URBAN MEDIATOR
Future Infrastructure Network for the Village in the City

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ABSTRACT

With the expansion of city development due to the land reform policy in the 70s in China, it leads to an inevitable urban phenomenon - village in the city. These villages become the remanents to the city which will be demolished and reconstructed in the future. Adding social value to the villages towards the city or reforming the villages cannot solve the problems. Indeed, by introducing a public device, urban mediator, it can improve the living condition, provide facilities to the villages, and benefit to the urban neighborhood. That is the re-engagement of social life and facilities both back to the village and the city. Instead of treating it as a problem, it can be seen as a great opportunity to reform, reconfigure, and design for a new urban identity for tomorrow.

Concerning and accepting the fact that the village will be demolished and reconstructed in the future, this thesis will bring out the importance of a project timeline: proposing an urban mediator as a remarkable function on how it can be transformed and performed from today to tomorrow. It involves a system of dynamic: a dynamic that reacts to the change of social position, village development, and urban reconfiguration. It is a network of urban infrastructure which acts as a mediator between the scales of the village and the city. It is a new public domain with implication in global, regional, and local levels.

Global: the urban mediator is used as a mean to speculate as a new urban identity to the city in which it can be applied to other villages and countries at large. It helps the village to sustain today, performs with the urban city programs, and transforms into a different programs tomorrow. Regional: the urban mediator establishes an interactive social platform which can be enjoyed and shared by the village and the city. It is a public domain generating a connection in the layers of spatial, functional, formal, and social levels. Local: the urban mediator provides the urgency of needs. It serves as the basic facilities provision to support the existing village. It reprovides a communal center for the village breaking the original individual solitude living style. Furthermore, it sets up a framework for future development programs.

Therefore, the urban mediator proposes an infrastructure system that can regulate, guide, and as reference for the future development. Furthermore, it will become a new urban typology for the city through demonstrating and catering for different scales of programs, building and structural system which can be shared by today and tomorrow.
I would like to offer my most sincere thanks to:

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Introduction

The Village in the City (ViC) phenomenon appeared for more than 30 years since the land reform policy in China. The friction with the globalised and developed surrounding city and absorption of the localized and cultural indigenous gives a specific urban form to these villages. However, the villages create several social, economical, livable problems to the city. This thesis is to re-configure a new typology for the Village in the City (ViC), in which taking the role of the Government, the new typology will ameliorate the existing living condition for both the ex-farmers and migrated works, provide basic infrastructure system, and generate both architectural and urban possibilities for future development. It will propose a sustainable solution to solve the existing environmental problems created. The new Village will become a welcoming place for tourists instead of an isolated boundary in the city. At the same time, it will establish a new image of identity while expressing the cultural indigenous. Furthermore, it will become a prototypical model for future urban development that can be employed in different cities in China.

Background

Land reforms in China

There are mainly four periods of land reform history in China. In the first period before 1950s, there were no rules or limitation to farmers. In the mid-1950s, a second land reform was introduced during the Great Leap Forward. Individual farmers were compelled to join collectives, which, in turn, were grouped into People's communes with centralized property rights and an egalitarian principle of distribution. This policy was a failure in terms of agriculture production.

The third land reform, which is the most important and influential one, began in the late 1970s. The policy introduced a family-based contract system called the “Household Responsibility System” in which each household is responsible for their own lands. However, although land-use rights were returned to individual farmers, collective land ownership was left undefined after the disbandment of the People's Communes. Finally, the last land reform further pushed the idea of “Household Responsibility System”, in which it led to new working industries.

From that time onwards, these ex-farmers either become industrial workers within their villages or migrate to other cities. However, these migrate workers are still not registered as citizens in governmental or urban statistics; instead, they are treated as a special group of “migrant workers”. These “migrant workers”, who are also called the “floating” people, are low-income people. They migrate from the rural area or countryside to the cities. Yet, they are not accepted as city dwellers.

Timeline of land reduction

After the land reforms policy carried out by the Chinese Government, there was a significant lost of farmlands since 80s. The farmland areas reduced from originally 21.65 billion acres to 18.26 billion acres from 1980 to 2009. In the past 30 years, the total lost area of farmlands, 3.39 billion acres, equals to the size of 65 Manhattan.

Evolution of Village in the City

China is an agriculture society for more than three thousand years. People live with agriculture and feed by agriculture. The Chinese city was firstly an administrative centre on which consumption depended, with incomes being drawn from farming the land. However, the land reforms change their lives and at the same time force them to shift their way of livings.

