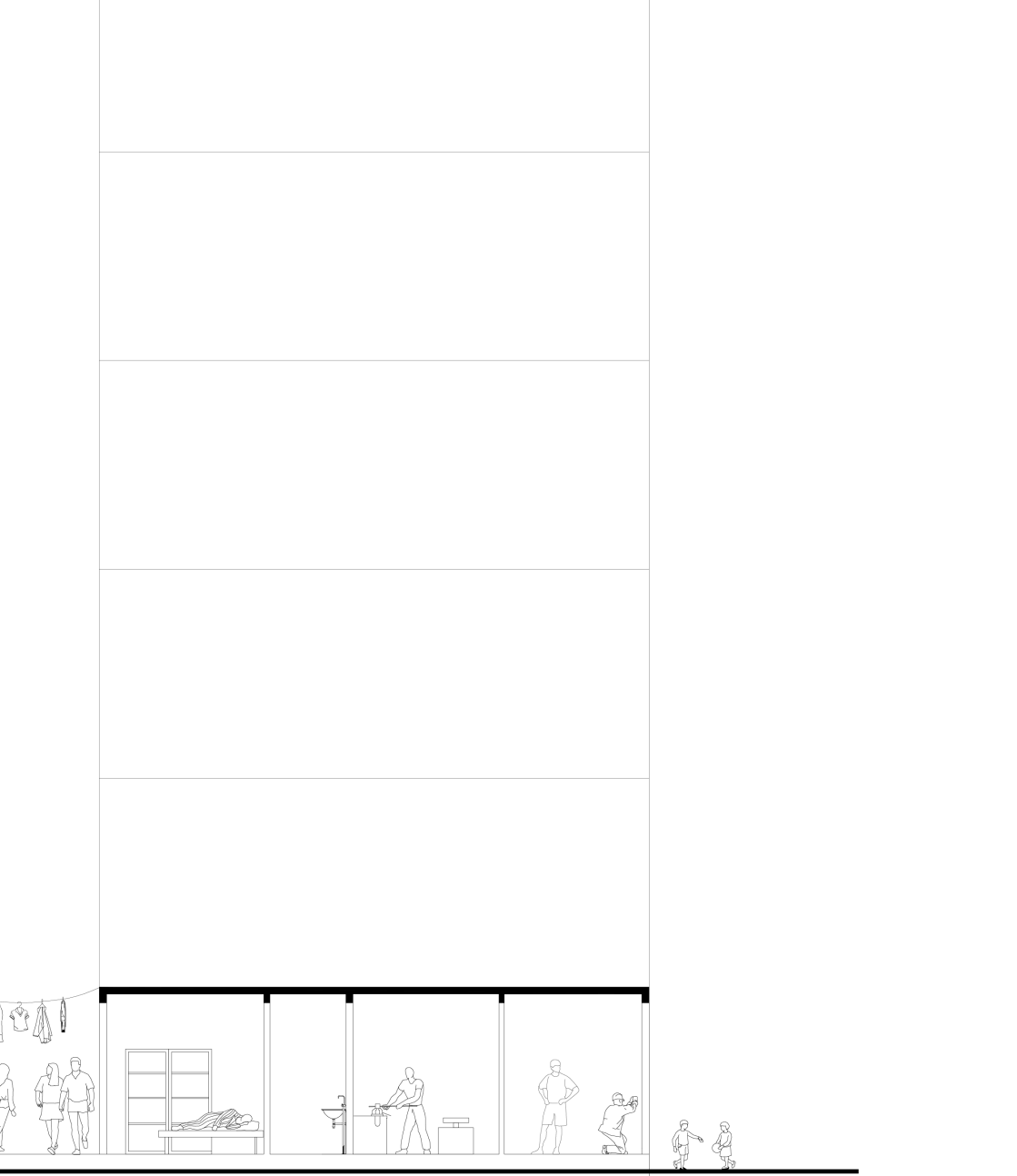
ALLEY

3m

A phenomena could be observed in urban village that house renters tended to extend their using space outward. In such high density living environment, room size is too small for people living inside to have a proper quality life and they could only sleep in their rooms at most time. Average size of the room is 5-8 m2 and biggest room in Futian Village is around 15 m2, without balcony and sometime even windows. So you could see many renters just dry their clothes in the sun outside, hanging clothes out of windows.

In addition, small business owners mostly

restaurants owners would occupy the street as sitting place for their customers and also working place for preparation of cooking. Except for using street for private purpose, people also use it for activities especially in small alleys. High density caused the emerging of negative space, including distance between buildings, roof area and edge area where another typology meet urban village. Migrants and villagers both intend to shape environment by them own but conflicts in environment they prefer. Utilizing these negative space would be challenging but also valuable for future space demand.

Urban Village Typology in Barcelona Block, made by Author
Original Image from Google Map

Density creates a controversial situation where migrants live in tiny room and enjoy limited sunshine, creating leftover space such as roofs, gaps between buildings while urban village obtains great vitality and urbanity from these hybrids among people and activities. Density in urban village itself is not problem but romantic about the density while forgeting that people would also desire better public space is problem. In order to attract new people, maker group, typology scale need to do certain redevelopment to meet demands of new group people without removing existing relationship directly.

4.8 VISIONS FOR DIFFERENT SCALES

LARGE SCALE
+Increase the connection of urban village to larger public space system
+Create new centrality through foster the economic system within urban village
+Prevent the influence of car transport and foster the emerging transport means

MIDDLE SCALE
+Provide Sharing Facilities for different group of people,
+Provide Facilities for Makers which could help them work better in Urban Village,
+Intergrade maker production with informal economy in urban village to achieve more resilience, critical mass

SMALL SCALE
+Turn the negative spaces into positive space, decrease the side influence caused by density
+Bring more sharing space into current typology to achieve more collectivity
+Quality living space for different groups of people and hope it could meet demand of evolutionary development, which means it need to be adaptive and flexible.

4.9 STAKEHOLDERS IN DIFFERENT SCALE AND DIFFERENT VISIONS

Urban village is the gathering place for individual freedom, collective contract constraint and national machine. Villagers who lost their agricultural lands in market driven economy could only use their homestead land as means of production for fighting with government. Meanwhile, This tool, their homestead land, house the fact that other means of production and production tool temporality lack of farmers. It provides the opportunity for urban village to get appropriate means of production. However, this kind of way of production does not meet the demand of upper class for overall urban development. Inefficient capital accumulation model could not become the source of stable life of middle class.

Government: could not obtain highly skilled human resource and income. Meanwhile,

urban village locates in ideal money source location. The relationship between urban village and other areas in city center is about consumption and labors.

Farmers: only own lands, the existing problem is that they lend their use right to migrants waiting for relocation and get subsidy from that. Compared to surrounding area, lands in urban village still keep for agricultural purpose, from cultivating agricultural products to housing rent.

Village Joint Company: Responsible for operation of infrastructure and daily facility of urban village. It has relatively large power in decision makinyg but is still constrained by villagers and local government. Lacking of money to transform the space

Migrants: Live in urban village and enjoy the convenience provide by urban village but have to bear the bad living environment.

Using urban village as a springboard to their better life, lacking identity to this site but own individual identity.

Developer: another pole of center of power, it represents the enterprise credibility for the endorsement. It expects to have further development through land space.

This stakeholder analysis definite the power difference of different stakeholders, predicating the difficulty of application of one action in different scale. As diagram indicates, building typology scale would be easier than any other scales since the stakeholders involved are much less than any other scale. Thus we would suggest that actions would start from smallest scale, building typology to influence target groups immediately.

SCALES

ACTORS

MIGRANTS   Migrant Workers
               White-Collars
               Small Bussiness Owners

← ————————————————— MAKERS

Villagers

Village Joint Stock Company

Urban Planning Bureau
Futian District Government
Developers

Urban Planning Bureau
Shenzhen Municipla Government

SHARED VISION

CURRENT PLANNING SYSTEM

POSSIBLE ACTORS

Better life quality

URBAN REGENERATION MODEL
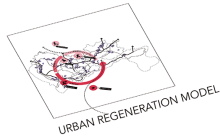
Creative Workers

PROFIT

AREA-BASED APPORACH
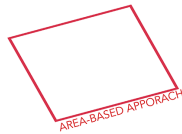
Enterprises

NGOS

Huaqiangbei International Maker Center

REGIONAL STRATEGIES

Enterprises

MAKER CITY

METROPOLITAIN VISION

According to the stakeholder analysis, migrants and makers have limited power in deciding anything related to future development of urban village while village joint stock company enjoys great power in influencing the future development locally. Since villagers owns collective land right of Futian Vilage, the future pathway of Futian village is decided by them only while government influence it in district, regional and metropolitan levels. Even though government has shared vision in district, regional and metropolitan levels, urban village does not have a vision corresponding to governmental vision.

Cooperation with government is quite important in future development of urban village in term of resource and legal statue. Especially in current planning system, area-based approach is missing and local social-economic system has been ignored. Classic urban redevelopment mechanism is based on removing exsiting typology along with exsiting social relationship. It gives a hint that through empowering local system and networking may lead to a different urban redevelopment mechanism that is not exclusive. It sees urban village as an opportuinty because of its affordable characteristic which will lower the expense for success and decrese the risk of failure.

Buildings are the most tangible assets of urban village and represent relatively permenant infrastrucutre in urban village. Under the situation where people are constantly

coming and going. Housing would affect their lives immediatley once they choose to live in these buildings. Also considering the difficulty of operating actions, redevelopments on buildings would only relate to three main actors.

4.10 STRATEGY

The social theory of space and the theory of the space of flows. Space is the expression of society. Since our societies are undergoing structural transformation, it is a reasonable hypothesis to suggest that new spatial forms and processes are currently emerging. The purpose of the analysis presented here is to identify the new logic underlying such forms and processes.

The task is not an easy one because the apparently simple acknowledgement of a meaningful relationship between society and space hides a fundamental complexity. This is because space is not a reflection of society, it is its expression. In other words: space is not a photocopy of society, it is society. Spatial forms and processes are formed by the dynamics of the overall social structure. This includes contradictory trends derived from conflicts and strategies between social actors playing out their opposing interests and values. Furthermore, social processes influence space by acting on the built environment inherited from previous socio-spatial structures. Indeed, space is crystallized time.

NATIONAL ENTERPRISES

SHANZHAI BUSSINESSMEN

HUAQIANGBEI COMMERCE COMMUNITY

FRAMING

AGGREGATING

BRIDEGING

MANUFACTURING MAKERS

CONSUMERS

GOVERNMENT

Informal   Formal

Government Recongnized the Legal Statue of Changing Industry Block to Commercial Purpose

Keep Outdoor Advertisements and Organize Commercial Promotion Events in HQB

GOVERNMENT

MAKER GROUP

MIGRANTS AND SMALL BUSSINESS OWNERS

MANUFACTURING MAKERS

CONSUMERS

GOVERNMENT/DEVELOPER

FRAMING

AGGREGATING

BRIDGEING

Informal   Formal

Maker movement is still at the stage of framing which requires more stakeholders to foster its development into aggregating and bridging stage.
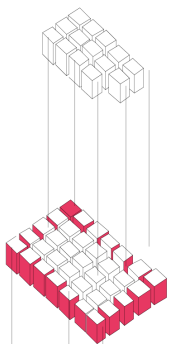
Our society is constructed around flows: flows of capital, flows of information, flows of images, sounds, and symbols. Flows are not just one element of the social organization: they are the expression of processes dominating our economic, political, and symbolic life. If such is the case, the material support of the dominant processes in our societies will be the ensemble of elements supporting such flows, and making materially possible their articulation in simultaneous time (Castells and Castells, 1998).

Thus, when I consider the integration between maker group and existing migrant community in urban village. Intangible network will be emphasized instead of only focusing on physical infrastructure in the urban village. Specificly how physical space could contribute to smoothen the flow of money, knowledge and materials.

4.11 ACTIONS FROM SMALL SCALE

This stakeholder analysis definite the power difference of different stakeholders, predicating the difficulty of application of one action in different scale. As diagram indicates, building typology scale would be easier than any other scales since the stakeholders involved are much less than any other scale. Thus we would suggest that actions would start from smallest scale, building typology to influence target groups immediately.
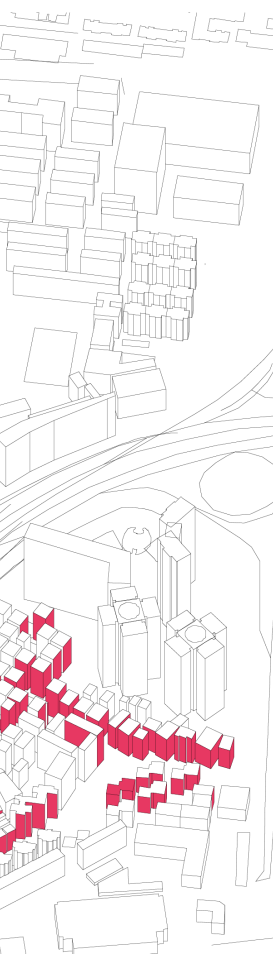
SMALL SCALE STRATEGIES
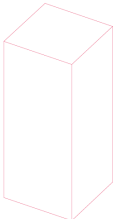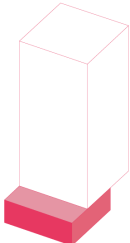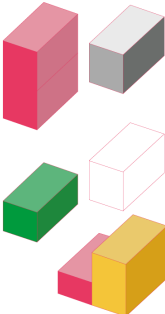
MIXED-USE

PUBLIC SPACE
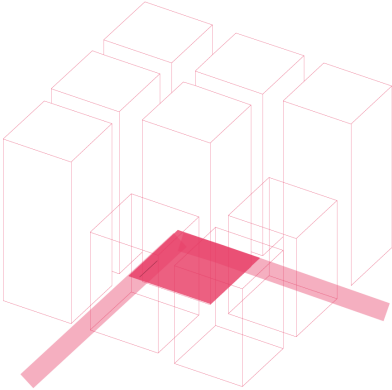
STREET CONNECTION
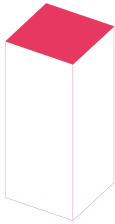
ROOF AREA AS
COMMUNITY SPACE
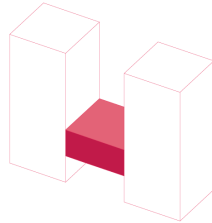
EXTENSION BETWEEN BUILDINGS

Intervention will focus on single building and strategies proposed
will use building itself as source of sharing space. Instead of only for
residential usage, new group people-maker would bring new facili-
ties to buildings along with economy model for micro scale.

SMALL SCALE STRATEGIES

House Renters

Small Bussiness Owners

Villager

House Re

Small Bus
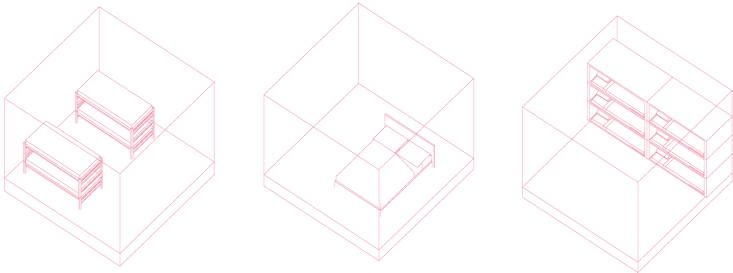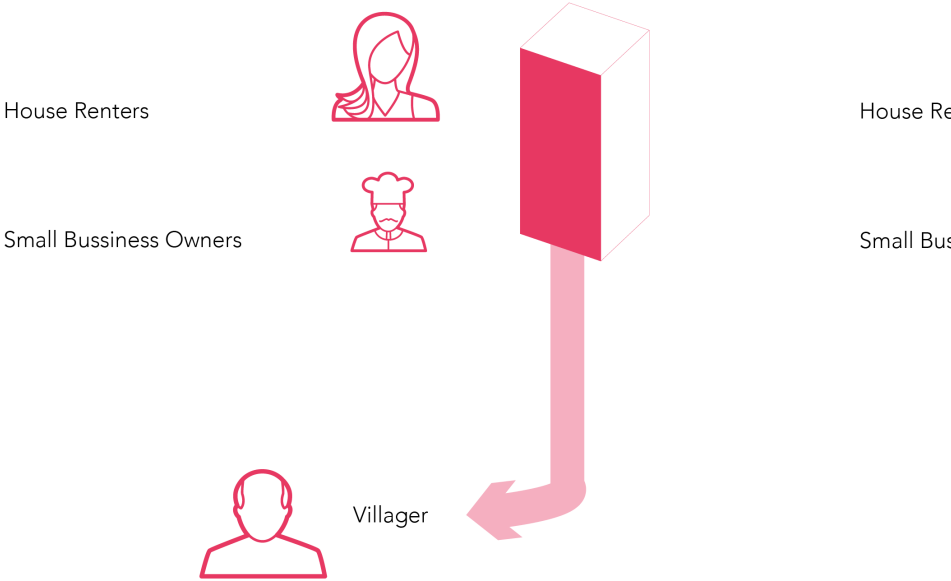
Flexible Room Size Provision to Meet Demands From Different Groups

enters

ssiness Owners
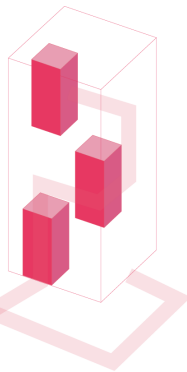
Maker

Villager

Enterprise/Government

In term of co-development model, villagers will be invloved long term investment. Around 10-20% of the buildings could be used for makers specific. Makers are aloowed to change interior space by themselves and get cheap renting fee. As a return, villagers could get certain amount of the interest by maker or government.

