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## Abstract

*Based on the revival planning of Yihe, Nanjing, this paper emphasizes the importance of culture to the metropolis, explores the alignment of new formats and historical spaces, and generalizes several strategies of historical space activation on the respects of culture revitalization, industry innovation and space activation.*

## Keywords

*Culture Revitalization, Space Activation, Industry Innovation, Yihe Road*

## 1. Introduction

As an ancient capital of six Dynasties, Nanjing enjoys a long history of more than 7,000 years of civilization as well as a history of nearly 2,600 years of city construction. Nowadays, as a metropolis in the Yangtze River Delta region, Nanjing also plays a significant role in the Yangtze River economic belt and the eastern coastal economic belt.

Yihe historic conservation district is one of Nanjing's iconic historic spaces. Its history can be traced to "the city plan of Nanjing" of ROC(the Republic of China), which was planned by Henry Killam Murphy in 1929 and was China's first modern urban plan. At that time, this plan presented the zoning planning concept in line with international urban planning. According to the plan, Yihe Road was zoned as the first residential area, the superior residential area.



Figure 1 “The city plan of Nanjing”



Figure2 The plan of the superior residential area

(Source: "The city plan of nanjing ",1929)

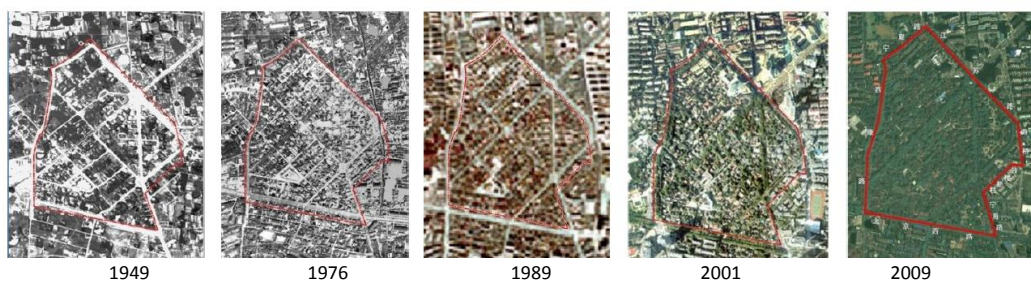


Figure 3 Maps of Yihe, spatial pattern is well served (Source: Drawn by project team)

Up to now, Yihe Road continues its use as residential area, and its spatial pattern has been well served. However, although "the features of ROC(the Republic of China)" and "historic conservation district" have become well-known "tags" of Yihe, public's perception of Yihe is still just a static piece of "urban memory". Its precious culture, historical heritage and unique identity have not been well utilized. In order to drive Yihe's vitality and enhance its social value, a revival plan of Yihe was conducted by Tongji urban planning & design institute in 2018, aiming at implementing three levels of revival work in the context of historic environment activation.

## 2. Culture Revitalization

According to the revival plan of Yihe, the first step to do was the revitalization of culture. Several cultural routes were planned and a series of cultural exhibitions would be settled to excavate and expand the cultural connotation of Yihe Road. Through the modern transformation of historical resources, the urban spirit was expected to reflect on a broader level.

### 2.1. Historical connotations and remains of Yihe

1920s was a period of transition when China began to transform from feudal society to democratic society. At that certain time, "the city plan of Nanjing" was a big innovation which represented the democratic will as well as the national confidence.

Up to now, within the scope of Yihe Road, there are 287 historic buildings, 225 ROC(the Republic of China) feature courtyards, 200 celebrities' former residences, 32 historic embassies sites and 2 sites of significant historical events. The number of embassies and the density of historic sites are at the top level among those historic conservation districts across the country.

Tab. 1 Historical remains of Yihe (Source: Collected by project team)

<i>Sum</i>	<ul style="list-style-type: none"> <li>• 35 hectares, 303 courtyards</li> <li>• 225 ROC(the Republic of China) feature courtyards, 74%</li> </ul>
<i>Cultural heritage sites</i>	<ul style="list-style-type: none"> <li>• 3 of Provincial level</li> <li>• 38 of city level</li> <li>• 11 of district level</li> <li>• 171 immovable historical relics</li> </ul>
<i>Celebrities' former residences</i>	<ul style="list-style-type: none"> <li>• 200 former residences of celebrities, 66%</li> <li>• 2 sites of significant historical events</li> <li>• 5 masterpieces</li> </ul>

<i>Embassies</i>	<ul style="list-style-type: none"> <li>• 24 embassies sites, 8%</li> <li>• 63 General's house, 21%</li> </ul>
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## 2.2. Current Influence and Popularity of Yihe

From the perspective of Nanjing, there are 750,000 related terms of Yihe on the Internet, ranking the ninth in the ROC(the Republic of China) related attractions. As the first one, the presidential palace has 18,600,000 related terms, 25 times that of Yihe.