There is a huge amount of agricultural land occupied by cities due to the rapid urbanization of the past 30 years. The uniqueness of the village ownership of the housing plots in urban district has remained intact because of the protection by the law. However, these villages which are all surrounded by the rapidly developed city can only expand vertically. The density of these urban villages grows even higher than the surrounding city. The remaining of these villages within the cities creates a new form of urban co-existence.

China is now at a critical point in time in terms of thinking how it can sustain a well-balanced development by absorbing and accommodating the ongoing massive migration of ex-farmers in the coming 20 years. The Village in the City plays an irreplaceable role in retaining both the indigenous identity and new urban development. These villages are not only places to live; they are also basic workplaces for the inhabitants to start small businesses. The unique social and architectural condition of the Village in the City results in vibrant activities; it is a 24-hour mini-city, an urban enclave within the city fabric. Village in the City form an alternative open structure containing small-scale shopping streets, intimate public places, and furthermore, opportunities for small businesses within its own.

These villages, in contrast with the surrounding globalised city, retain traces of indigenous creation through the typology diversity of spatial organization, enthusiasm of original cultural
Problem and crisis
In cities with a high concentration of migrant workers, such as Shenzhen, Beijing and Shanghai, more than half live in these villages often characterized by high density, poor quality housing, limited infrastructure, poor safety and hygiene and social disorder. Moreover, urban villages often provide facilities such as restaurants and medical clinics with affordable prices, which make them a popular choice for migrant workers.

The living condition, both infrastructure facilities and sanity, is unacceptable in the villages. In average, there is 17% without running water, 61% without bathroom, and 57% without kitchen. For those migrate workers who can only gain 200-300 RMB per month, how can they afford or even survive from 2000 RMB rent in Beijing, 1500 RMB in Shanghai, or 800 RMB in Guangzhou? There is no way for them to live in a proper housing and thus, they can only choose to squeeze into the these villages where they can afford. As a result, the villages in the city becomes an extremely high density area. Each person only live with 7 meter square space with the extreme condition 2 meter square.

The first question is how can we improve the living condition, accommodate the density, and provide affordable housing for these ex-farmers and “floating” workers?

In the other aspects, the evolution of these Villages in the City leads to several environmental and health problems. On the global level, it is the high carbon emissions level. According to the Carbon Dioxide Information Analysis Center (an organization within the United States Department of Energy), developing countries emit almost 60% of the total greenhouse gases of the world, with 22.2% from China alone. Through China signed the “Kyoto Protocol” 2002, it still has the highest greenhouse gas emissions of any country in the world, with 40% produced by these industries.

As these small-scale industrial factories are neither large industrial factories nor residential housings and are situated these villages, it turns out to be a huge grey area which is lack of quality and environmental control. The high density living condition in which the industrial activities placed on the first or second floor can directly affect the living activities above. Builders or residents pay none or little attention to the degree of how appalling the industrial production is. Therefore, any improper industrial treatment will greatly affect the health of the residents.

Village value and Government position
Foreseeing a continuous phenomenon that more lands will be taken by the Government, the high mobility of migrate workers to mega-cities, and most importantly, the rapid development of the cities in the future, the condition of environmental, living, and urban development will only get worse if there is no insightful strategy for re-configuring these villages. Thus, this is the urgent moment to take action.

In view of those problems and crisis generated by the village, the value of retaining the village is obviously low. In urban scale, the village occupies high value land, creates bad sanitary image, sets boundary walls to the city, it does not provide positive image to the city. In the village scale, the village has unacceptable living condition, lack of facilities, and illegal construction, it does harm to the ex-farmers and migrants. So what should the Government do?

In the city point of view, there is no point to retain the villages as it hinders the city growth and development. In the village point of view, however, there is also no point to demolish their homes. So, should the Government demolish or retain the village? Or do we have other choices? Can we take it as an opportunity to create a new identity, new image and new urban value to the city?

Thesis Intention
Proposition towards ViC
City expansion is inevitable and is crucial to a city development like Beijing. Villages will be demolished and reconstructed in the future. Therefore, either adding social value to the villages towards the city or reforming the villages are not enough and not the main theme. Instead, introducing a public device, URBAN MEDIATOR, that can improve the living condition, provide facilities to the villages, and beneficial to the urban neighborhood will be crucial to both sides. That is the RE-ENGAGEMENT of social life and facilities back to the city.

A platform for mutual supplementary
Due to the high density of row houses occupying mostly the whole village, it does not have any spare communal spaces for social gathering. Sharing 4-5 toilets and bathroom within a thousands people village, the sanitary condition has reached an unacceptable level. They do not even have their own drinking water system. Thus, through providing a new form of bathhouse, it aims to recall the memory of the traditional culture of Chinese bath and how to reform it into an enjoyable and pleasant space.
for the villagers.