ACTIONS FOR SMALL SCALE INTERVENTIONS

Balcony ○

Ground Floor Sharing Space ○
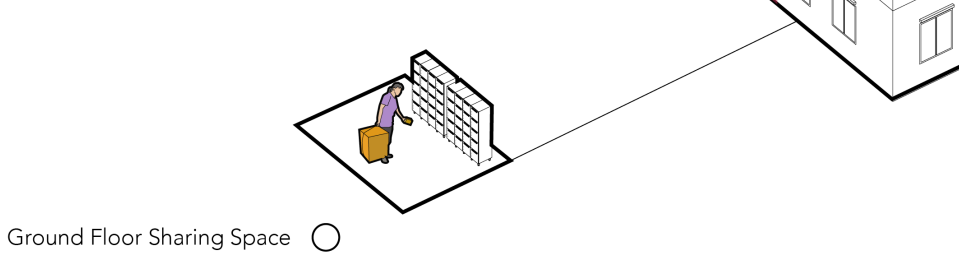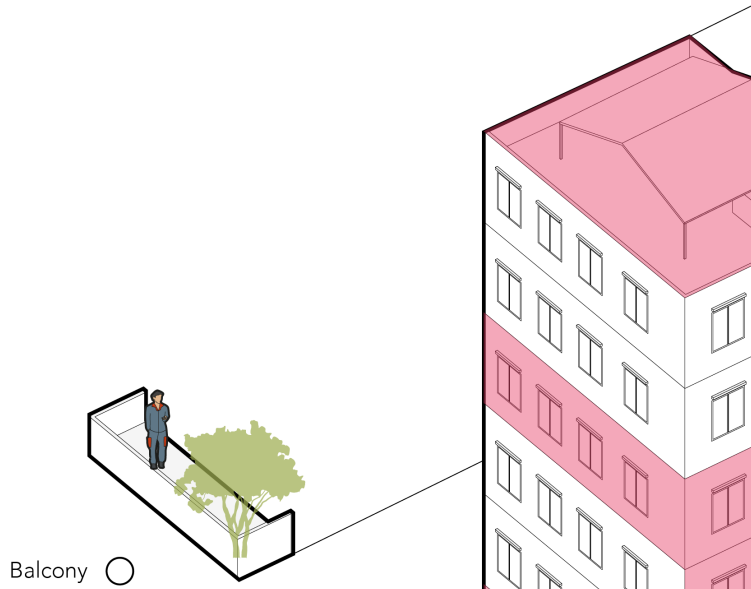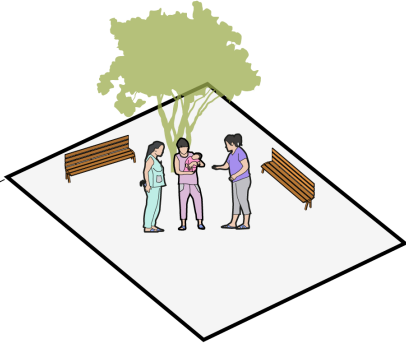
○ Roof Community Space
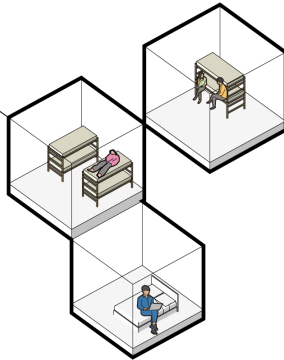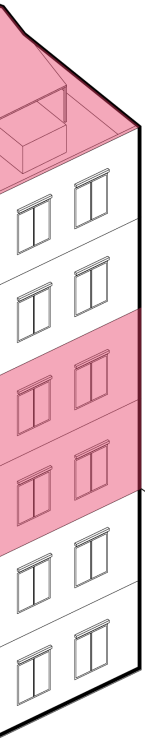
○ Flexible Living Space
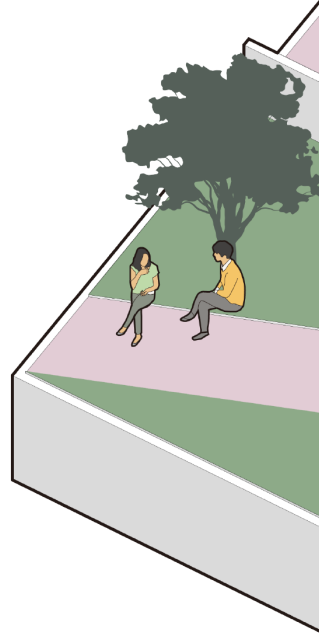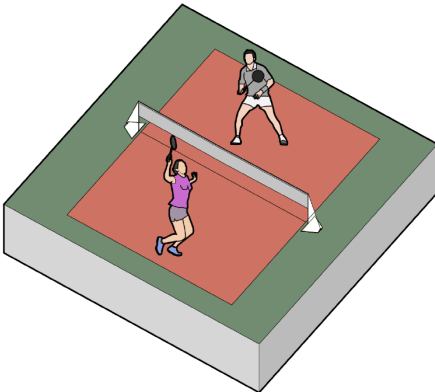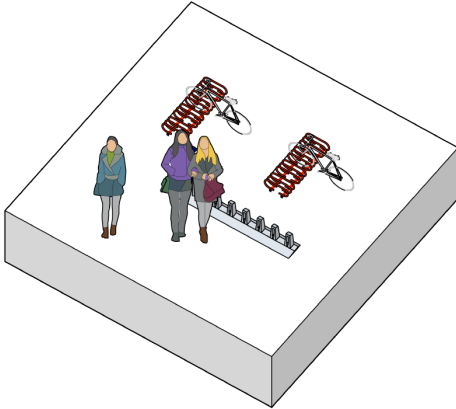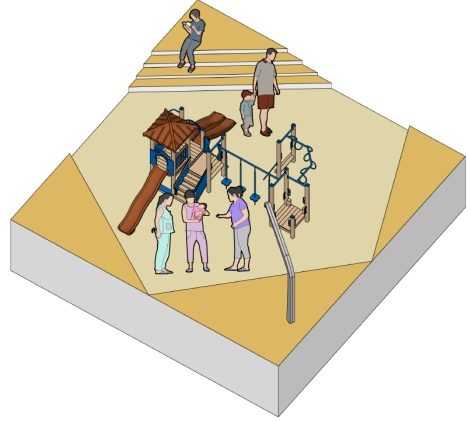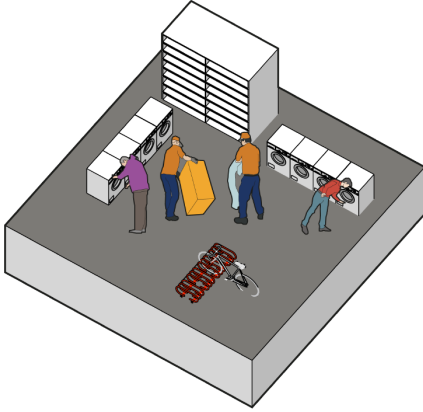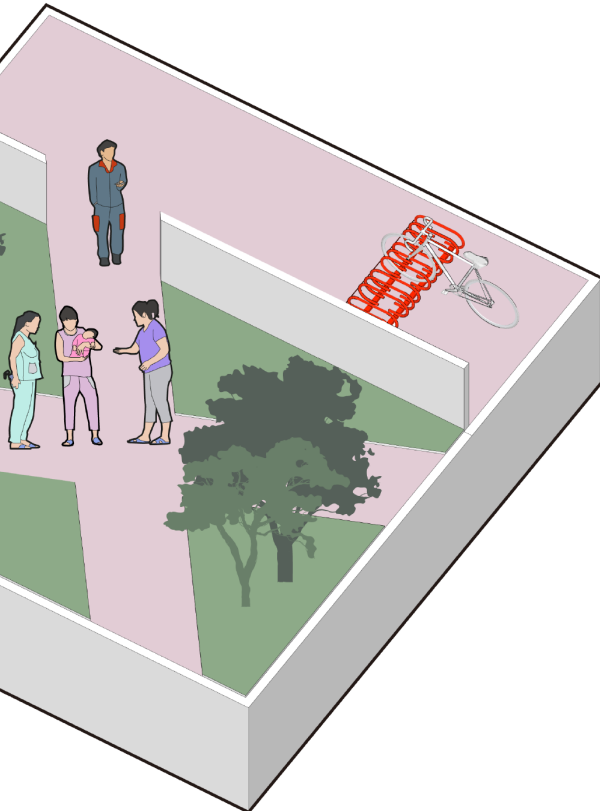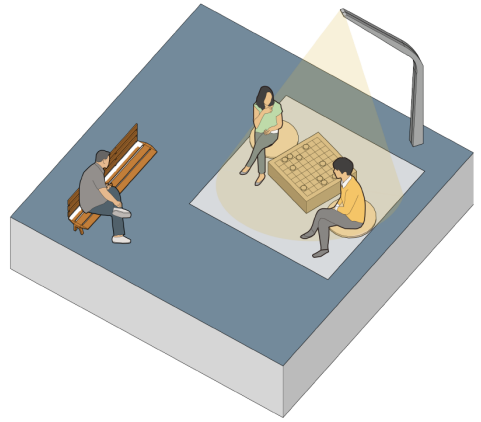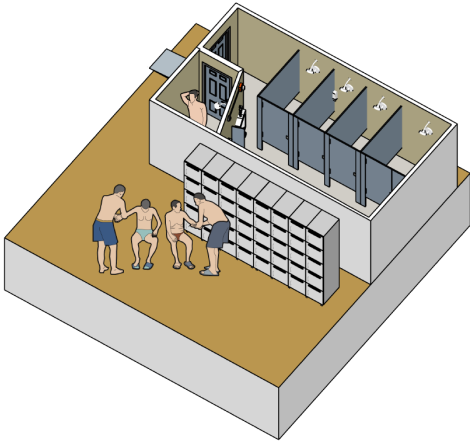
Based on the value of sharing to enlargen the chance for communication among migrants and also create more income for house owners

SHARING FACILITIES
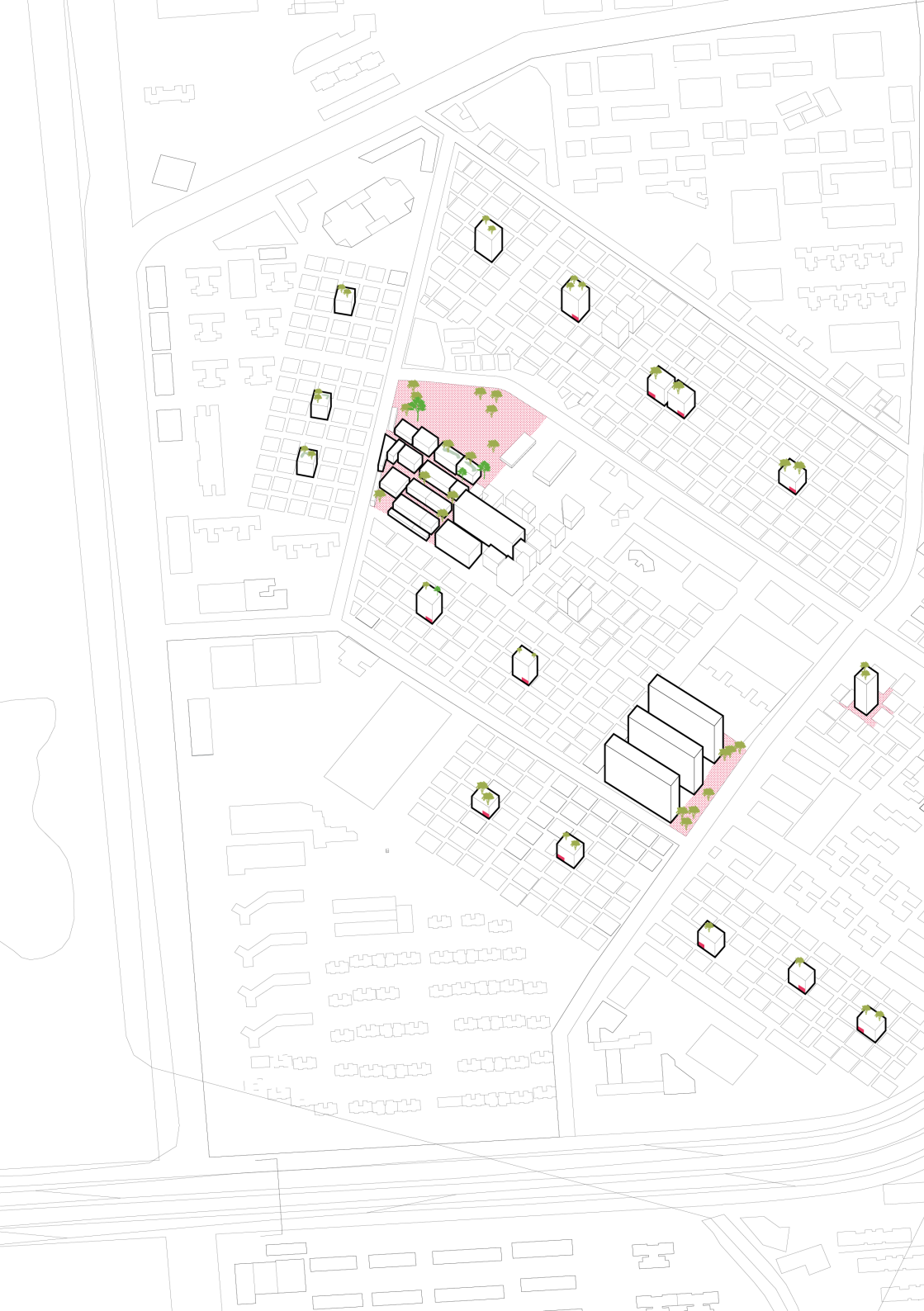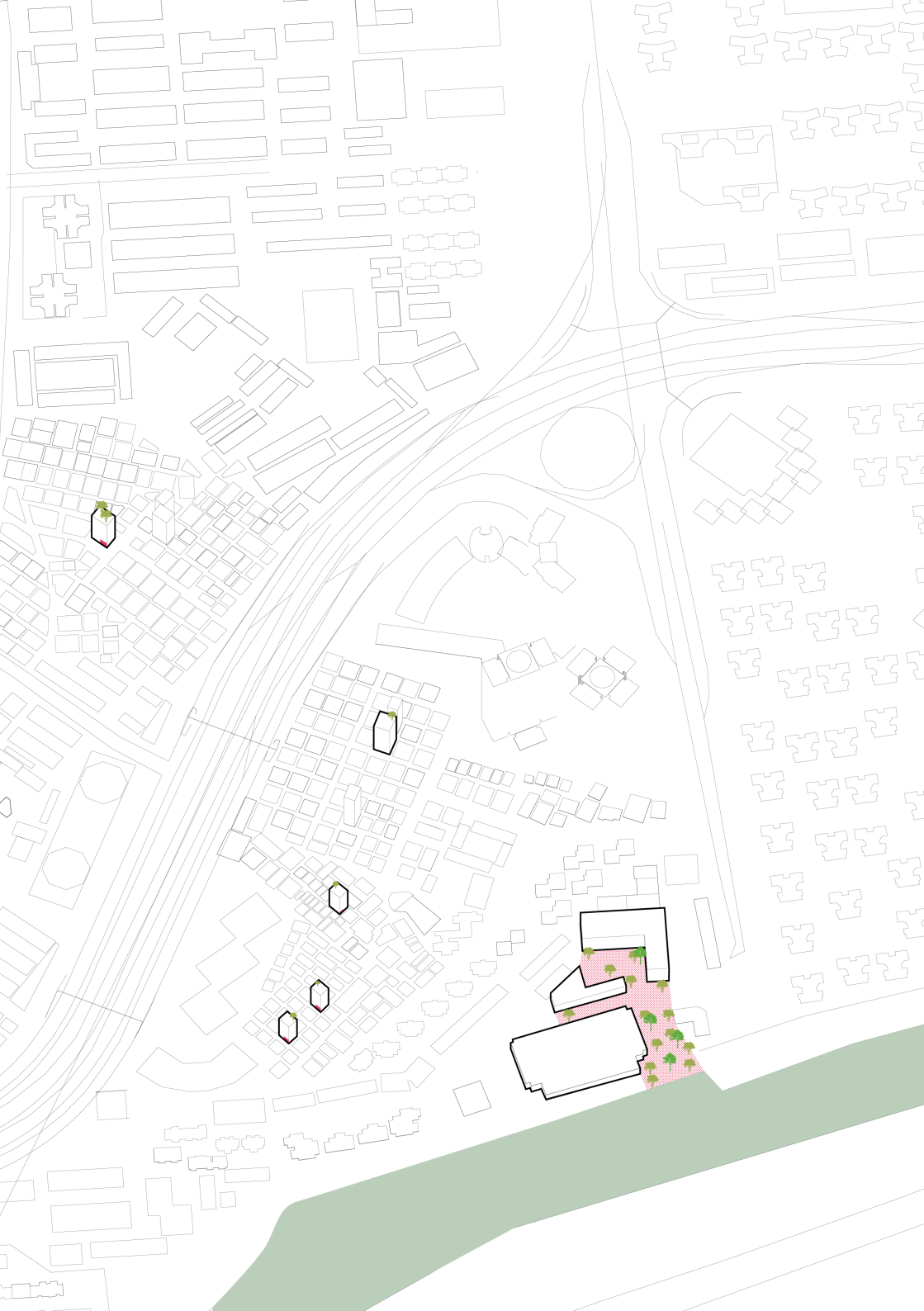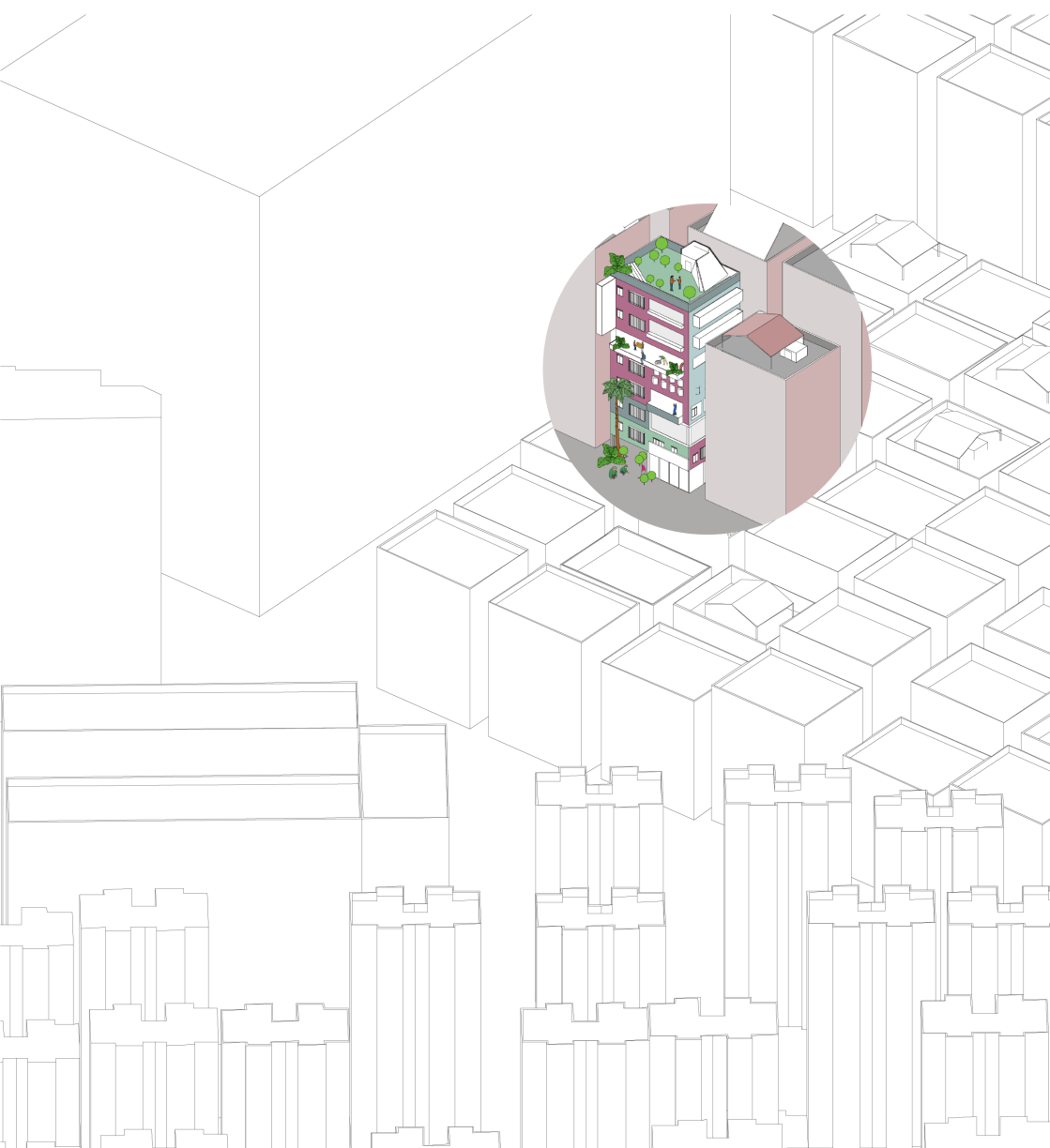
Working Space for Makers

创客公寓

Roof Community Space

Varity of Living Space

Ground Floor Sharing Facilities
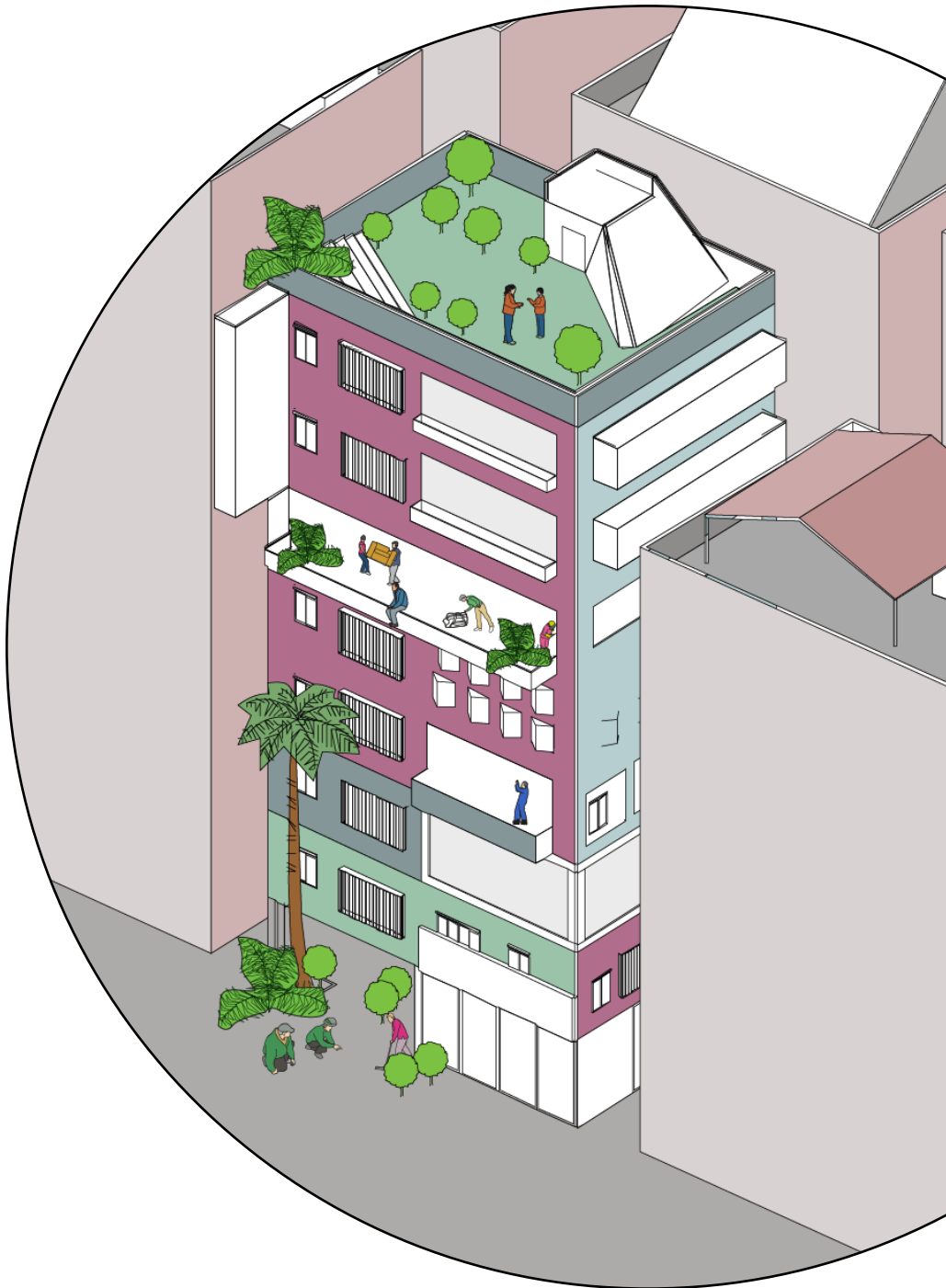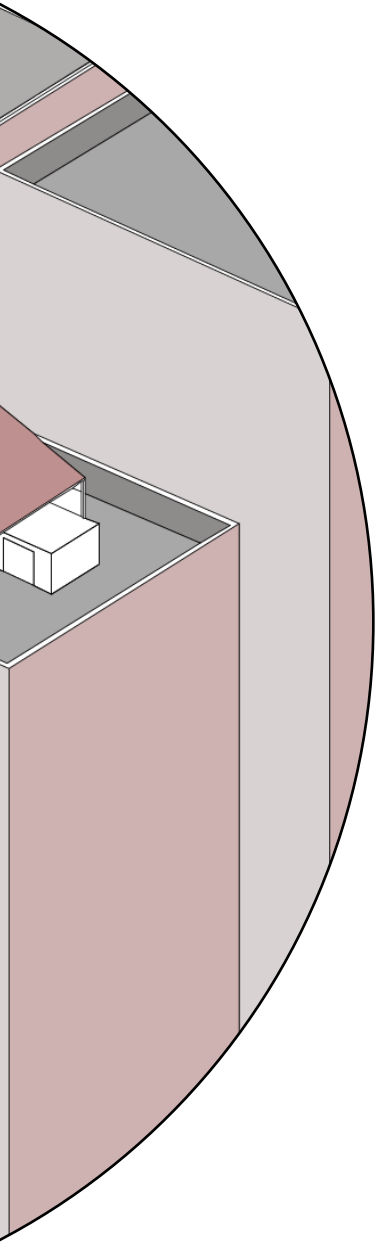
This scale intervention will focus on one building and turn the private property into a collective community space, attracting open space to the ground floor and root area to activate the sense of community. Guidance proposed on tranformation of the buildings ensures the flexibility and adapbility of current living environment. Introducing maker group in the building expects the spillover effects could happen and build a geographical proximity in knowledge sharing and skill exchange, finally transfroming the building from purely living environment into lively community space.