Tab. 2 Internet related terms of the ROC related attractions in Nanjing

(Source: Collected by project team)

<b>Attractions</b>	<b>Related terms</b>
1. Presidential Palace	18,600,000
2. Zhongshan Mausoleum	13,700,000
3. Nanjing Museum	5,820,000
4. Jinling University (Nanjing University)	4,320,000
5. 1912 Bar Street	2,640,000
6. Meiyuan New Village	2,240,000
7. Central University (Southeast University)	1,890,000
8. Meiling Palace	1,640,000
9. Yihe Road	752,000
10. Jinling Women's University (Nanjing Normal University)	664,000

From the perspective of China, the related terms of Yihe is less than 1/10 of Tianjin Fifth Avenue and Qingdao Badaguan. Compared to similar historic districts, the popularity of Yihe is quite low. Its culture value has not been effectively promoted and its influence are far away from it deserves.

Tab. 3 Internet related terms of similar historical districts in China

(Source: Collected by project team)

<b>Key word</b>	<b>City</b>	<b>Related urban plan</b>	<b>Time</b>	<b>Related terms</b>
Fifth Avenue	Tianjin	"Material Construction Project for Tianjin Special Municipality city"	1930	14,700,000
Badaguan	Qingdao	"qingdao city plan"	1933	8,560,000
Yihe Road	Nanjing	"the city plan of Nanjing"	1929	752,000
Jiangwan ROC Buildings	Shanghai	"Great Shanghai Plan"	1929	505,000

### 2.3. Strategies of culture revival

As the only mega city in the Yangtze River Delta, Nanjing needs to perform as an innovative source, an open portals and an important strategic pivot in the Yangtze River Delta urban group. It needs Yihe to form Nanjing's culture brand, build its city image and improve its city position. Therefore, just focus on the ROC(the Republic of China) culture is not enough, the revival of Yihe should be considered on a broader view.

#### (1) Building a culture scene shared by both hosts and guests

It is believed that the retention rate of the original residents is an important criterion for judging the authenticity of historic blocks. At present, the population retention rate of historic blocks in China is around 60%. Based on the situation of Yihe, the revival plan decided to retain 60% of the courtyards as residential places , and to open 40% of the courtyards to the public. Which means, this plan will not only serve the open part of the future, but also serve the existing living places, building a cultural scene shared by both hosts and guests.

Tab.4 Population composition of Historic District in China

(Source: "The Study on Some Issues Related to the Conservation and Planning for the Historic Streets and Areas in China")

<i>Historical district</i>	<i>Original population</i>	<i>Planning population</i>	<i>Retention rate (%)</i>
<i>East Liuli Factory Area, Beijing</i>	3553	2092	62.39
<i>East Liuli Factory West Street, Beijing</i>	2290	1370	59.83
<i>Fuchengmen Inner Street, Beijing</i>	9360	8200	87.61
<i>Nanchizi Area, Beijing</i>	9200	6900	75.00
<i>Beichizi Area, Beijing</i>	8531	5577	65.37
<i>Xianyukou Area, Beijing</i>	23798	18488	77.69
<i>Nanchang Street, Beichang Street, Xihuamen Street, Beijing</i>	6486	4000	61.67
<i>Yue city, Shaoxing</i>	8823	7270	82.40
<i>Lu Xun Road, Shaoxing</i>	3571	2618	73.31
<i>Xixiaohe, Shaoxing</i>	4473	2600	58.13
<i>Dagu Ancient Town, Guilin</i>	5000	3000	60.00
<i>Ziyang Street, Ximen Street, Linhai</i>	8992	5800	64.50
<b>Average Value</b>	--	--	<b>63.58</b>

#### (2) Highlighting key resources

Through putting cultural resources such as cultural heritage sites, celebrities' former residences, embassies, historical events, etc. on the map, scoring each resource according to its value, we got a cultural resource heat map, which showed that high culture heat located in Yihe road, North of Ninghai Road, Beijing West Road - Tianzhu Road, and the key area of culture revival would be Yihe road and Ninghai Road.