The urban city, instead, has more mature facilities provision and open spaces such as green spaces, carpark, and landscape carpark within the community. However, these “open spaces” are not open to the public. They are privatized public spaces. No matter how many of these open spaces are designed for the public, a lack of social interactive platform is still the main urban problem.

A system of dynamic
Concerning and accepting the fact that the village will be demolished and reconstructed in the future, this thesis will bring out the importance of a project timeline: urban mediator as a remarkable function on how it can be transformed and performed from today to tomorrow. It involves a system of dynamic: a dynamic that reacts to the change of social position, village development, and urban reconfiguration. It is a network of urban infrastructure which acts as a mediator between the scales of the village and the city. It is a new public domain with implication in global, regional, and local levels.

Global
This urban mediator is used as a mean to speculate as a new urban identity to the city in which it can be applied to other villages and countries at large. It helps the village to sustain today, performs with the urban city programs, and transforms into a different programs tomorrow.

Regional
The urban mediator establishes an interactive social platform which can be enjoyed and shared by the village and the city. It is a public domain generating a connection in the layers of spatial and social levels.

Local
The urban mediator provides the urgency of needs. It serves as the basic facilities provision to support the existing village. It rechanges a communal center for the village breaking the original individual solitude living style. Furthermore, it sets up a framework for future development programs.

Design for tomorrow
If the urban mediator can only serve as facility provision back to the village, it is not enough. It will be a short-term and temporal project. The urban mediator can bring out a remarkable value to both the village and the city only if it is well-planned for today, but most importantly, for tomorrow. It will potentially bring the village alive and become the urban guideline in the future. Hence, it is a long-term project.

As a result, the urban mediator proposes a system that can regulate the future development and become a new urban typology for the city. It involves different scales of programs and its building/structure system which can be shared by today and tomorrow. It will be a combination of permanent and flexible system.

Programs
Re provision of Programs
Different infrastructure programs will be re-introduced back to the village as a mediator with the city: infrastructure corridor, pedestrian threshold, sanitary hubs, landscape fields, commercial street, and recreational spine. These programs work individually and also with each other to support the village today and can be transformed into related programs tomorrow. They are structured and become the infrastructure network, in which the network system can be applied to different sites and other cities and countries at large. The programmatic organization becomes a new urban typology and identity for the city.
01 Village in the City
Urban phenomenon since 70s in China
village in the city formation

farmland before 70s' → farmland collected by Government → infrastructure development → low-rise development → high-rise development

village in the city
migration flow in China

population
floating population

migration flow between urban and rural

urban to urban migration 20.5%
rural to urban migration 51.5%
urban to rural migration 5.0%
rural to rural migration 23%

beijing 41 millions
15,500,000 population

2/3 population

30%

floating population 1/3
salary and rent discrepancy

where can I live?

only...can live in the village

average income for floating people per month

average rent per month
Due to migration and provision of low house rent, the village is highly densed. People only live in a small portion of area. The extreme condition is 2 meter square which is only a bed size. People do not have their own privacy and they have to share rooms, spaces, and public infrastructure which lead to the sanitary problems.
17% no running water
57% no bathroom
61% no kitchen
The lack of basic infrastructure facilities situation has not been improved through many years. Sanitary only gets worse than before. The most extreme examples are: 3,000 villagers only share 12 public bathrooms, 2,000 villages share 4 public bathrooms. People have to walk around 100-200m to the bathroom in average. It takes around 2-3 minutes walk. It also creates long queue during high peak hours such as morning and evening time. In addition, there is no incoming drinking water from the city to the village.
Beijing city expansion

The development in Beijing has been expanded more than two times since 1960s. The farmlands within the inner rings have been gradually taken away from the Government and turn into new development.

Village in the City, Beijing

The Villages in the City distributes all over in China. Within a total 656 cities in China, Beijing and Shenzhen will be two potential sites. Beijing occupies 10% of the Villages in the City in China.

Beijing has a solid and rich culturally, political, and social background with both the harmony and contradiction of the new and old fabric. There are 3 types of Village in the City: city, city-village, and village. In Beijing, these villages are classified as the city-village type. Although these villages are scattered in different rings but most of them are situated between 3rd to 6th rings. They are surrounded by highrise, lowrise, highway, and main roads.

In Beijing, there are 331 villages 10 years ago and now only 134 village left and are waiting to be demolished in the coming 5 years.