NATIONAL ENTERPRISES

SHANZHAI BUSSINESSMEN

FRAMING

AGGREGATING

HUAQIANGBEI COMMERCE COMMUNITY

MANUFACTURING MAKERS

CONSUMERS

BRIDEGING

Informal

Form

Government Recongnized the Legal Statue of Changing Industry Block to Commercial Purpose

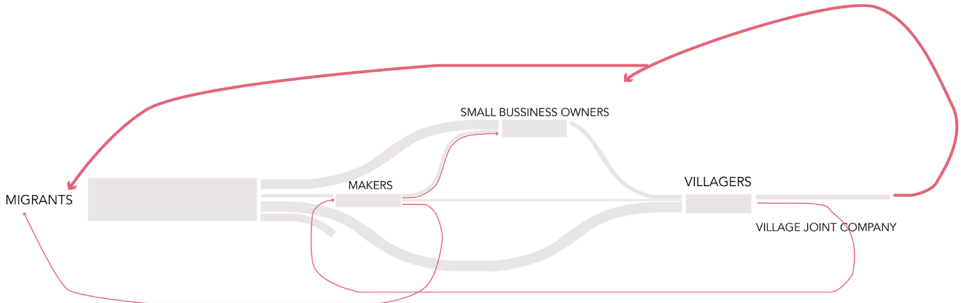Keep Outdoor Advertisements and Organize Commercial Promotion Events in HQB

GOVERNMENT

GOVERNMENT

MAKER GROUP

MIGRANTS AND SMALL BUSSINESS OWNERS

AGGREGATING

FRAMING

Informal   Formal

MANUFACTURING MAKERS

CONSUMERS

BRIDGEING

GOVERNMENT/DEVELOPER

al

ECONOMY MODEL IN URBAN VILLAGE

SMALL BUSSINESS OWNERS

VILLAGE JOINT COMPANY

MIGRANTS

VILLAGERS

Money Flow in Futian Village

Infrastrucutre Investment

SMALL BUSSINESS OWNERS

MIGRANTS

MAKERS

VILLAGERS

VILLAGE JOINT COMPANY
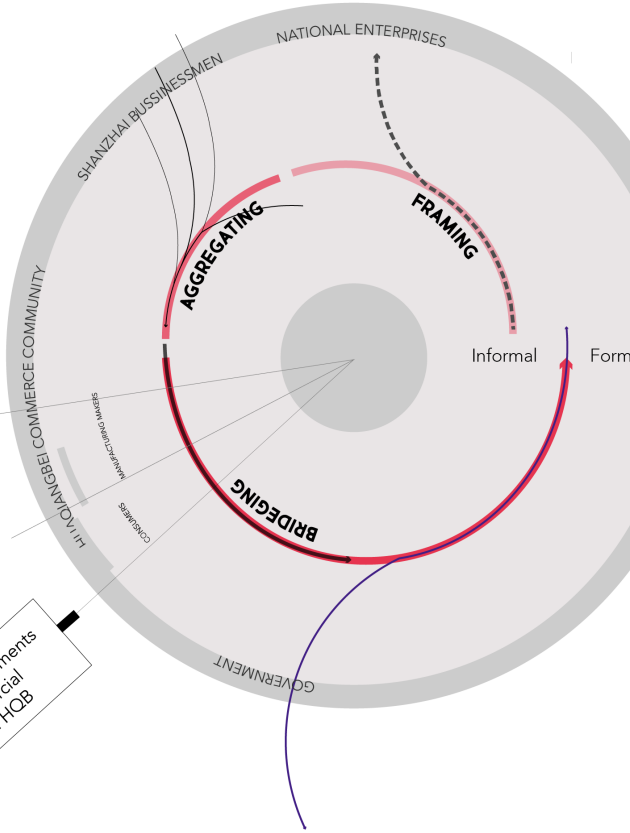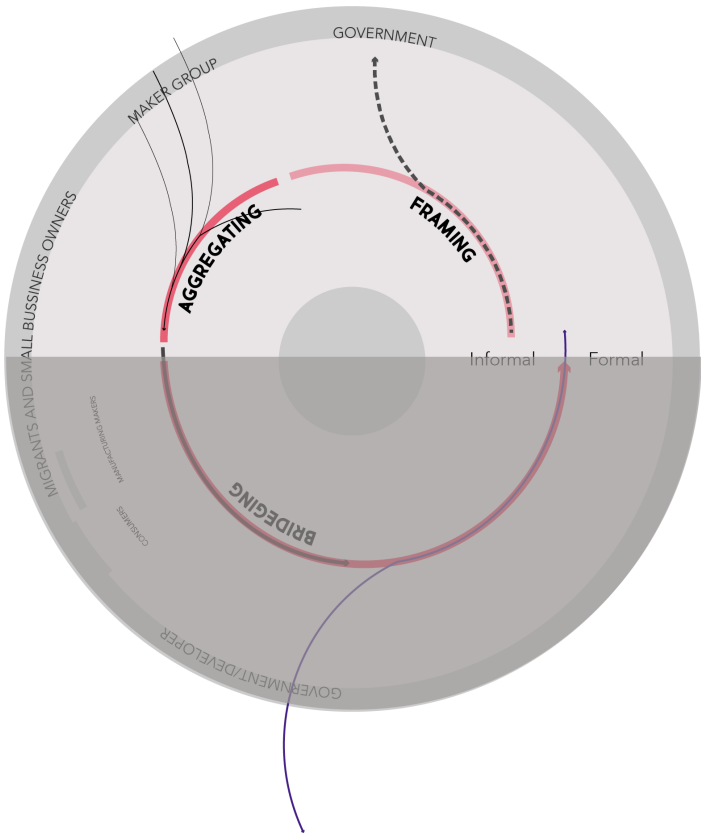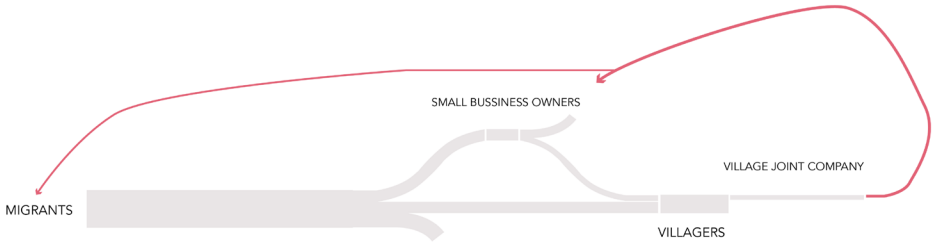
Money Flow in Futian Village

Infrastrucutre Investment

4.12 MIDDLE SCALE STRATEGIES

Second stage strategy is called aggregating which means attracting more stakeholders to be invovled in this process to make it possible. In order to attract more stakeholders in maker movement, more infrastructure and facilities are required to provide additional functions to meet demands of makers but also bring added benefit to current migrants. Small scale intervention which is about building typology could be seen to enhance public realm of the fixed amenities in urban village. Except for buildings, public infrastructure and economic system almost stayed the same for twenty years when they were built in Futian village as we disccussed before. It is lacking evolutionary characteristic in term of its growth mechanism at least not correponding to future development of Shenzhen City.

As Figure shows, exisiting economy system in urban village is quite linear while the new vision tends to use makers as catalyst to integrate with local production as well as leading the graudual change in current economy system through introducing new infrastructures.

According to obersevation and research, only buildings, infrastructure and public space always stay the same no matter who lives here. The vision is that urban village could be a place not only get money from migrants but could also contribute to life quality of villagers especially helping them gain skills and education thus programs for training skills and improving their life quality become important. Meanwhile, maker group also requires certain life quality to sustain their lives and working environment.
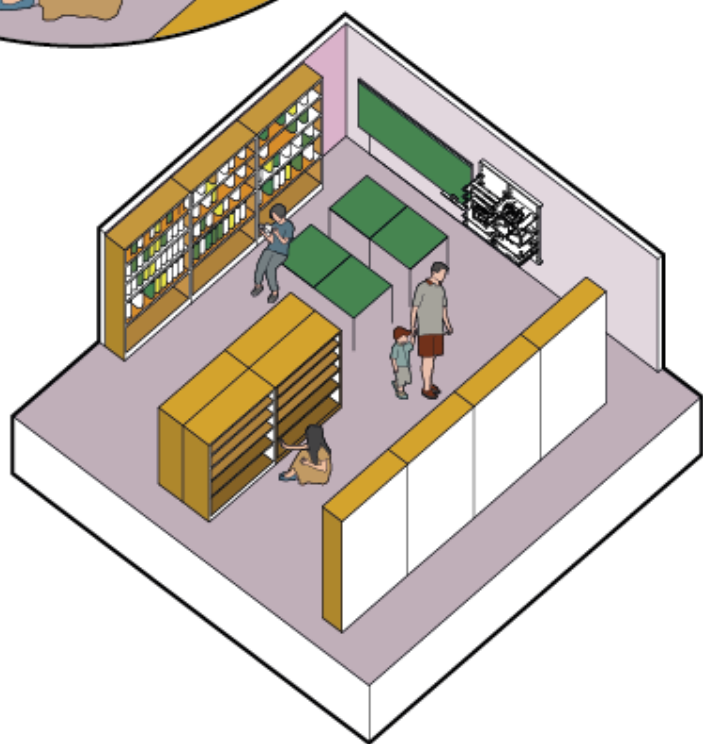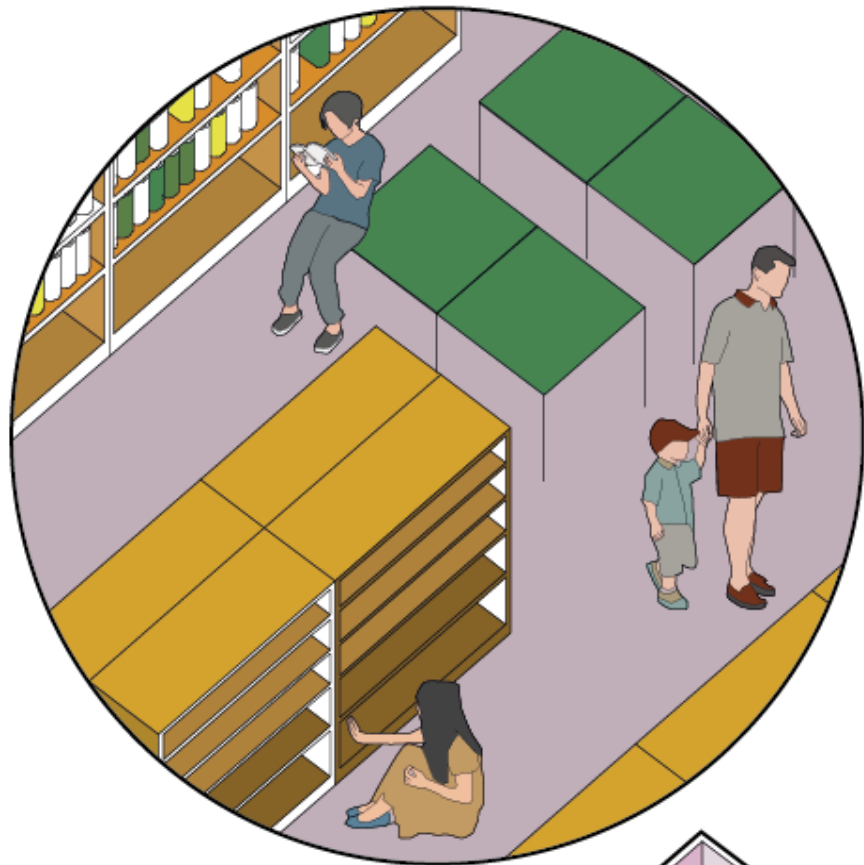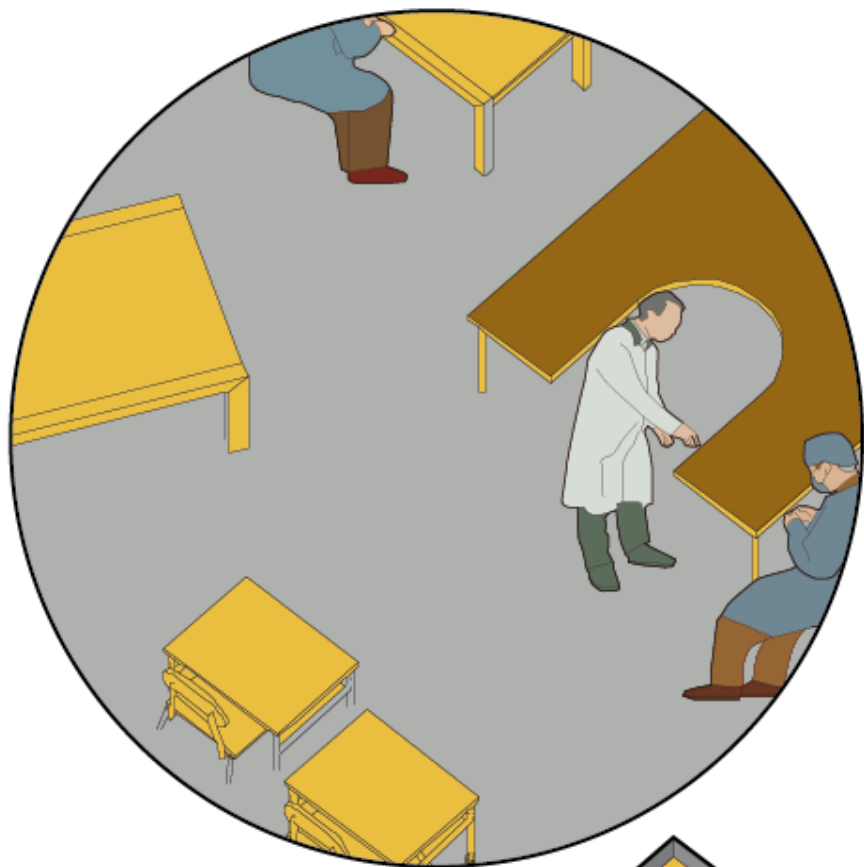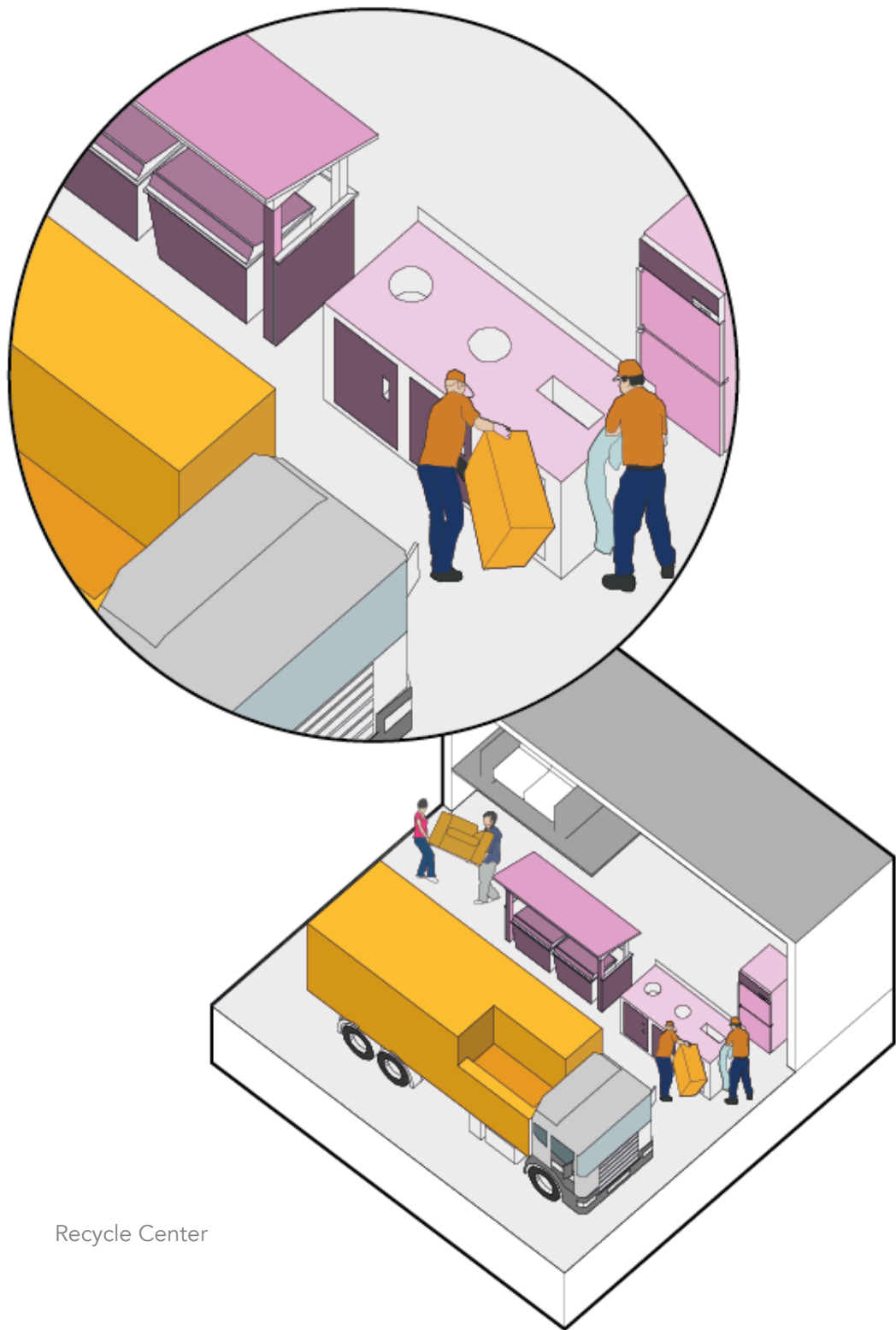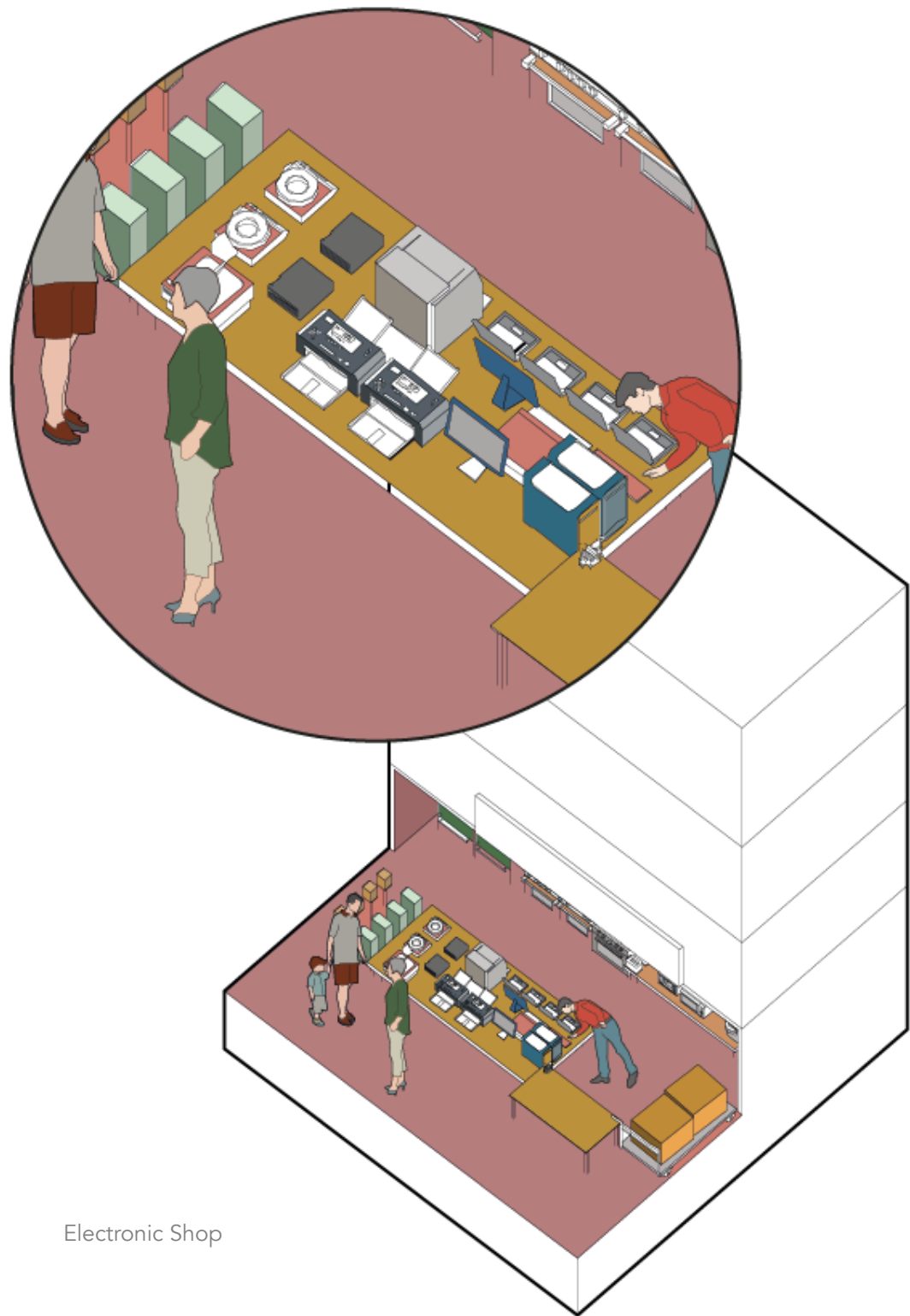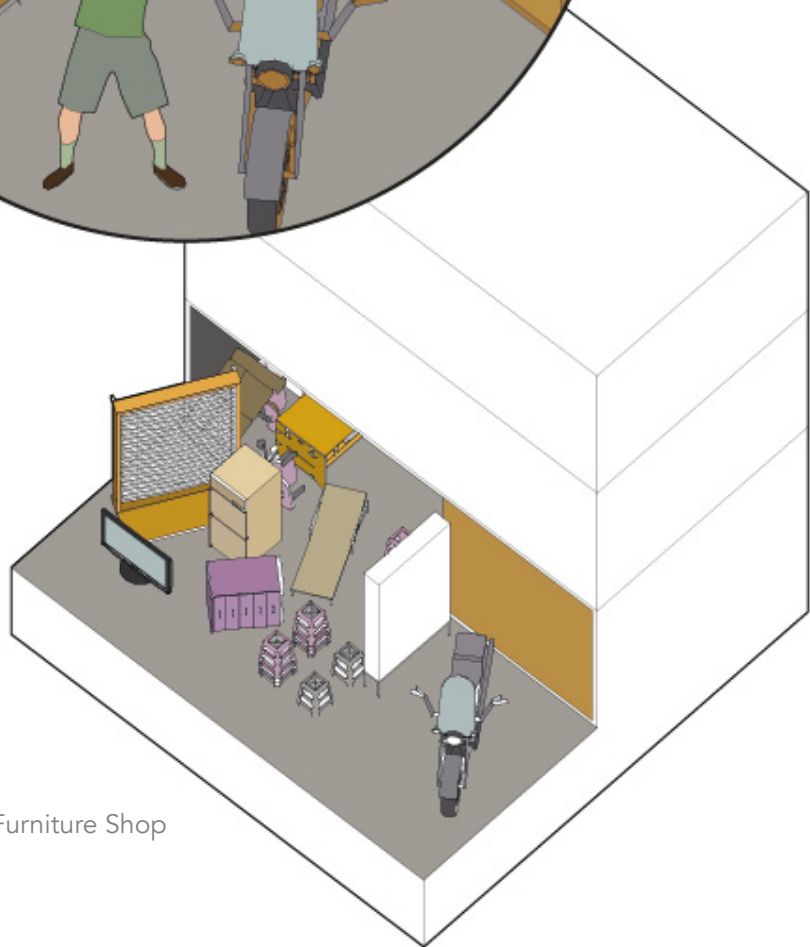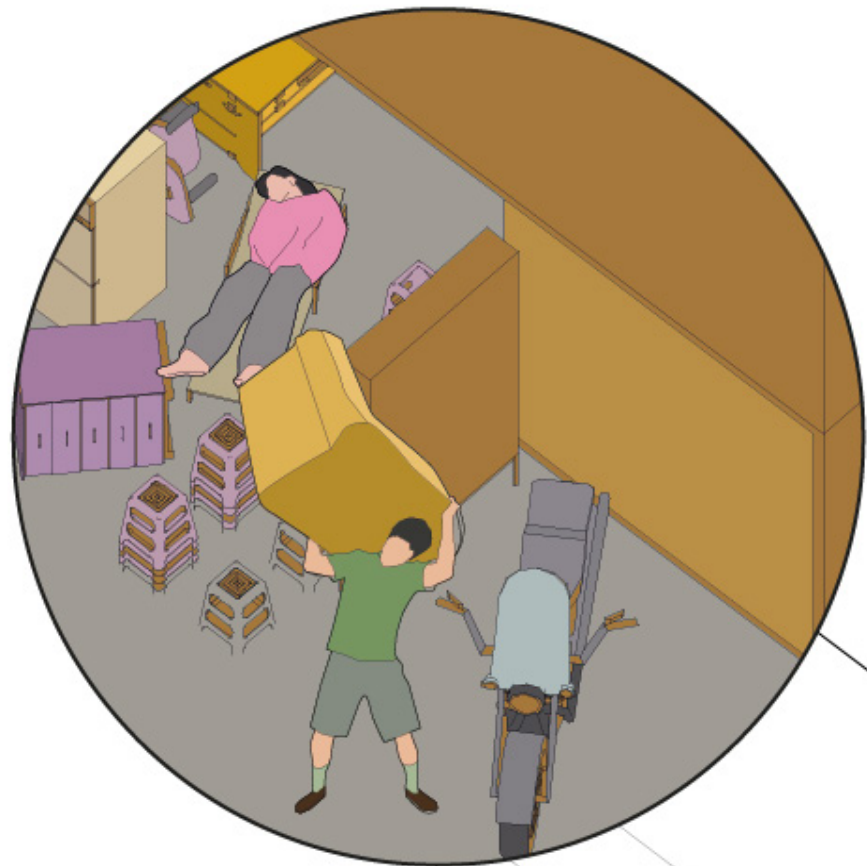
Maker Library
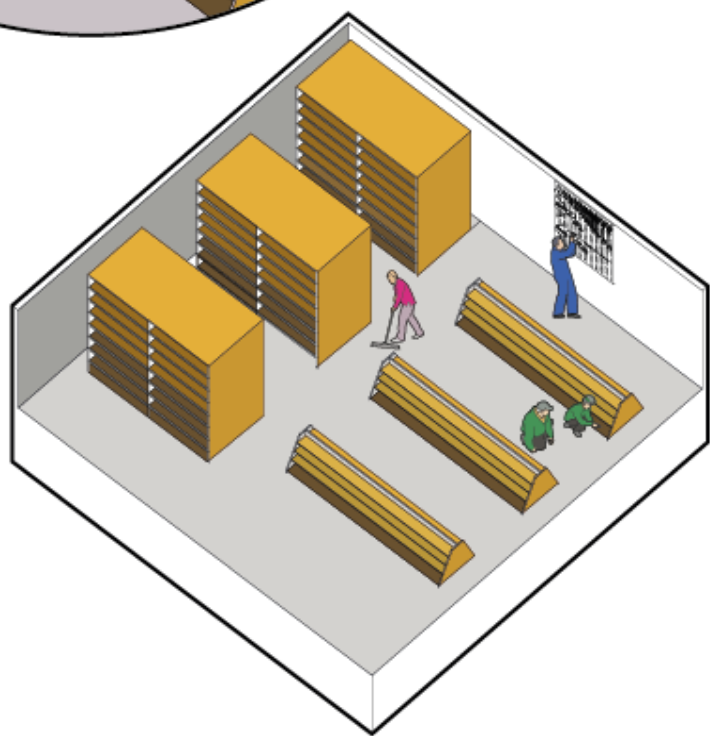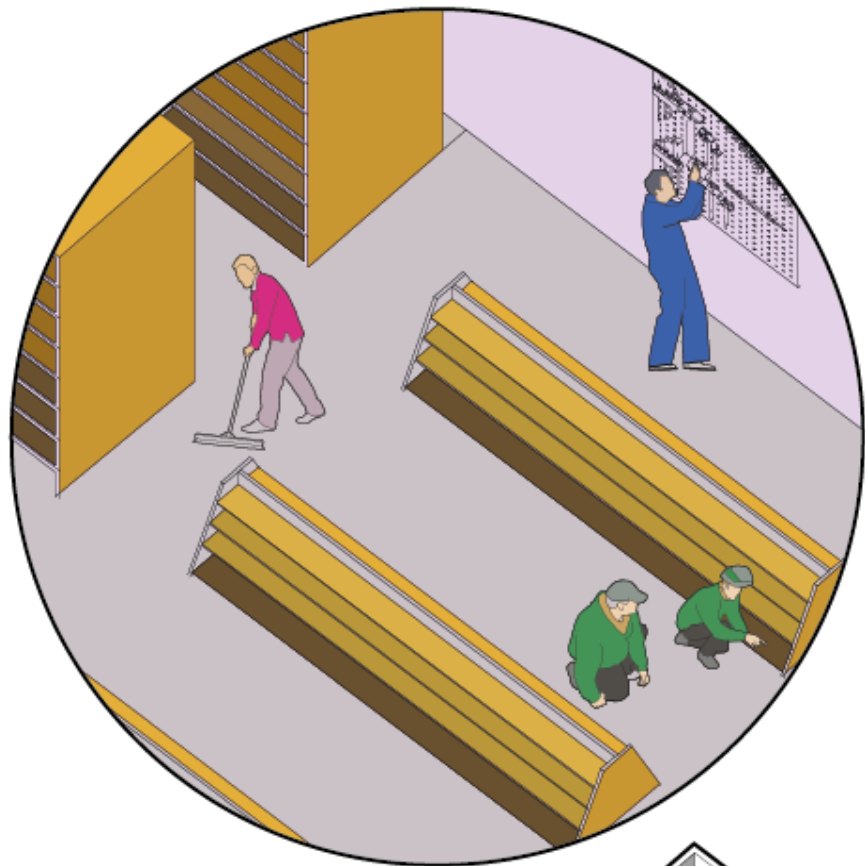
Material Shop

Printer Shop

Vocational School

Recycle Center

Electronic Shop

Second Hand Furniture Shop

The functions listed above are direclty related to exsiting and future possible usages of spaces in Futian Village. It could be categraried as three dimensions, education, production and working & living purposes. With consderations of local production activities, networking expects to be built through flow of money, flow of material and flow of knwoledge and how these new functions could be integrated with exsiting public spaces to become new center for economy and knowledge.
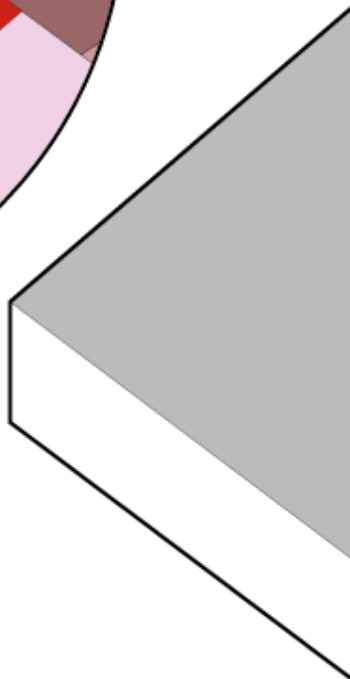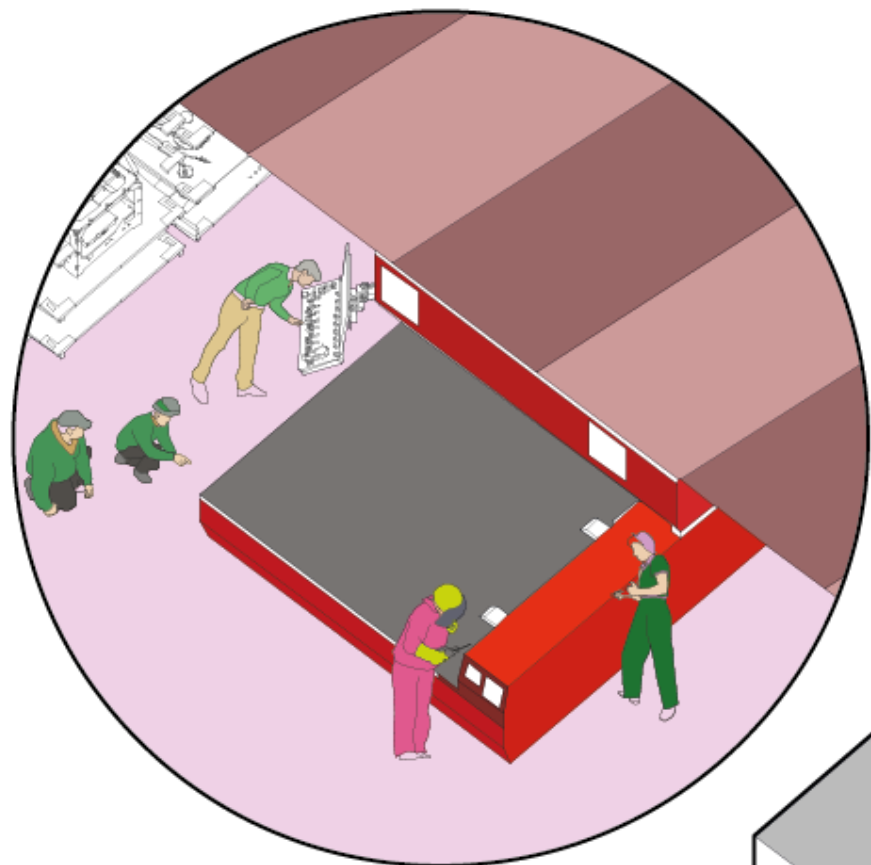
Prototype Factory
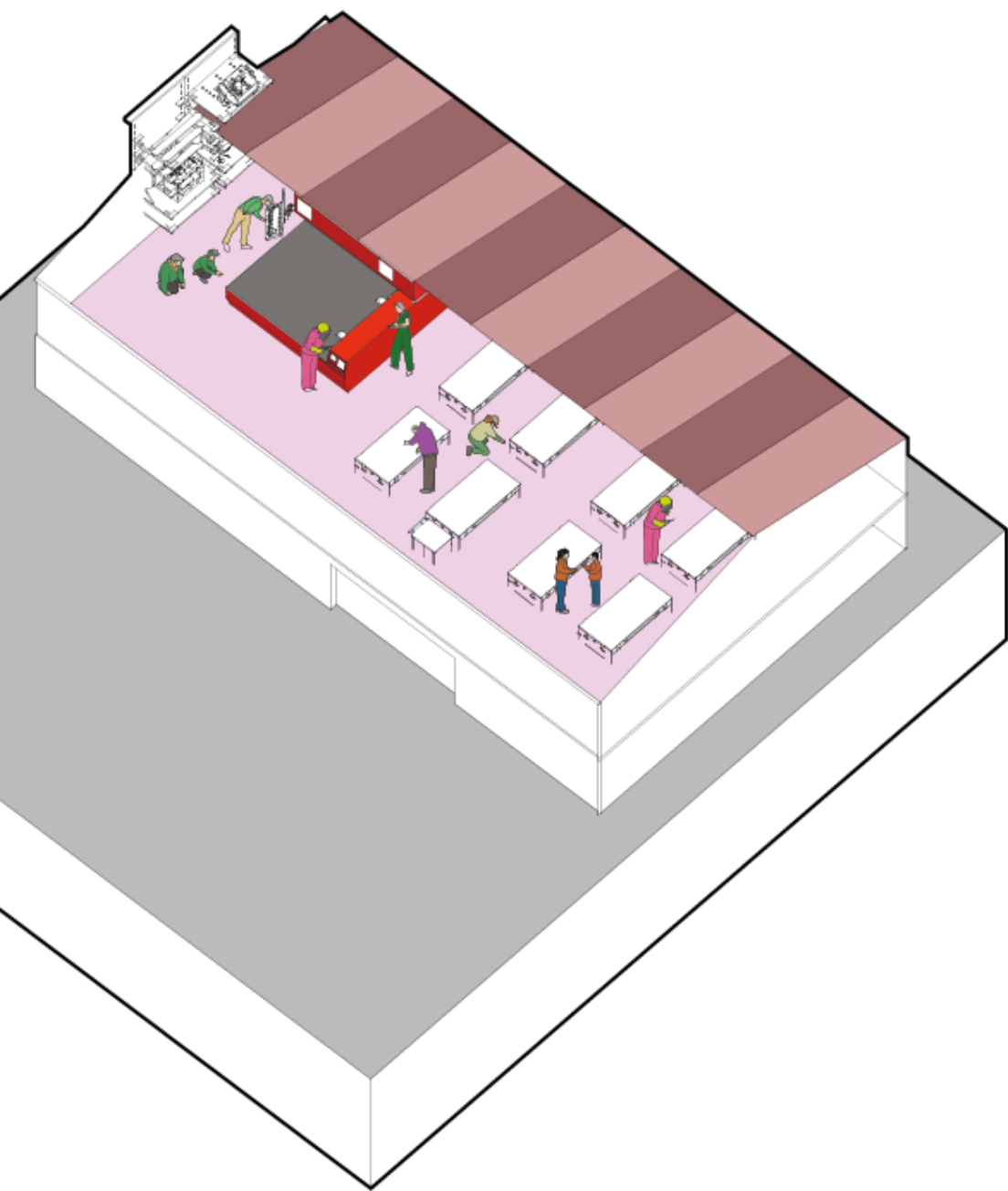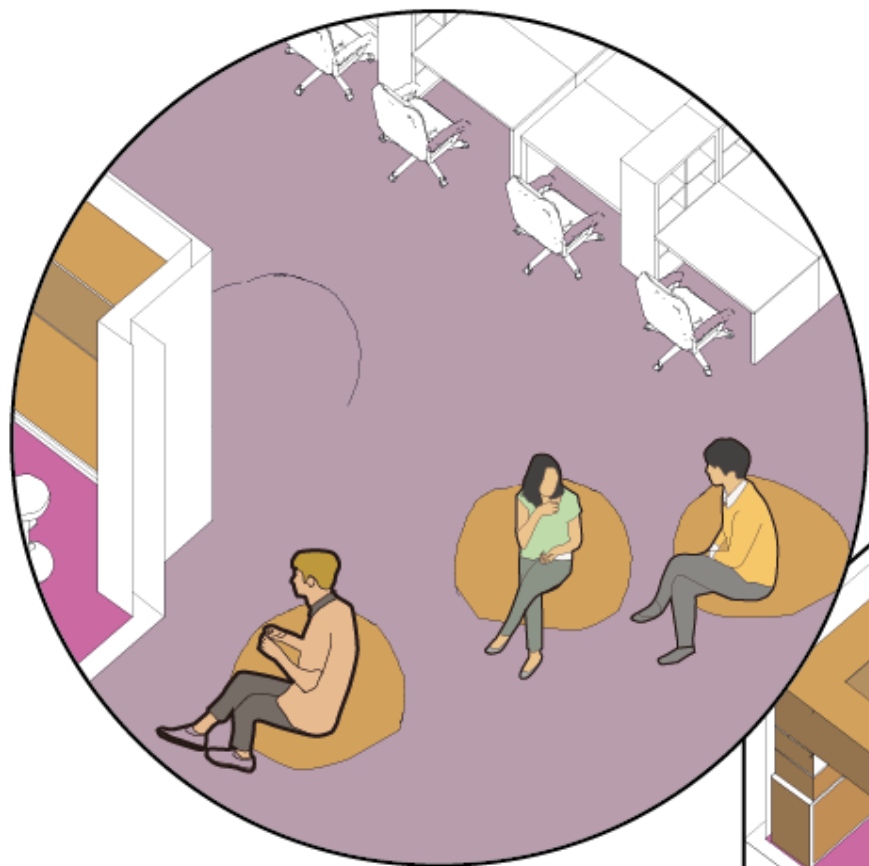
Co-Working Space