The city-village type is a mixed of the both. The 10% of these villages occupies 95,000 acres with a population of 7.15 million, which is one-third of the total population of Beijing. Within these 7.15 million populations, 50% are migrate workers.

02 Beijing Development

Expanding city development and shrinking villages in the city.
ViC distribution

14 ViC

25 ViC

21 ViC

41 ViC

29 ViC

4 ViC
03 Thesis Intention
Global, Regional, Local; design for tomorrow
disappear in the next 20 years

urban mediator

expand in the next 20 years
The urban mediator is used as a mean to speculate as a new urban identity to the city. It is also an infrastructure network proposing a new urban guideline for future development. Demonstrating the infrastructure network as a new urban prototype, it can be further applied to other villages and countries at large.

The urban mediator will become a remarkable function on not only how it sustains the village today but also performs tomorrow. It involves a system of dynamic: a dynamic that reacts to the change of social position, village development, and urban reconfiguration.

It becomes a new urban strategy to respond to both vernacular architecture and newly development.
Regional

**social interactive platform**
anchor of development between the intimacy of private life and the sociability of public life.

This urban mediator sets a social interactive platform between the city and the village. It breaks the privatized spaces by re-introducing a public domain in which it brings back the social lives and gathering spaces to the city.

**fabric mediator**
it becomes the threshold between the urban and village fabric

The urban mediator also acts as a fabric mediator. It regenerates the existing timid and isolate relationships between fabrics into a more fusion and activate one. It is the formal and spatial threshold between the new and old fabrics.
The infrastructure reprovision solve the problems for the existing insufficient village facilities. In which the proposed infrastructure provides the urgency of needs. It includes transportation, pedestrian, sanitary, landscape, commercial, and recreational programs.

The highly densely one floor row houses in the village limit normal daily activities boundary of the villagers. Each house, thus, becomes an individual solitude. There is no gathering or communal spaces within the village.

Therefore, the urban mediator re-introduces back the social life as a communal gathering spaces to the highly densely village.
Site I Liu Jia Yao

There are 7 sites selected based on the urgency of demolition which is the site is near the city center, and surrounded by highrise, lowrise and well-developed infrastructure.

The site, Liu Jia Yao, is situated at the southern part of 3rd ring at the Liu Jia Yao T-station. It sits on the North-South axis parallel to the main city axis. There is a developed subway lines running through the underground of the site.

Liu Jia Yao, in the 18th century, was a family named “Liu” producing tiles. It has two hundreds years. It was under controlled by the Fei Tiang district in the 50s.

30 years ago, the Fei Tiang planning board decided to extend the North-South axis, in which it cuts through the center of the site. The demolition started 3 years ago. Since then, the village is divided into the left and right portion with the new main road in the middle.

Recently, there are still near thousands of people living in the village. The rent has an average of 10.6 USD per sq meter and 72 USD per month.
urban fabric scale density comparison

- Site: 0%
- Village fabric: 83%
- Urban fabric: 29%
- Manhattan fabric: 45%
- Hong Kong fabric: 67%
urban void comparison

courtyard spaces | commercial open spaces | sports space | infrastructure spaces | privatized open spaces

Area: 50 m², 530 m², 4,670 m², 9,620 m², 30,600 m², 32,000 m²

Types: courtyard spaces, commercial open spaces, sports open space, infrastructure spaces, privatized open spaces, privatized open spaces, unused open spaces, site
site photos
house - house

subtle - village streetscape scale and relationships

house - commercial
commercial - commercial

commercial community
subtle - village streetscape scale and relationships
open carpark

absolute - city scale and relationships
absolute - city scale and relationships
level difference

recess canopy

mediate - village-city streetscape scale and relationships
mediate - village-city streetscape scale and relationships
wall / fence

building block
site existing infrastructure

toilet + bathroom

village housing

commercial

urban fabric

new infrastructure

toilet

bathroom

1 floor

house

periphery

commercial

urban highrise

surroundings

newly developed area

vacant road

vacant streets

pedestrian parking

open space

bath + toilet

residential (1-2 fl)

residential (17+ fl)

residential (13-16 fl)

residential (7-12 fl)

residential (3-6 fl)

residential (1-2 fl)
The condition of the existing village further proves the speed of how fast the city reoccupies the village through urbanization. It is experiencing the 3 inevitable fortunes: remaining, demolishing, and reconstructing. Depends on the period of the property rights of the lands, the villages will be demolished and reconstructed in the future.