Maker Space
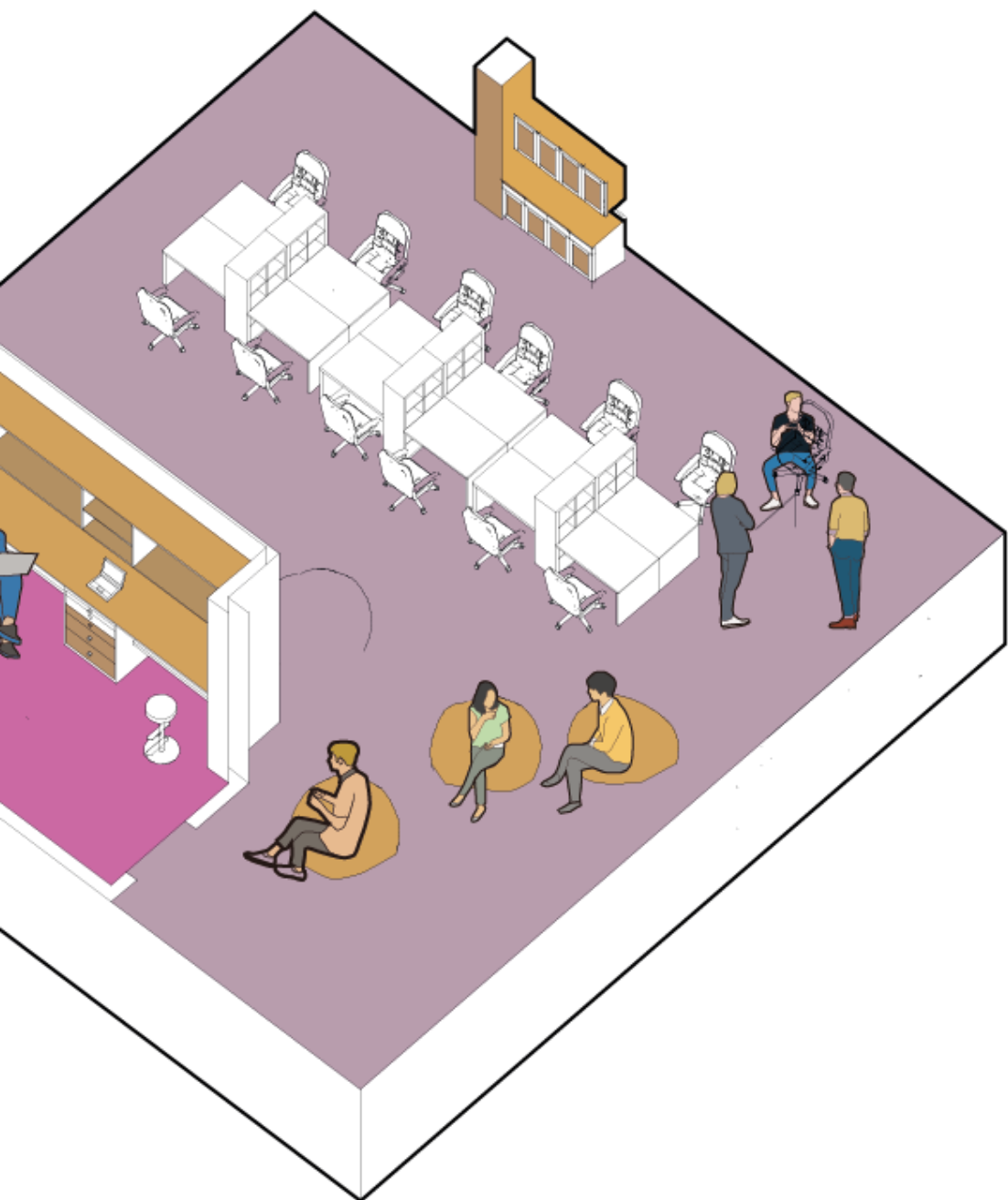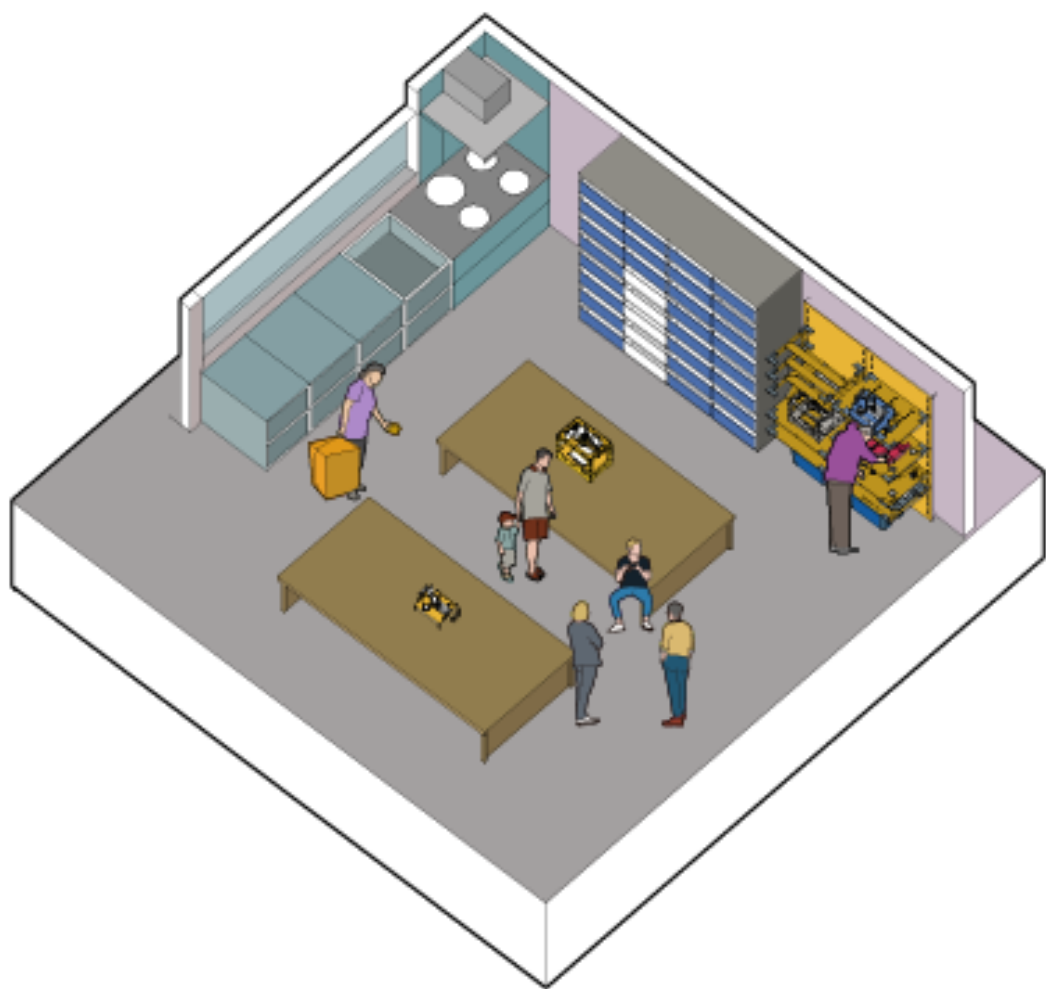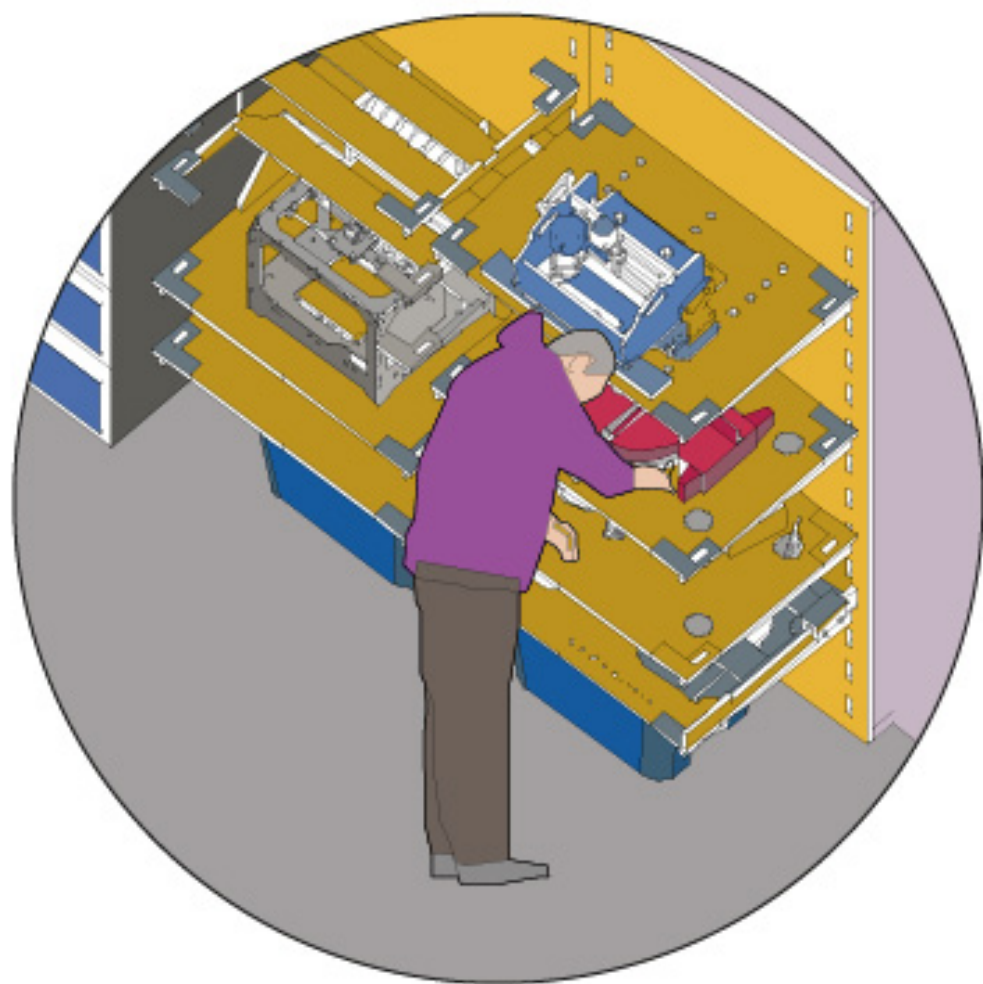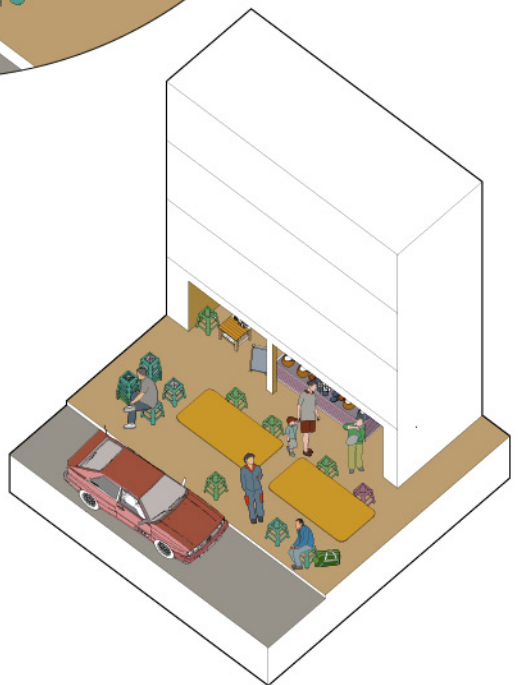
Restuarant
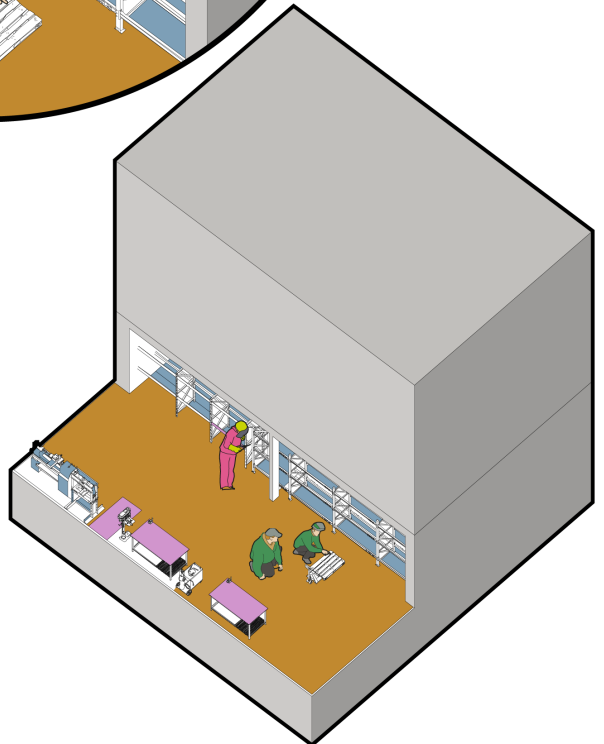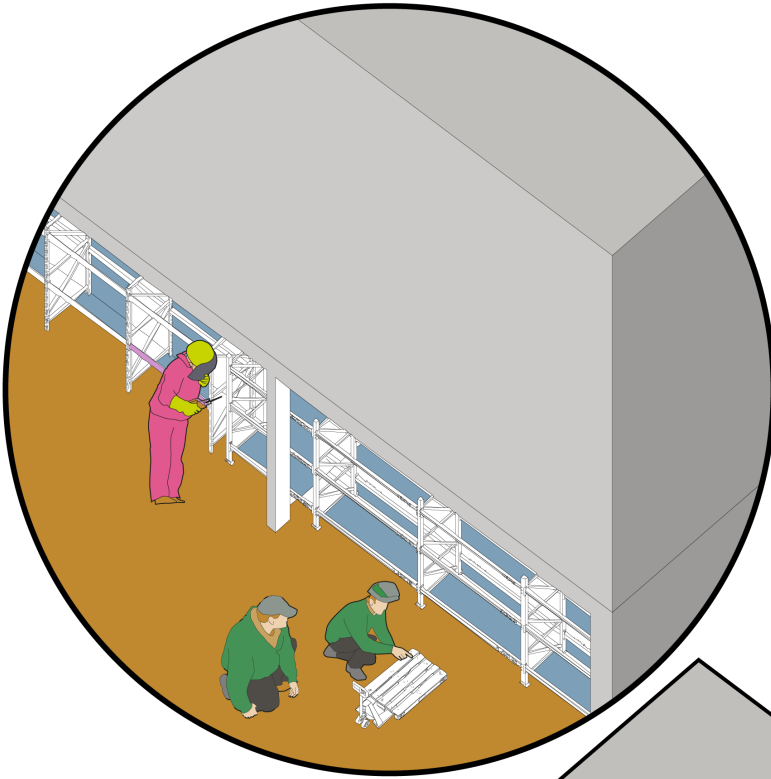
Metal Shop

FLOW OF MONEY
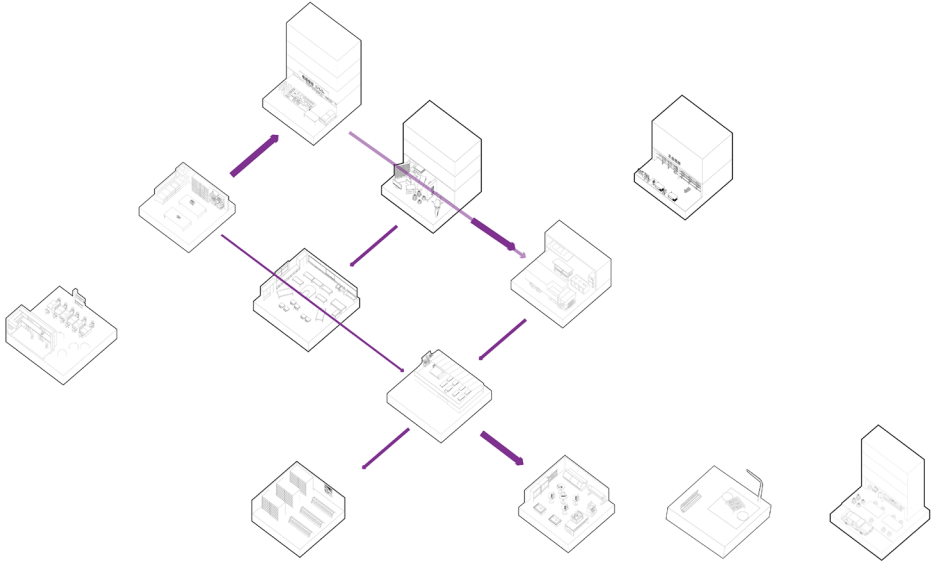
FLOW OF KNOWLEDGE
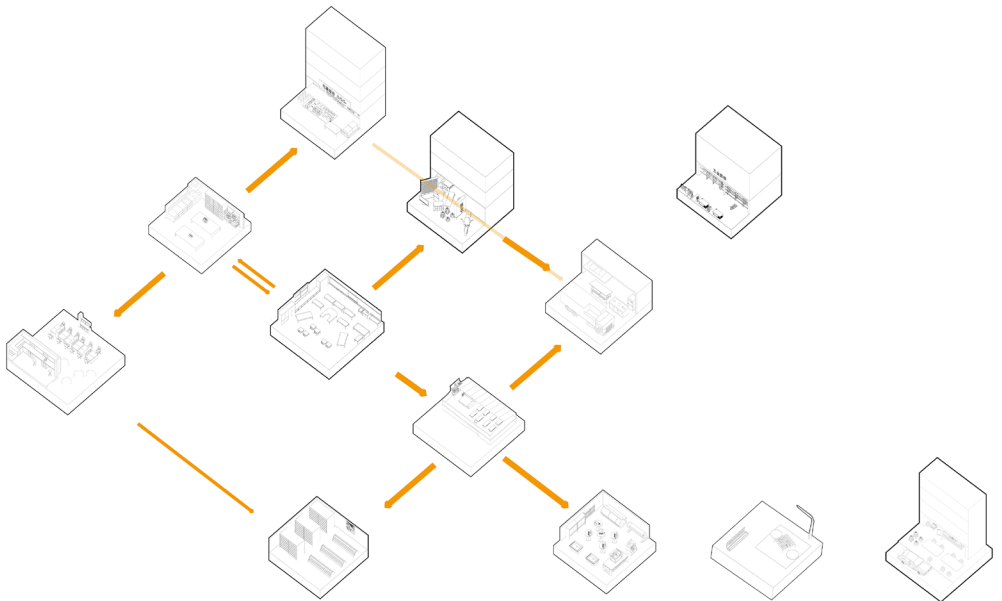
FLOW OF MATERIALS
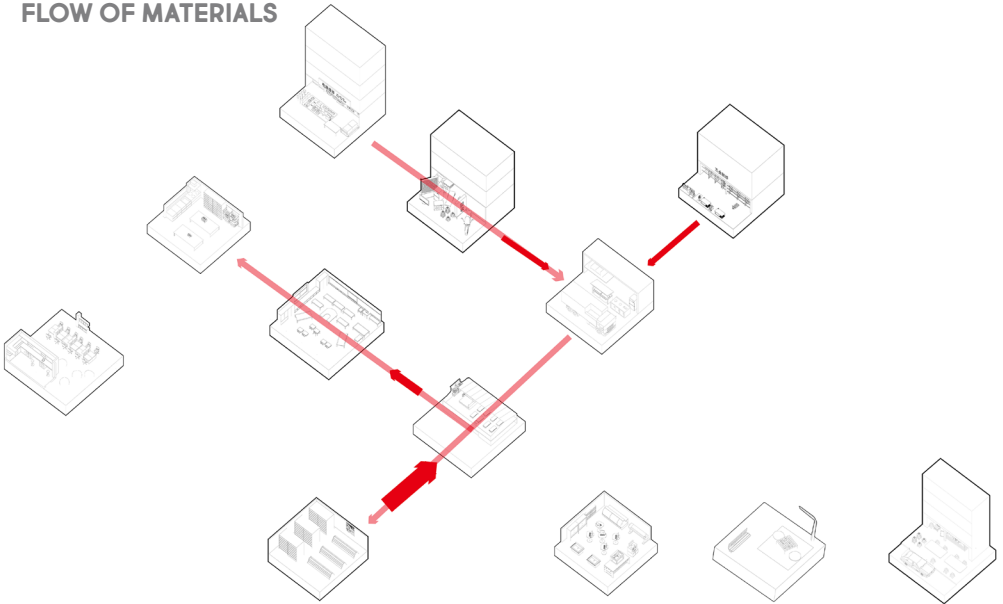
4.13 RELATIONSHIP AMONG DIFFERENT FUNCITONS

Like, house owner could provide 10-20% house to makers and they could use future share of company as a return for the benefit they earn when staying in the house. Local second hand shops could sell their products or buy cheap vocational training product from maker school to improve their repairing skills and gain better knowledge, same for their children's. Public schools here are not accepting migrants' children. We could use makerspace as an informal learning place for both children from migrants and citizens' children which will definitely provide chance for them to meet up and build up a friendship from that. Two ways of knowledge, active learning and negative learning were provided to public.
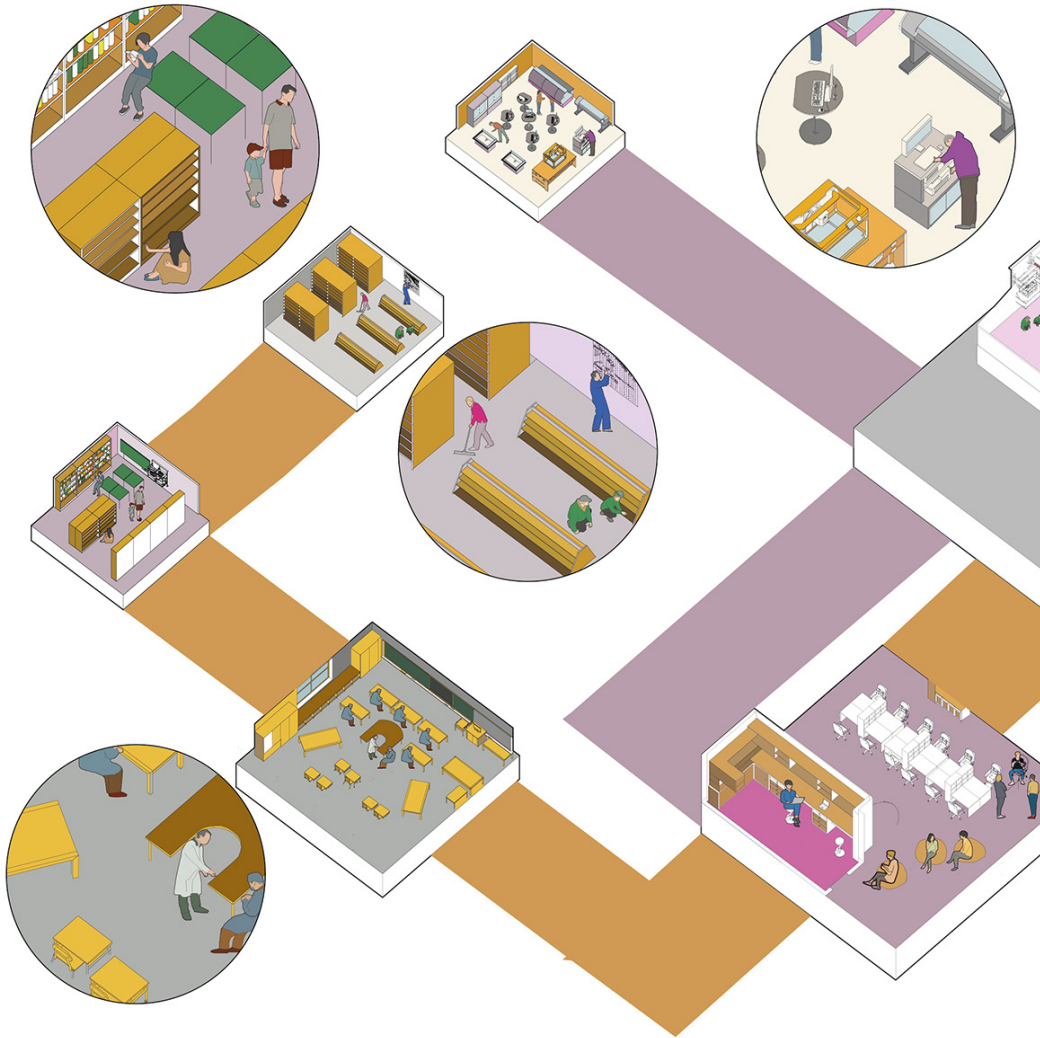
New Infrastructure and Functions in New Economy System, made by author
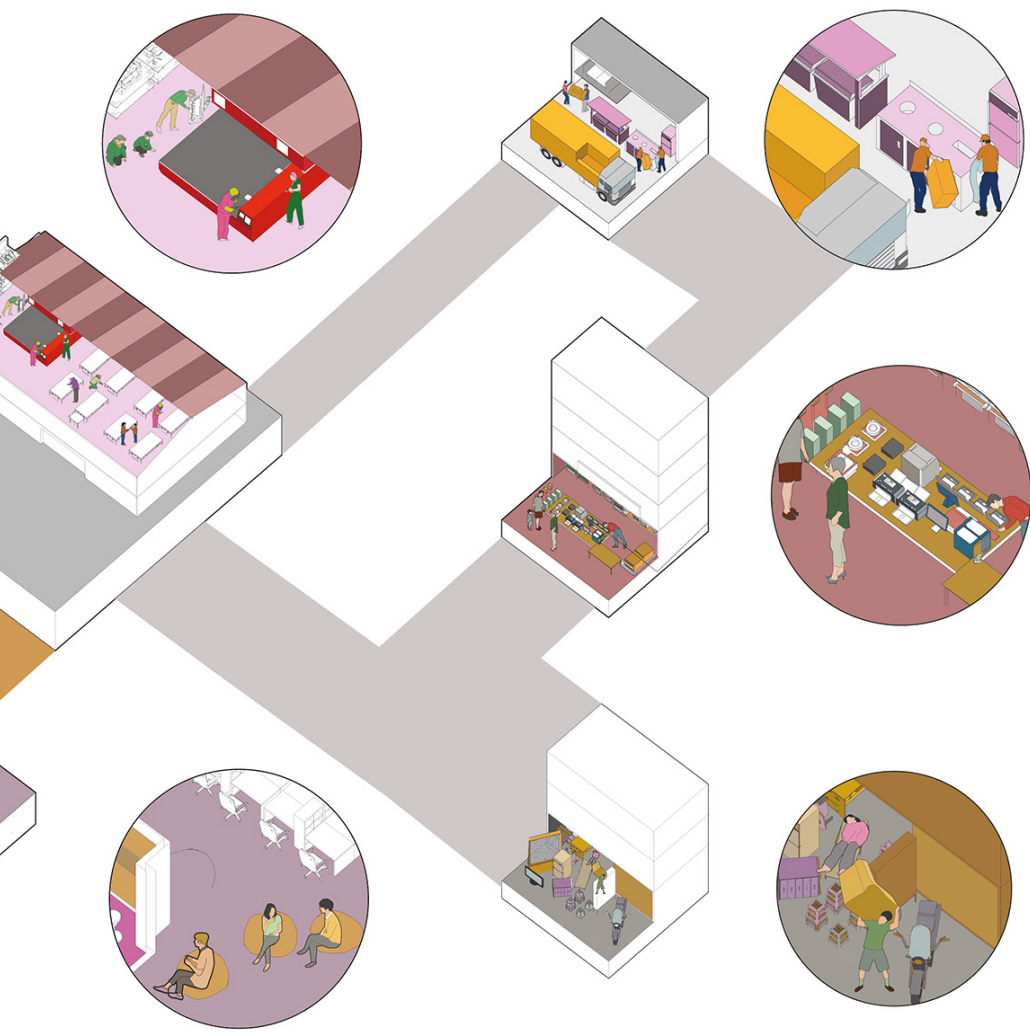
INTERVENTIONS RELATED TO NEW ECONOMY IN FUTIAN VILLAGE

EDUCATION

1. Makerspace for Public
2. Makerspace in School
3. Skill Center
4. Public Space Used as Occational Activity

PRODUCTION

5. Hardware Shop
6. Repaire Shop
7. Second-Hand Shop
8. Steel Shop
9. Special Material Shop
10. Recycle Center
11. Maker Shop
12. Prototype Factory

WORKING AND LIVING

13. Makerspace
14. Soho
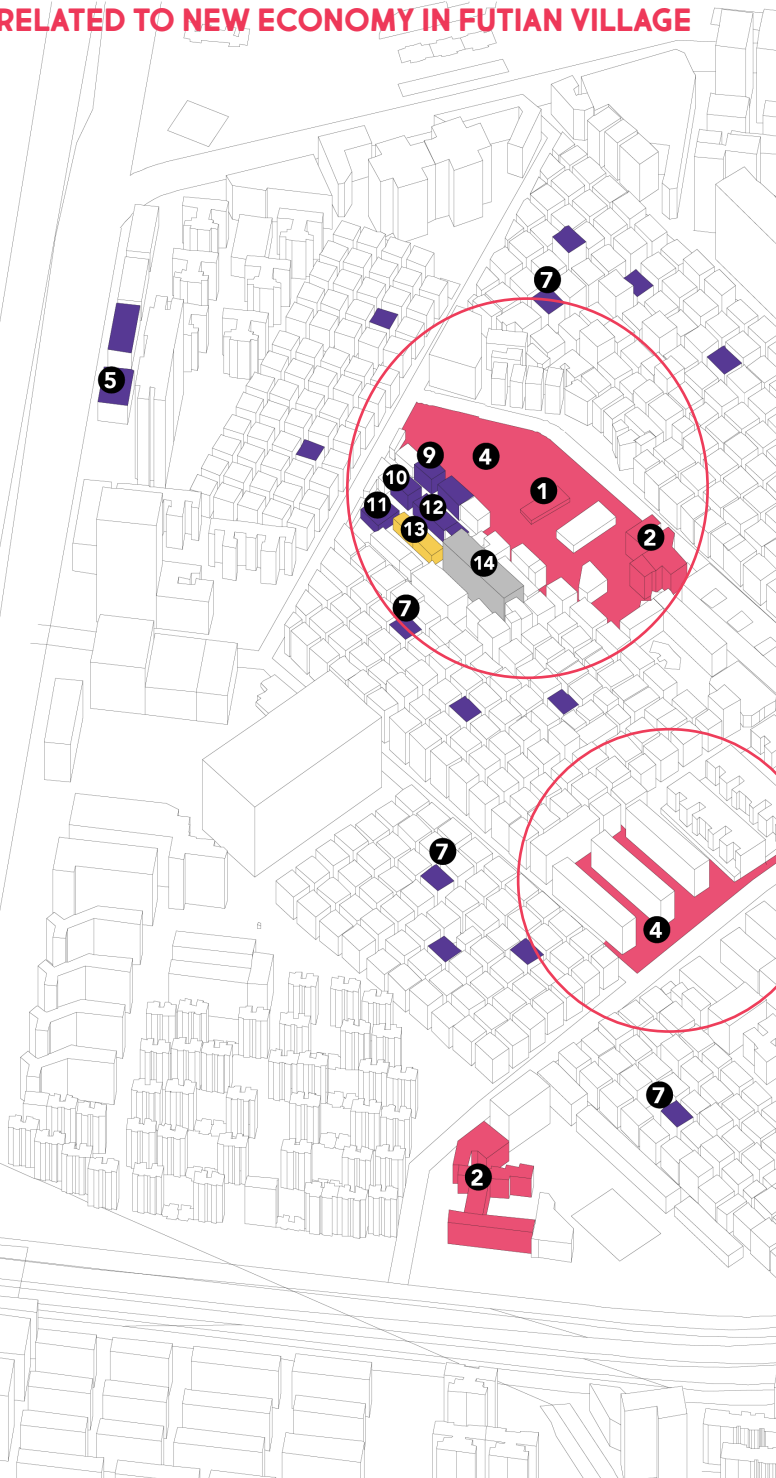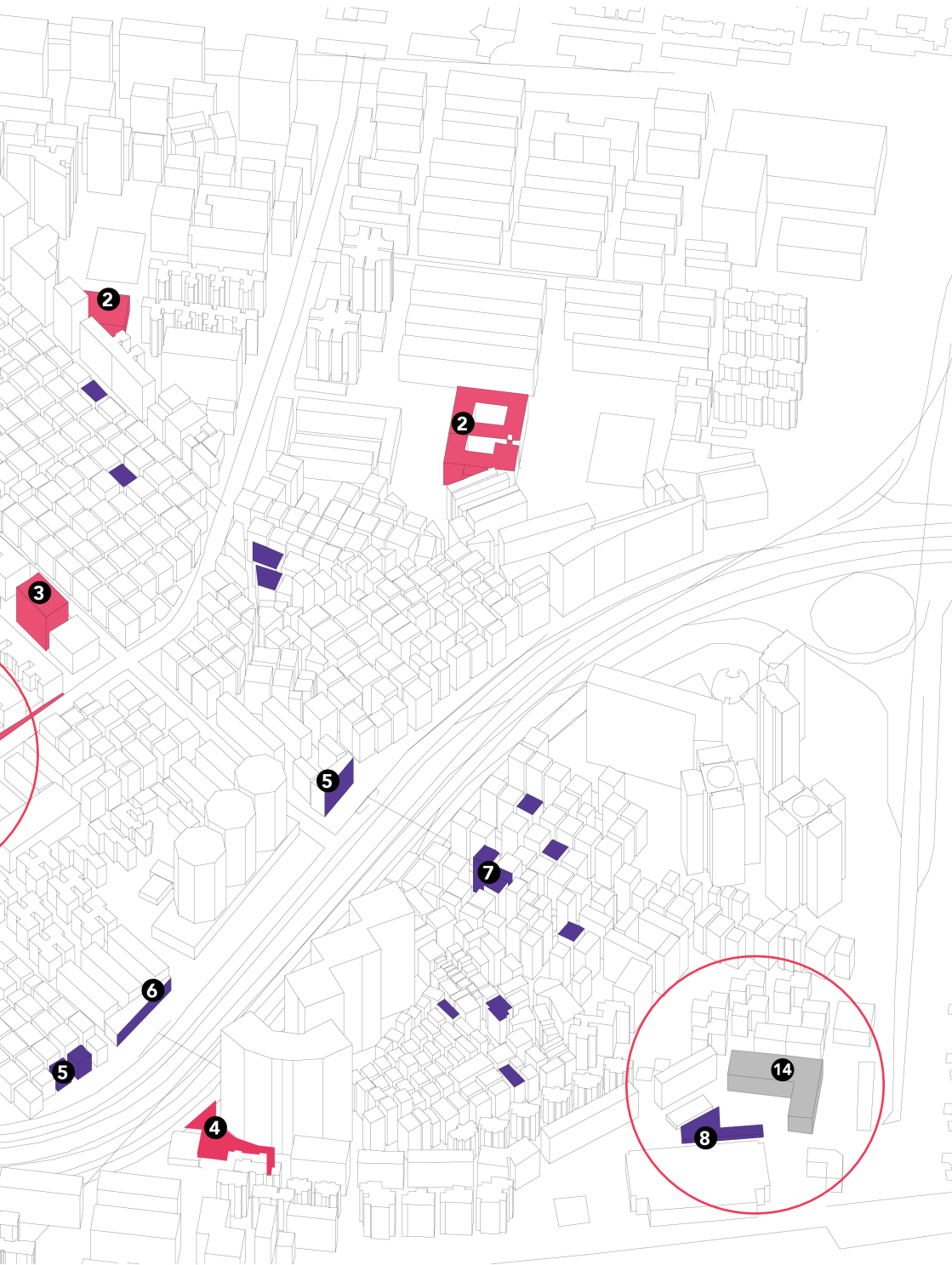
Bicycle Networking

TYPOLOGY TRANSFORMATION
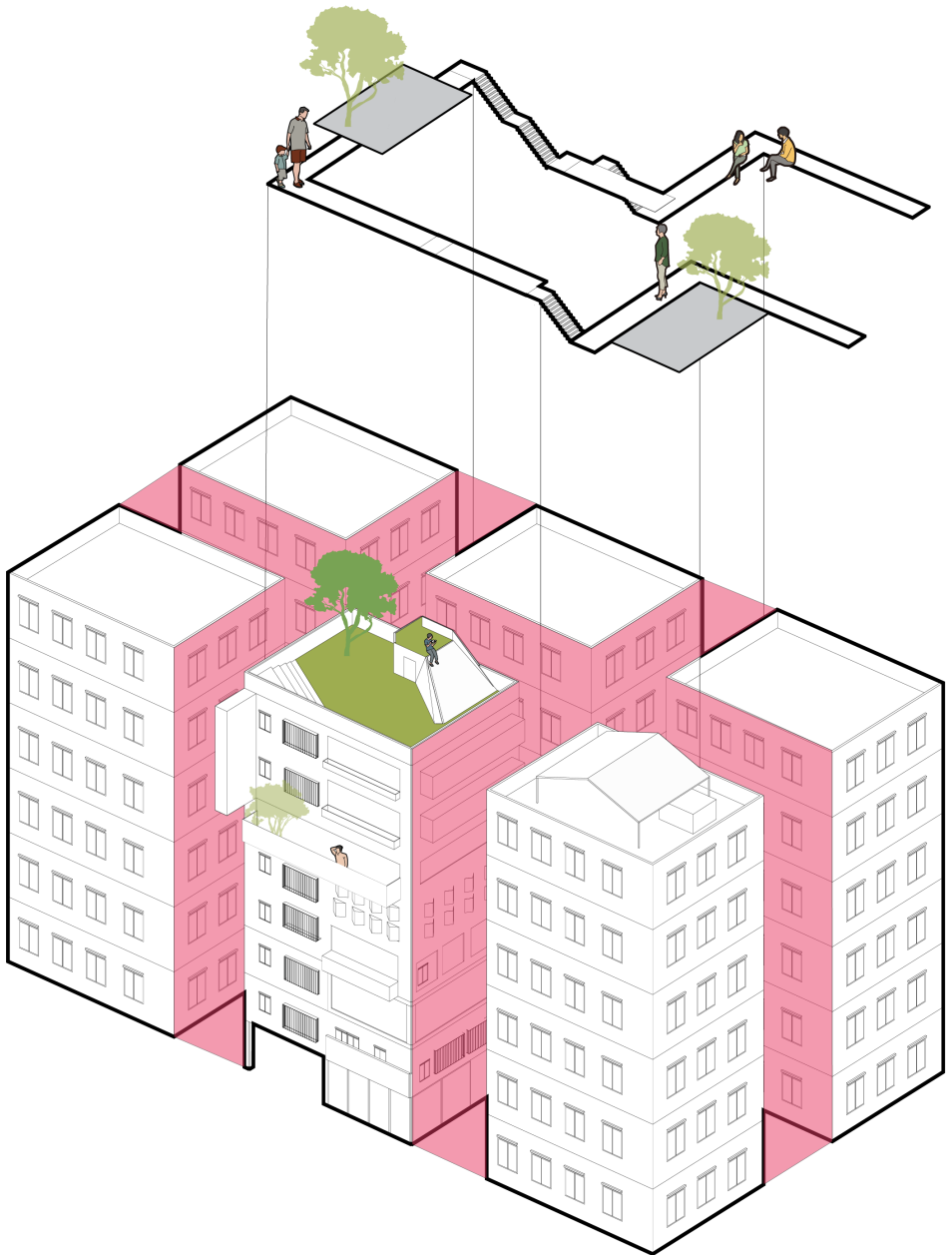
Physically, networking among these functions could be achieved through corridor among building. Gaps between buildings could be used as expantions for giving migrants' autonomy in deciding their own spaces along with more collective spaces provided. It decreases negative spaces in urban village while using them as a source for creating more funcitonal spaces. Collective spaces are expected to be introduced like that in other blocks also and these new functions would diversify public space types in such densed built environment.

It intends to reveal the possibility of existing building structures and means better usage of these fixed amenity in urban village. Meanwhile, creating physical networking among people living in different buildings.

Connetion Among Different
Functionl Spaces

Material Shop

Wood Workshop

Meeting Place

Public Space

Education Space

Co-Working Space

Outdoor Wokring Space
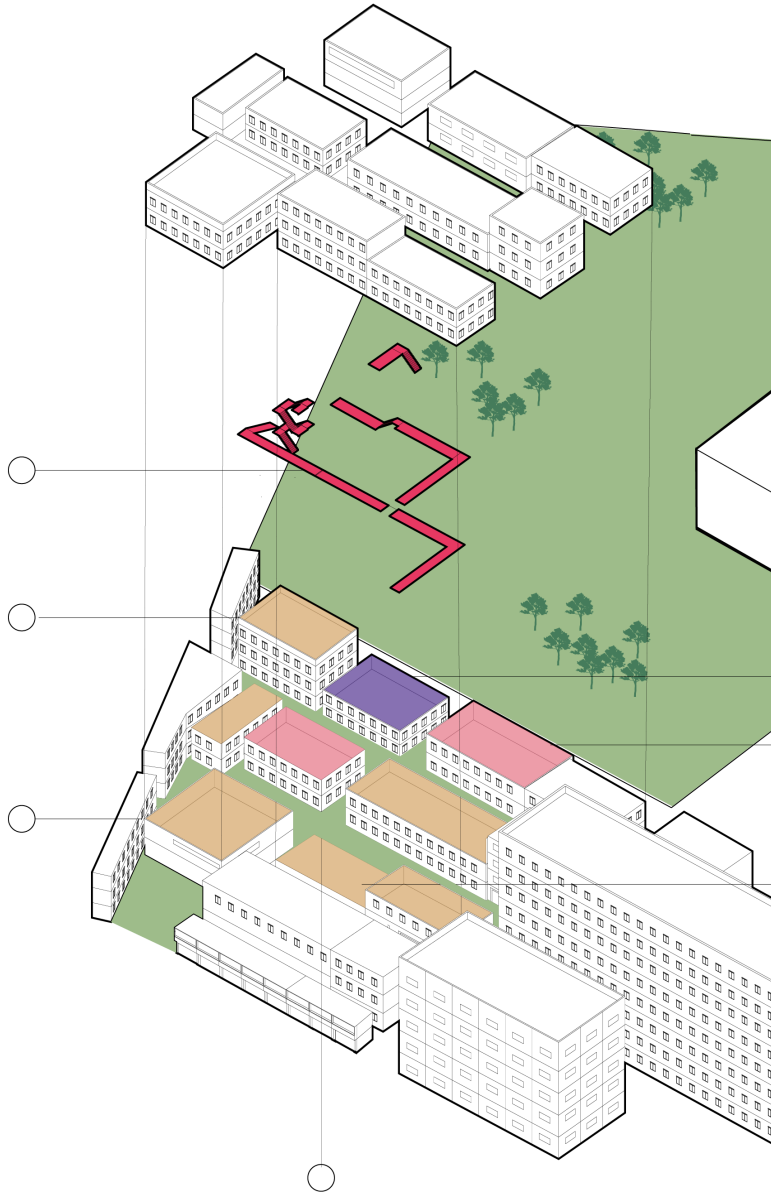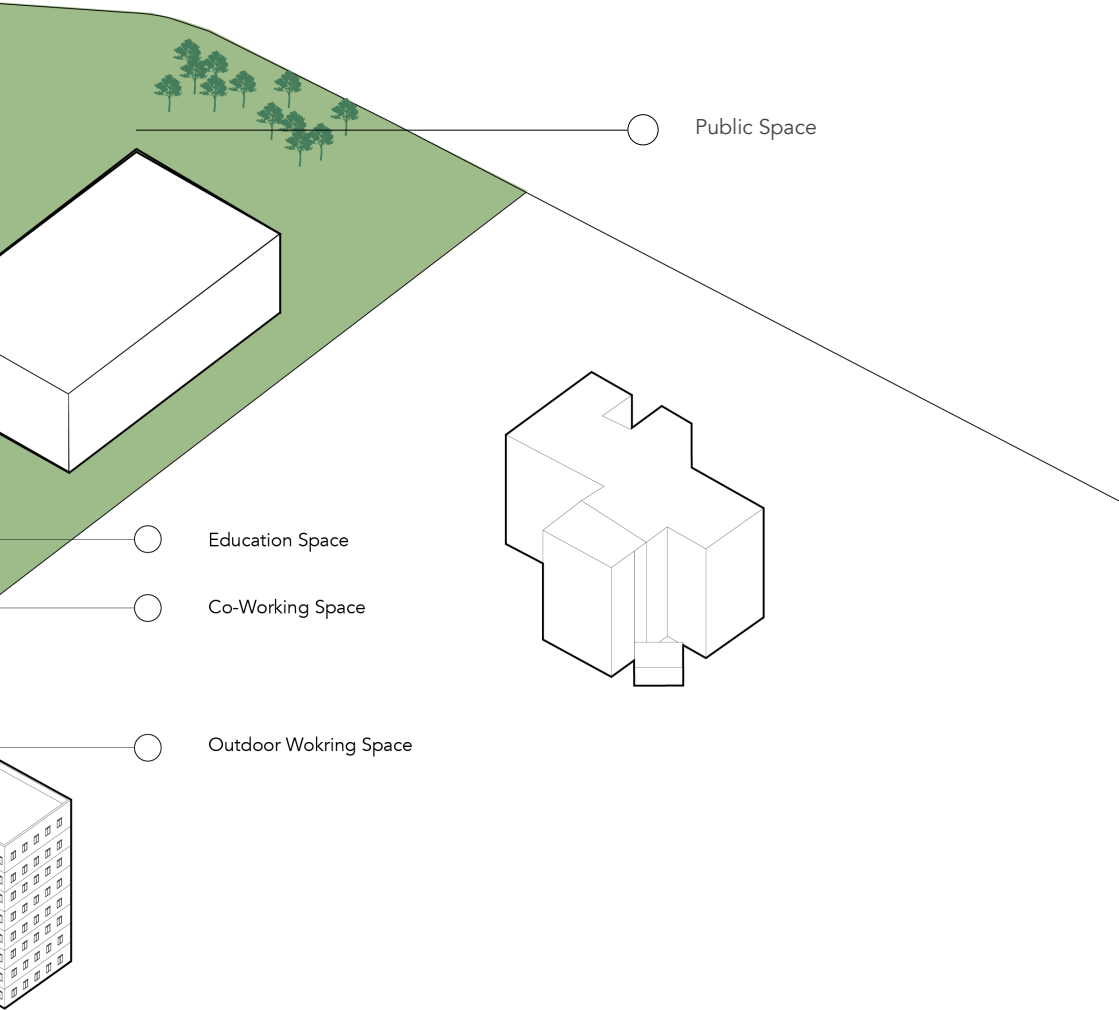
INDUSTRY BUILDING ADAPTATION

Affordable Apartment

Bike Lane

k
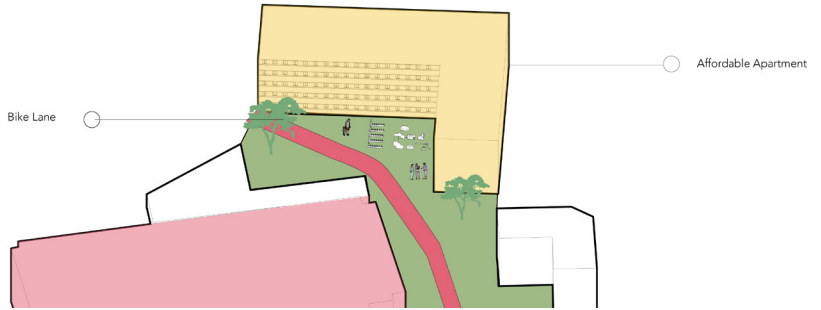
EXISITING PUBLIC SPACE ADAPTATION

Pocket Park

Bicycke Lane
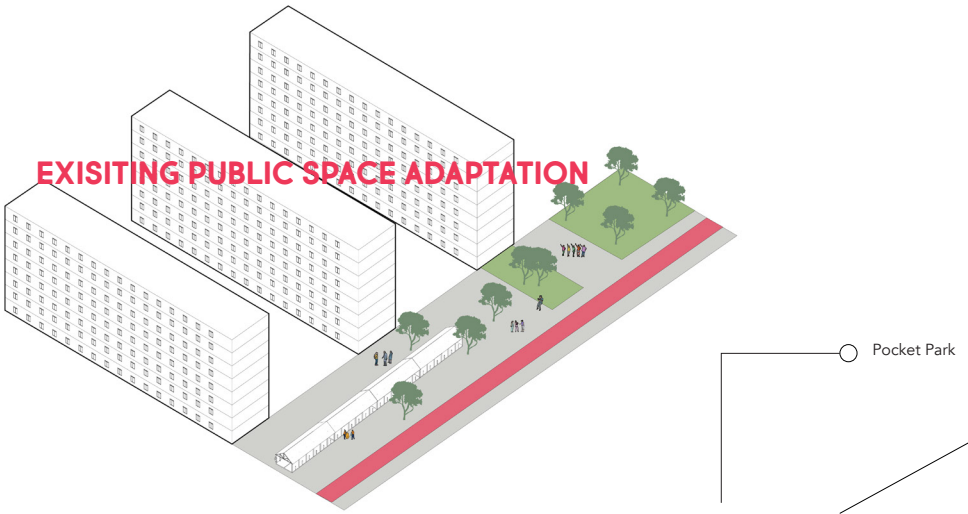
BYCYCLE LANE AND BIKE PARKING SPACE