The site will be classified into 2 projects: urban mediator between the new and old edges and the central spine.
site layers

urban = 29%  village = 65%
density

urban = 8.5%  village = 2.7%
landscape open space

urban = 14.4%  villa
parking
14.4% village = 23.5%
sanitary
market exchange
05 Urban Strategy

The urban mediator, threshold between the new and old fabric
existing condition

2010

PROPOSED URBAN MEDIATOR

2010

village demolished

2015
Future Vision

The existing condition indicates an absolute separation between the village and the city. Forseeing the village will be demolished and have new development, can there be another type of new urban identity and form?

By proposing an urban mediator, it will vertically connect the flow, programs, and spaces from the village while horizontally from the new fabric.

In 5 years, the village will be demolished. The mediator will still function programmatically and spatially between the existing new and old fabric.

At the same time, the ground can be further expanded to establish linkage and connection.

Within 10 years, there will be a new development replacing the demolished site. The mediator performs as a future development guide for the new site in which they can be inter-supplementing one another.
the west new and old edges
the east new and old edges
re-introducing infrastructure network

infrastructure corridor

pedestrian threshold

sanitary hubs
The urban mediator performs as an interactive platform between the city and the village in which it reconnects flows spatially, formally, and programmatically. It brings flows vertically up from the village and horizontally from the city.

The infrastructure prototype contains village and city programs. Each of them appears in a "finger" form which connects the programs from the village and the city correspondingly. The programs of the village and the city within the same zones have different sizes but similar programs. The crossing of the two programs becomes the mediator in which the intermediate spaces turn into open space. These open spaces contain courtyard, playground, pools, and other recreational spaces.
programmatic organization and infrastructure prototype
site plan
ground floor plan - pedestrian threshold to the village
basement plan - connection to existing carpark
main floor plan - threshold to existing urban fabric
programmatic path typology

- exchange
- market
- market
- grocery
- open space
- sunken courtyard
- ground
- in the building
- landscape roof

section cc
mediator scenario

commercial connection

commercial - roof garden connection

village market

village houses
sectional perspect
Urban Connection
bridging between the mediator and existing city programs
On the Bridge

passage between the mediator and urban programs
Village Connection
extension of ground from the village to the mediator as exchange courtyard
Roof Garden

relationship between courtyard and roof garden
Pedestrian Threshold
main pedestrian threshold between the village and the city
Exchange Courtyard
urban and village programmatic exchange courtyard
2010 phrase 1 - urban mediator

2015 phase 2 - landscape
future development possibilities 2020

**highise**
- FAR: 5.2
- Site coverage: 22.3%
- Green coverage: 25.7%

**midrise**
- FAR: 2.48
- Site coverage: 20.7%
- Green coverage: 20.7%
new typology system

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<td>0.6</td>
<td>1.35</td>
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<tr>
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<td>58.9%</td>
<td>45%</td>
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extension of urban space
access point as communal spaces
road redirect
phase
sectional programmatic organization

09.24.2010
future road extension

transportation corridor

drop-off

loading and unloading

carpark

10.27.2010
expandable structure
scale and experience
light
activated public ground
pedestrian flow

exchange fingers

recreation

11.11.2010
village facilities statistics + standard program requirement

village population

1062 # 3 = 3186
units lot. of people population

existing toilet facilities

4 × 3 = 24
toilet utens. total toilets, toilet shared by 45 units or 1.95 people

standard requirement

proposed facilities

1062 × 1062 = 1062
units toilet

existing bath facilities

1 × 20 = 20
bath bathhouse total baths, bath shared by 36 units or 108 people

waiting time (minutes)

morning peak hours

450 mins

evening peak hours

250 mins

day hours

low-income public housing

standard housing unit

unqualified village
5 water-service systems relationship

1. without water
2. water as filter
3. water without treatment
4. water as heater
5. water treatment

- without water
- water as filter
- water without treatment
- water as heater
- water treatment
## Scale of Programs

<table>
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<th>Program Area</th>
<th>250 m²</th>
<th>250 m²</th>
<th>300 m²</th>
<th>350 m²</th>
<th>350 m²</th>
<th>400 m²</th>
<th>400 m²</th>
<th>450 m²</th>
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<td>Large Span</td>
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</tbody>
</table>

- **Program Area**: 5200 m²
- **Today**: 250 m², 250 m²

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### Diagram

- **Urban Village Service**: 500 m² calculation
- **Small Programs**: 20 m², 40 m², 60 m², 80 m²
- **Medium Programs**: 100 m², 120 m², 150 m²
- **Large Programs**: 200 m², 250 m², 300 m², 350 m², 400 m², 450 m²
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