These three main public spaces expect to host more functions such as group event, maker faire, marketing event. Existing nodes are expected to be built as opportunity for creating nodes in urban village to bring this maker movement to public, which will becomes essence of second stage strategy, aggregating. Aggregating means attracting more stakeholders to be involved in this maker movement by sharing the common vision of the whole village. It is about creating aggregation of the workforce related to maker movement, meanwhile, creating more job opportunities related to that.

everyone is maker

learning by doing

MAKER FAIR

Pi
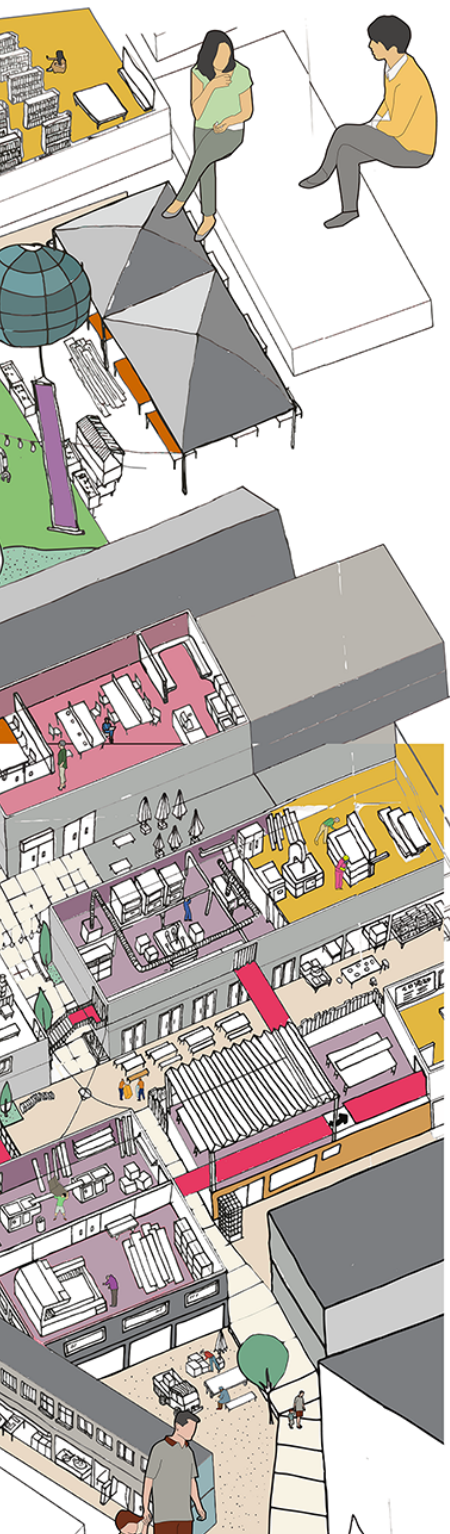
Here is one illustration of detailed usage of the space in industry building area of Futian Village. It intends to explore the possiblity of these spaces and how they could contribute to the maker movement spatially. It is not relacing current funcitons and social relationship but gradually transformed it by introducing new economic schedule.

Night View of Industry Block in Futian Village

Night View of Industry Blocks in Futian Village, made by Author

New Bicycle Lane and Bike Packing Area in Futian Village, made by Author

出口 EXIT

PARKING

坚辉商行

Co-Working Space in Old Facotry Building, made by Author
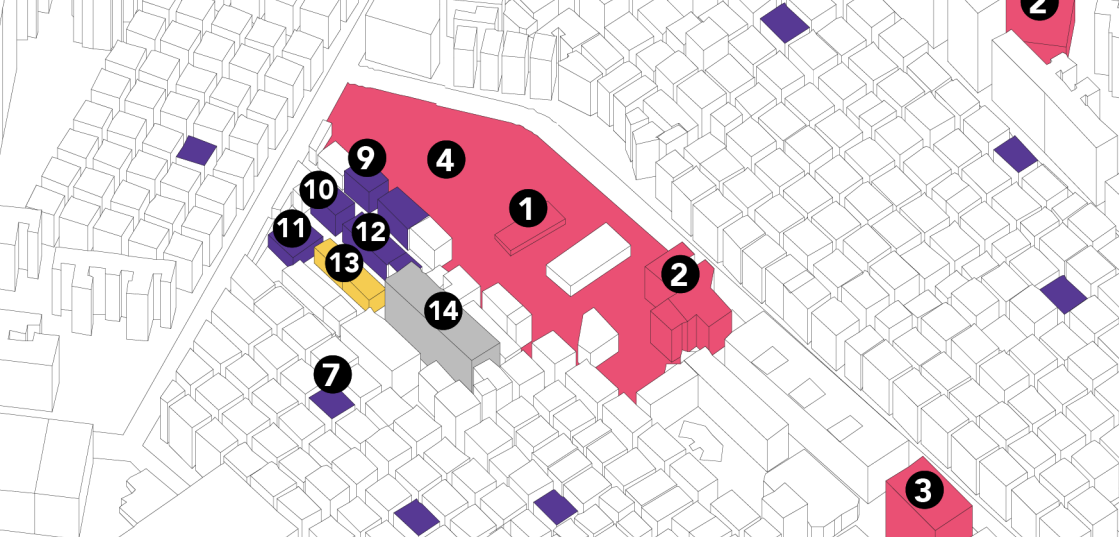
In term of infrastrucutre, new functions will be mainly located in industry building block where most of the sapce is used for resdientials purpose now. Following the building guidance we proposed for small scale, connections between buildings expect to be established since the ideal is not to replace current residential functions. In that sense, connection between buildings above ground floor would function as a belt to link all the building together and create a effective production space for makers but still keep the resdiential functions. Roof areas of these buildings are now occupied by illegal constructions with shade. These nagetvie places could be reactivated as public purpose for community buildings.

Meanwhile, exsiting production space in groud floors of buildings such as second hand furniture store, recycle center and logistic space will be expected to connect with maker related functions we proposed.
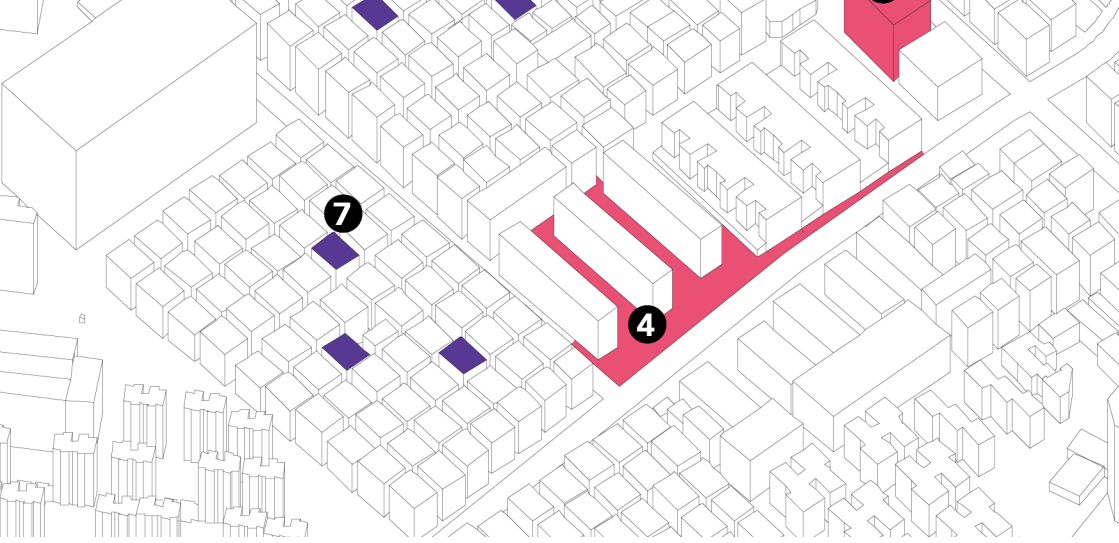
Functions including co-working space, makerspace, prototype factory, material shop, maker shop, makerspace and recylce center are designated in close distance becasue of the spillerover effect. Geographical proximity will create an atomesphere for makers, migrants and people who are interested. Such sense of maker creation will provide soft infratrucutre in education aspect, specificly for children of migrants and young aldult who expects to learn more after their working. It also provides more job opportunity in term of production, engineering. It will be a process for improving poeple knowledge in know-how, maybe not about know-why.

Through creating new flows of materials, money, knowledge, the functions of new infrastructure and facilities intends to establish a community of makers meanwhile breaking the resource monopoly created by urban villagers.

Meanwhile, evolutionary developemnt will continue happening in urban village blocks regarding the autonomy we provide for both villagers and makers. As the diagram indicates, gap between buildngs will be filed up to provide more space for users. Sharing space for hanging clothes, porket public space, even working space, sharing kitchen could be introduced. It turns curretn negative space into positive spaces to create either affordal living environment or life quality for residents.

CONCLUSION

To conclude, this scale intervention is about providing infrastrucutre for locals and maker groups. Using public space as mediation for different social groups for meeting and having diversified activities. It is an opportunity for both groups to have a different view abot space in urban village and also build up a real community through such new social-economic relatioship. Compared to the established econnomy wchih is heavily based on migrants, strategy shows a different attitude towards the role of villagers in urban villager. Instead of only harveting from constant change, they could also become investor to invest on the future of urban village meanwhile,providing new infrastructure for bettern living environment.
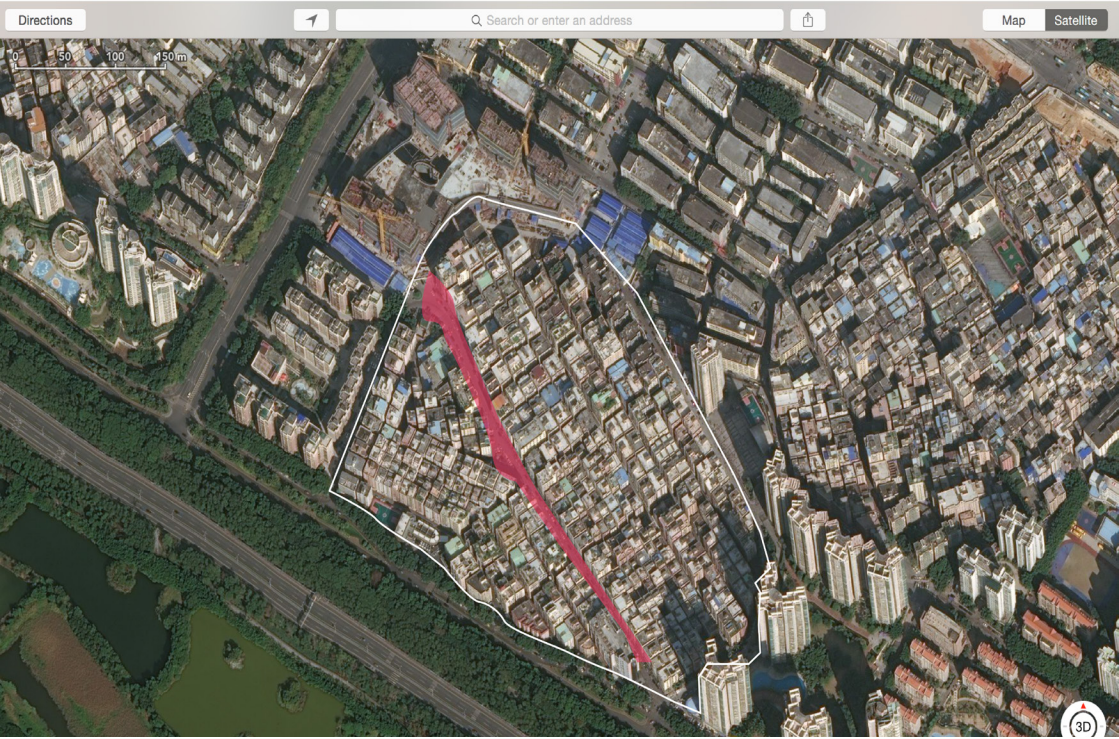
1.0 Government Led Urban Regeneration Model

Government will take the responsibility to complete the pre-land development, and then use the market-oriented auction to sell the lands. Local government acts as the main body of the village redevelopment, including overall redevelopment policy for urban village, demolition compensation for villagers, relocation plan for urban villagers and transition plan for resettlement, villagers resettlement program development and implementation. The government in the development of urban villages after the transformation program, by the financial investment to solve the demolition of the villagers residential compensation, the Government bear the responsibility of the villagers resettlement, and at the same time to complete the demolition of urban villages after the tender, auction to sell the remaining land to benefit.
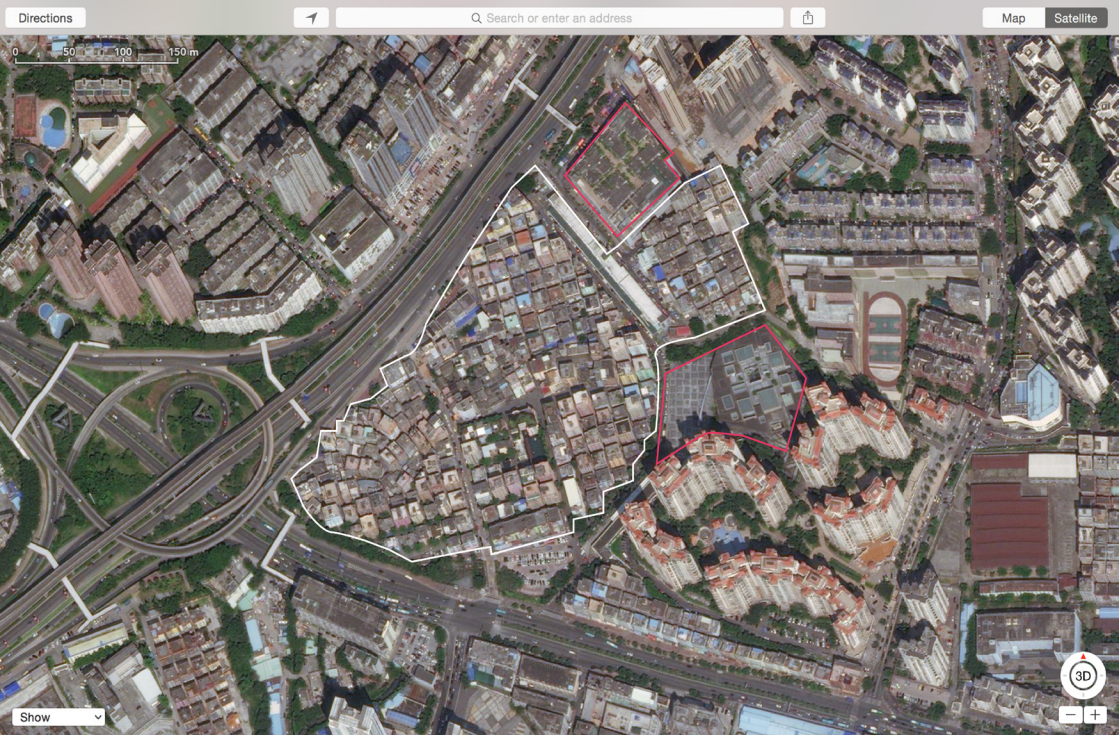
The above model can easily lead to two extremes: in most areas, large-scale "movement" type of demolition is often a serious shortage of compensation, violent demolition, mass incidents, and even vicious events greatly increased frequency; and in a small number of economically developed areas , The villagers asking price is too high, it is difficult to talk about the conditions, resulting in urban village renovation project is difficult to advance

2.0   Village-Joint Company Led Urban Regeneration Model

In the second collective self-transformation model, the village committee is often self-financing development, complete demolition resettlement, relocation construction and commercial housing construction work. After the transformation is completed, the village collective will be the remaining housing market sales, the formation of rolling devel
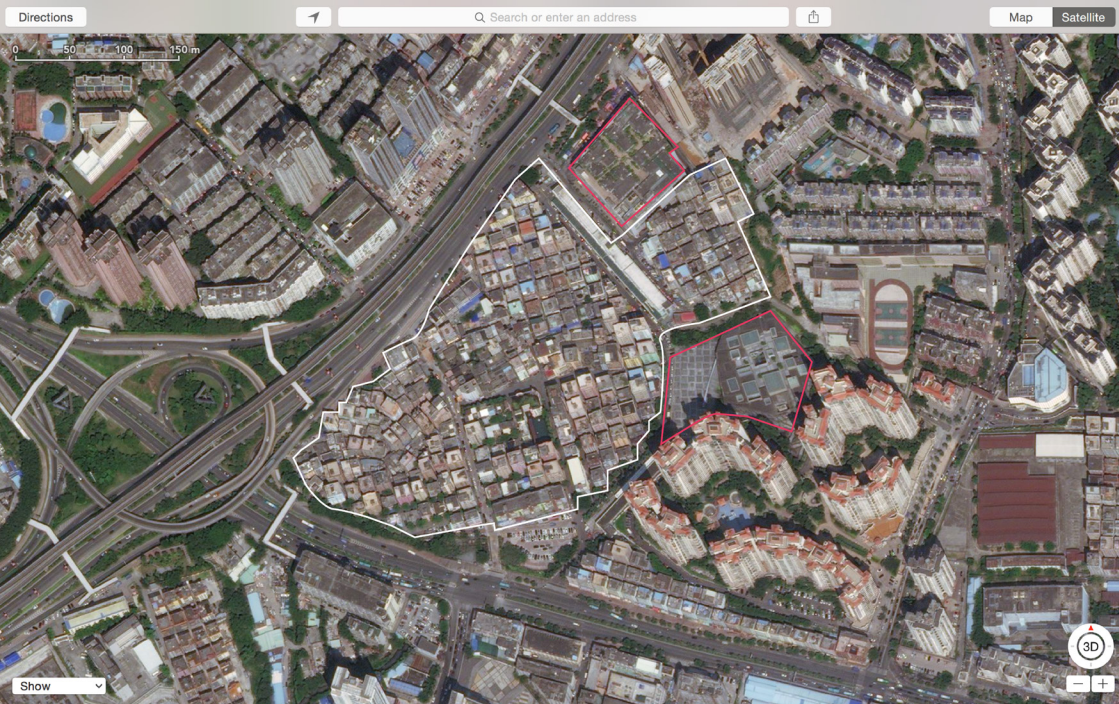
opment. However, this model exists in the construction process can not obtain loans, residential development quality is not high, the infrastructure is difficult to place, the development of residential "small property room" can not be listed and many other issues. Therefore, this model is only a very small number of collective economic strength of the village can be implemented.

3.0   Village-Joint Company and Developer Led Regeneration Model

At present, some places began to explore the model of cooperation between developers and the village collective transformation. Such as Shenzhen in 2009 released the "Shenzhen City Urban Renewal Measures" to encourage developers and village collective cooperation transformation, and developed a set of methods and measures. However, developers involved in the transformation may bring some problems: First of all,
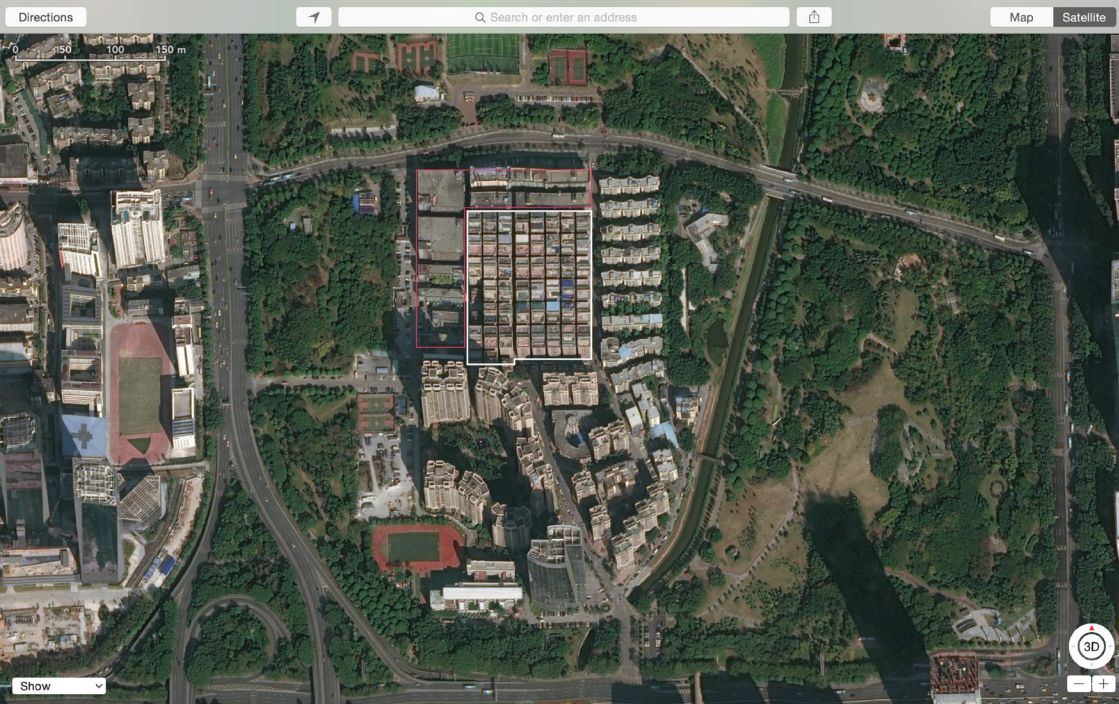
profit maximization as the fundamental driver, is likely to not conducive to social harmony mode of operation to transform. Second, the developer's capital structure to a small amount of self-owned funds to increase the amount of bank loans, may lead to developers because of credit policy adjustment into difficulties, can not be completed on time or even exit the transformation. Finally, due to the city's "city village" a large number of different sizes, small village not only covers less, there may be cut into pieces by road, the developers lack of attractiveness(□□ and □□, 2011).

NATIONAL ENTERPRISES

SHANZHAI BUSSINESSMEN

FRAMING

AGGREGATING

HUAQIANGBEI COMMERCE COMMUNITY

MANUFACTURING MAKERS

CONSUMERS

BRIDEGING

Informal

Forma

GOVERNMENT

Government Recongnized the Legal Statue of Changing Industry Block to Commercial Purpose

Keep Outdoor Advertisements and Organize Commercial Promotion Events in HQB

GOVERNMENT

MAKER GROUP

MIGRANTS AND SMALL BUSSINESS OWNERS

MANUFACTURING MAKERS

CONSUMERS

GOVERNMENT/DEVELOPER

FRAMING

AGGREGATING

BRIDEGING

Informal   Formal

VILLAGE-JOINT COMPANY

Market-Driven Development

Government ——————————————————— Developers

Bussiness as usual

Highly Controlled Urban Development
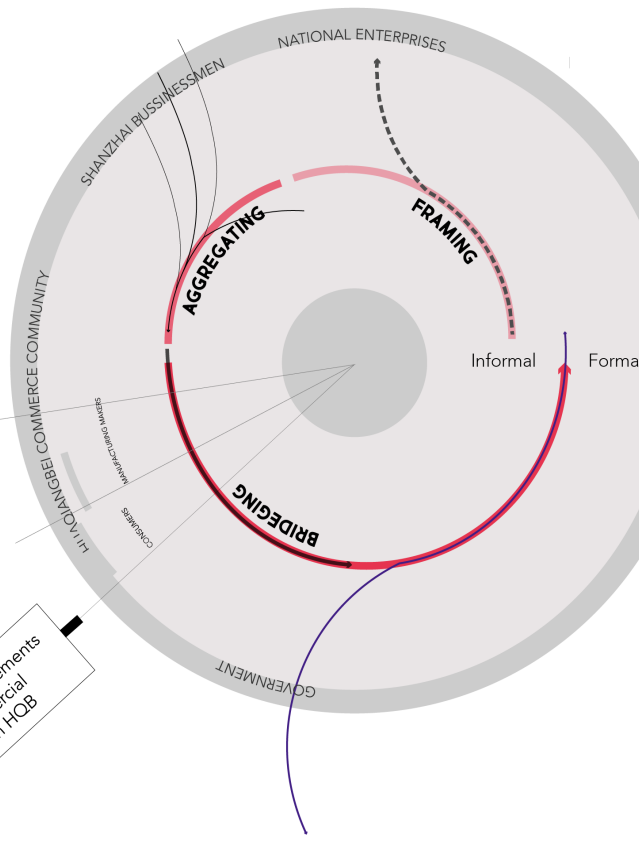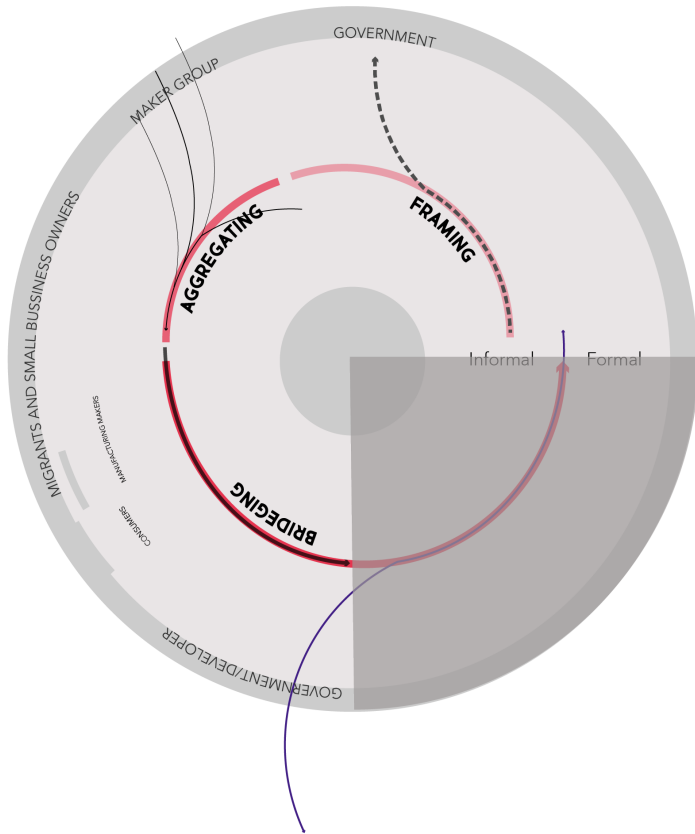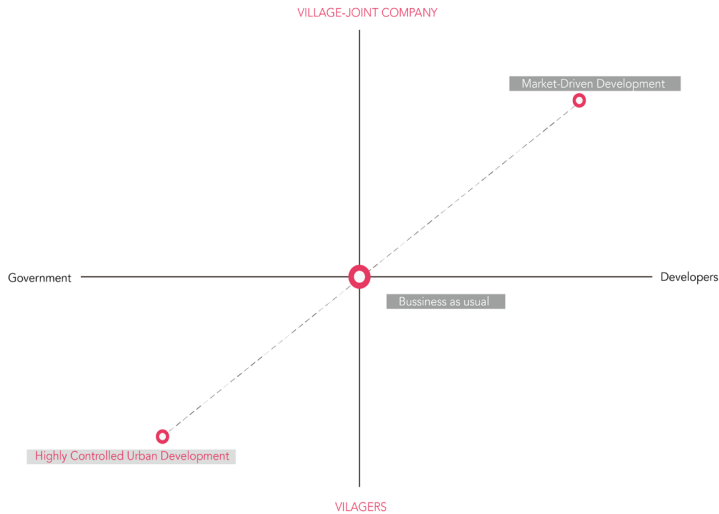
VILAGERS

4.15 SCENARIOS

First two scales intend to develop the urban village as a strong social-economy system while forming a strong maker community by providing new infrastructure and facilities. The intangible network in urban village is revealed or activated by new groups pf people while villagers also start looking at village in long run instead of only short term for compensation only. After community is built up, it is important to think how urban village could be connected to context or larger system again. In that sense, larger scale connection will face an uncertain future which depends on who will decide the future
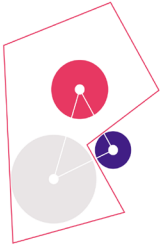
Scenario 1

Developers take charge of developemnt but still keep the local essense
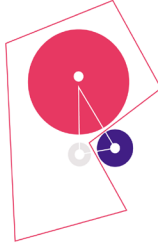
Scenario 2

Villagers become developers
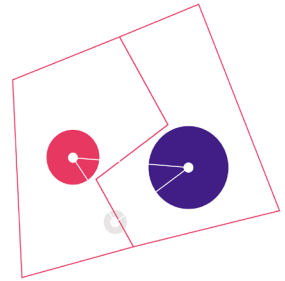
Scenario 3

Influence from Outside
Maker City, "Dafen"

Creative Workers
Social Economic Connections
New Centrality

urban village. As we discussed before, three different redevelopment models exist under current social, political and social conditions. These three different models all depend on the stakeholders involved. If we simplify it, we could predict that there will be three kinds of pathway that Futian village could follow in the future. It is minaly about the land right so belonging of land right will become the decided point of future of urban village.

According to the stakeholder analysis, villager joint company owns the most essential voice in local scale in term of village development because they have the land right. Villagers own the buildings and collective company.
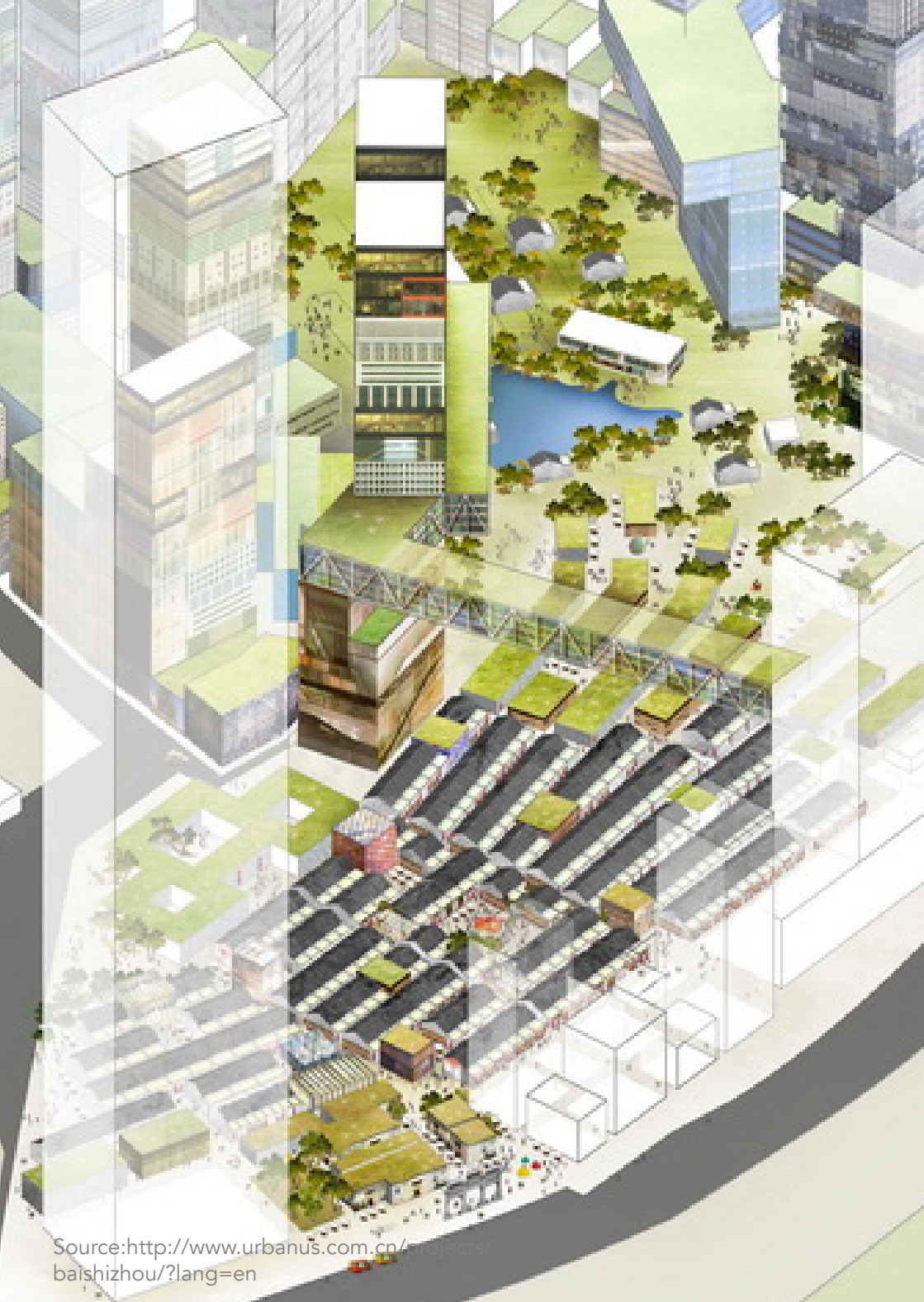
The thinking behind fist senario is that developers would seek for profit mixmum and its geographical location would create additional profit by real estate development. Chasign after money but still keeping the most functional part of the urban village as a marketing strategy for attracting renters and potential investors. High density will compensate for the money they paid for purchasing the lands from villagers but local buidling design strategy may be kept for high risign building design. It will become a marketin g project direclty which will be used by both developer and government as a new maker bussiness area.

Source: http://www.urbanus.com.cn/projects/gangxia-village/?lang=en

Business as usual would base on growth of current spatial development which is about adaptation of building typology. Negative space will be taken use but these spaces may not fully satisfy future demand for connection with formal economy and governmental vision. In order to bring new function, root area will be used as strategy for new group people. This strategy will respect current typology while creating new space for creative class and quality working and living space. Instead of conflicting in land right, air right will be new aspect villagers could control. In that sense, urban village become symbolic project and place itself which will become attractive for creative workers. It will represent a experimentalism in both innovation development and urban space development.

Governmental attitude towards maker city 2.0 will be positive from the case of Dafen. However, new functions will be proposed by government to increase the influence of these grassroots development which will rely on different typology. Analysis on context of Futian Village, central park, industry building along the river, one port will be potential assets government will take use. Instead of seeking transforming space in urban village, using flagship projects could be a win-win strategy for integration local development with governmental vision. These space would provide a large stage for makers while create a new node in current place.

4.16 CONCLUSION

Maker city 2.0 does not negative the significance of Maker City 1.0 instead saw it as starting point for empowering migrants and subversion purpose. It intends to enlarge the influence of maker city through including migrants in grassroots innovation, meanwhile foster the local social-economic production means. It is an explanation and interpretation that grassroots innovation in Shenzhen is not an end, but a means to next phase of innovation in Shenzhen inevitably triggers our imagination about what this next phase will do it for its citizens, especially the grassroots community that has been underrepresented for too long. The design intervention in urban village starts from building typology which aims at influencing the life of citizens in urban village directly. it does not focus on the existing vertical vitality but also turning the current negative space, such as intervals between buildings, roof area and surface area. Using policy to ensure the flexibility of the buildings will give renters and villagers more autonomy on their own spaces, meanwhile provide the change for building up collectivity and evolutionary possibility. Village scale design interventions intends to increase the life quality of urban village through providing new infrastructure and facility for both existing migrants and makers. The relationship among different stakeholders influences pathway of future development of urban village. Especially, how government as a player or not as a player in urban redevelopment could provide different scenarios for possible future.

REFLECTION

SOCIETY	SPACE	COMMUNITY
Research	Site	Design Model
Social		
Political		
Economical	Case	Design
Social-economical relationship	Expression of Society/Community	Create space for Society/Community
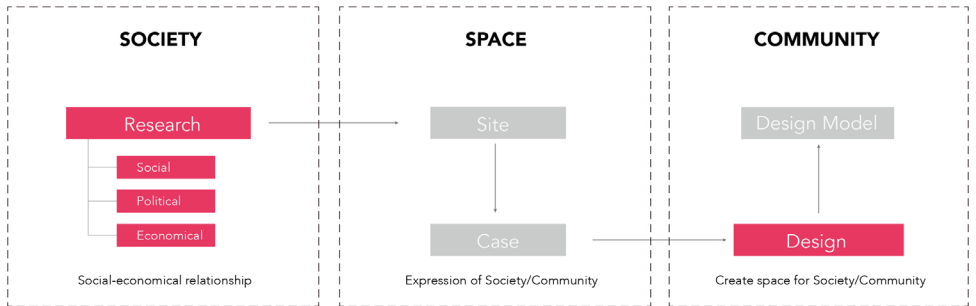
1 THE RELATIONSHIP BETWEEN RESEARCH AND DESIGN

The inception point of the research is not site based, but it originates from a social phenomenon. It intends to reveal the spatial consequence of society, which is caused by social, political and economic sequences. As the diagram (Figure 1) illustrates, the site, Huaqiangbei area where Shanzhai Movement is initiated, provides a base for connecting theoretical research and spatial response. This analysis generally contributes to the principle of using physical environment as an element to foster social movement. Research techniques that were used are both implicit (personal conception) and explicit (references, experimental, comparative research). Combination of information and intuitions research provides enough knowledge for answering the research question, which is in terms of environmental demand from different social groups. Design proposals for case

chosen will conversely influence the existing socio-economical relationship and contributing to urban design framework on involving social innovation in urban redevelopment. Thus in this project, relationship between research and design is more arguing for the relationship between society and space and how they influence each other in a way for more inclusive community building.

2 THE RELATIONSHIP BETWEEN THE THEME OF THE GRADUATION LAB AND THE SUBJECT/CASE STUDY CHOSEN BY THE STUDENT WITHIN THIS FRAMEWORK (LOCATION/OBJECT)

The graduation lab of the author is Design and Politics, of which the topic is city of comings and goings. It deals with the theme migration this year (2016-2017). This year's studio is trying to explore how we could design buildings, cities and landscapes that make the best of our restless lives, that profit from the constant exchange of people, that can withstand the pressures of a growing and shrinking, ever changing population.

Corresponding to the theme of the studio, the urban village in Shenzhen is chosen for the research. The case study I used for detailed design is a typical typology of an urban village in Shenzhen. As an arrival city, urban village functions as the transition place for migrants, where around 50% of the migrants of the city are accommodated. It witnessed the constant change, comings and goings of migrants in Shenzhen during the past 20 years.

SHANZHAI CITY

MAKER CITY 1.0

POLITICS ⟷ SPATIAL

SHAZHAI ENTREPRENEURS

GOVERNMENTS

POLITICS ⟷ SPATIAL

MAKERS

GOVERNMENTS
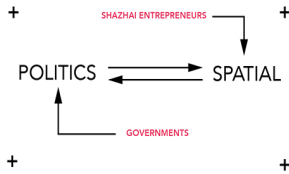
Integration
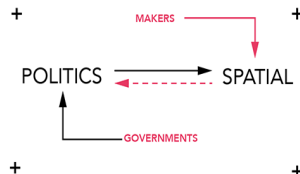
Mismatching

Thus design interventions in the project start from the constant change in urban village. The author understands that city of comings and goings is about flows of money, ideas and materials. According to the social theory of space and the theory of the space of flows, space is the expression of society (Castells and Castells, 1998). Since our societies are undergoing structural transformation, it is a reasonable hypothesis to suggest that new

MAKER CITY 2.0
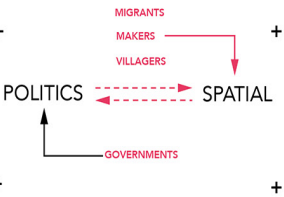
Dynamic equilibrium

spatial forms and processes are currently emerging. As research indicates, what are always staying the same in urban village are the building typologies, public space and the socio-economic system. Interventions on these three aspects will bring a different value towards an urban redevelopment in urban village. It is about providing short term or long term citizenship for migrants through sharing facilities and new infrastructure, such as education space, skill center and employment opportunities. Meanwhile, using urban village as an incubator for 'makers', these grassroots innovations challenges the paradigm shift currently taking place in Shenzhen from top-down planning towards a new wave of experimentalism and grassroots developments.

In this connection the Design as Politics Studio fulfilled perfectly the questions put forward by the problem analysis.

3 THE RELATIONSHIP BETWEEN THE METHODICAL LINE OF APPROACH OF THE GRADUATION LAB AND THE METHOD CHOSEN BY THE STUDENT IN THIS FRAMEWORK

The graduation lab of the author is design as politics. This chair sees politics in the widest sense possible and defines it as the level in society where conflicts among stakeholders become visible and are being solved. Hence, politics and Design are not understood separately, but rather as politics as an essential aspect of design along with the simultaneous situation that design is an equally tool for political action. By looking

at the realm of politics, the tool set of the designer will be renewed, while the spatial perspective of developments in society will be considered to enrich the existing set of political instruments. My research contributes to the research question of this studio, "What is the uniqueness of the government as a player in the society forces, and how does this expresses in the built environment?" To answer that, the studio is trying to explore, first, the historic and fundamental relationship between architecture, planning and 'government' where design does not only have a functional role in the organization of the territory, but also expresses the values that is highest on the agenda. Secondly, a strong but fragmented demand is recognized by the chair, which is about more control of citizens on their context, as individual, collective, and even on a regional and national level (Design as Politics, 2016).

In my research, I used politics as a tool to do the analysis, form strategy and contribute to the design, eventually reflect to policy. As Castells and Castells (1998) stated, "space is expression of society, not reflection of society." The design intervention proposed will in turn affect the society and assist in related policy to help community better express themselves in space. Method chosen for research consists of three sections as figure 2 shows. In the section one, History and policy review gave me an insight about the current innovation system and how space can contribute to its development along with the role of government in shaping the Chinese innovation typology in China. Meanwhile, it demonstrates the fact that grassroots

innovation model in Shenzhen reflects the strong demand from locals for their own environments. How locals use their own intelligence through collective efforts to fight with governmental organizations contributed to the principles for later design intervention. Section two is about identifying the local demands which is also in line with the potential but fragmented demand for more control on their environment, as individual, collective and even on a regional scale. Politics review helped me identify the mismatching between local demand and national culture. Relocating 'makerspace' in national innovation system revealed the fact that a gap exists between national culture and grassroots risky culture in term of innovation. It suggested that new value should be introduced to the current maker movement, which is about making mistakes, taking risks and making as a lifestyle. Final part of the research intends to use urban village as case study to explore the possibility of using makers as a hint for inclusive urban redevelopment. The relationship and accord among different stakeholders influences a pathway of future development of urban villages. Especially, how government as a player or not as a player in urban redevelopment could provide different scenarios for a possible future.

Therefore the methodical line offered by the studio perfectly matched to the methodical line chosen by the project.

4 THE RELATIONSHIP BETWEEN THE PROJECT AND THE WIDER SOCIAL CONTEXT

The project seeks to explore a new way of urban redevelopment method in Shenzhen, which assists in incubating urban grassroots innovations. This thesis argues that urban planning and design should not just limit to the spatial and economic aspects, but it should also consider social aspects. When redevelopment projects are proposed and planned in cities, existing social relationship especially when the community is always being ignored and its essence is not appreciated and considered by the decision makers. However, redevelopment should not be simplified to destroying the building, providing compensation and relocating house owners. It needs to go beyond the physical structure of urban village or other typologies, and bring an understanding of intangible network of communities in the entire city. Thus the project is about revealing the local assets and how could emerging grassroots development strategies integrate with the local community. It provides another possibility for a city of comings and goings where migrants are not underrepresented and could even earn certain levels of autonomy in their environment. The flows of comings and goings could benefit migrants and provide added values to urban redevelopment, which is about inclusive urban redevelopment and social inclusion.

As Lam (2016) emphasized, it is an explanation and interpretation that grassroots innovation in Shenzhen is not an end, but a means to next phase of innovation in Shenzhen inevitably triggers our imagination about how its citizens will be treated in next phase, especially the grassroots communities that have been underrepresented for a long

time. The analogy he used in the article may be appropriate for Shenzhen, an egg: "impacting from the outside would provide food for others, but impacting it from within would breed a life of its own".

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