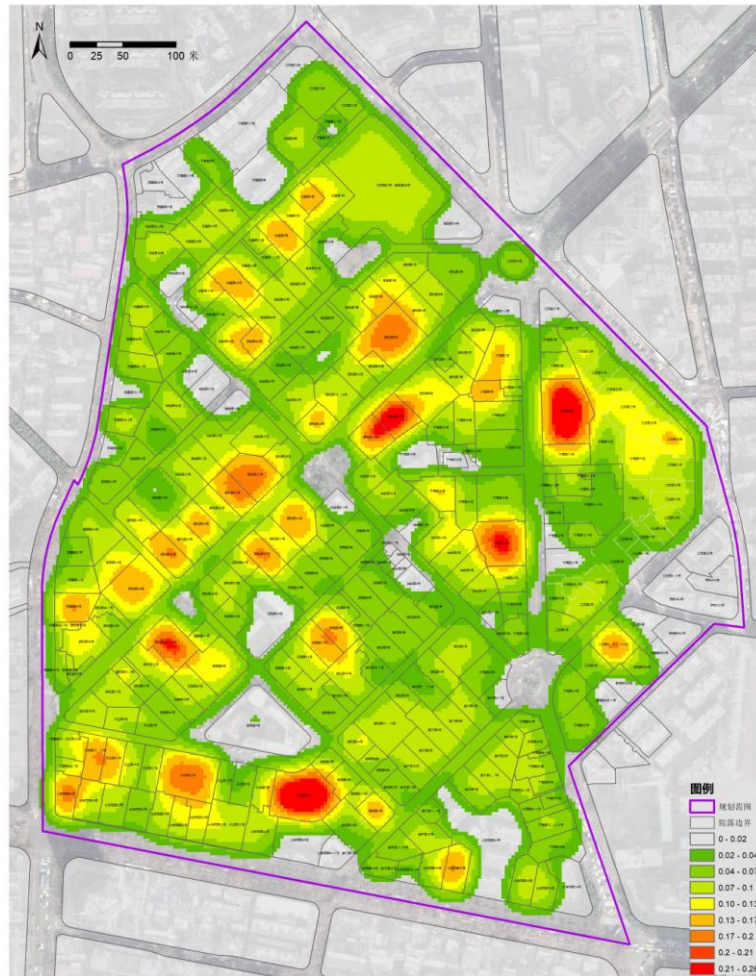


Figure 4 Map of cultural resource heat (Source: Drawn by project team)

Based on the culture heat map, several theme routes were designed according to the distribution of different cultural resource types, such as the series of celebrities' former residences, and the series of embassies, etc..

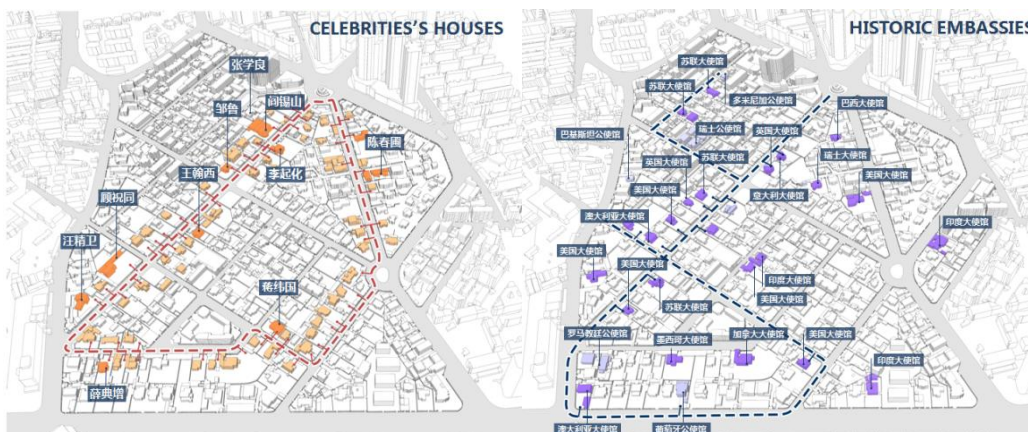


Figure 5 Route of celebrities' former residences

Figure 6 Route of embassies

(Source: Drawn by project team)

### (3) Injecting international elements

Through introducing international expert apartments, overseas expert studios, international organizations, international business offices, foreign affairs reception services, foreign affairs intermediary services, investment promotion services, etc., Yihe is planned as a "culture parlor" of Nanjing, helping to enhance Nanjing's international influence.

In conclusion, understanding and utilizing the cultural connotation of Yihe is the top priority work of the revival plan. Culture will define the direction of industry, as well as inject the soul into the material space.

## 3. Industry innovation

Based on a research on the present resources and regional competition situations of Yihe, an industry screening was conducted and the result turned out that art finance and international platform would be the ideal leading industries of Yihe. In addition, culture exhibitions, fashion recreation, residence and other ancillary services would perform as supporting industries, driving the activation of Yihe together.

### 3.1. Industrial orientation of cultural genes

According to the analysis of Yihe's culture connotation, we summarized Yihe's cultural genes into the ROC(the Republic of China) culture, architectural culture and historical culture.

The ROC(the Republic of China) culture contains east-west integration, cultural prosperity and social progress, its corresponding formats include international exchanges, cultural innovation, artistic creation, technological innovation, etc.; Architectural culture contains the display of the city plan, the form of the superior residential area, and the architectural feature. Its corresponding formats include planning display, residential facilities, architecture design, etc.; Historical culture are concentrated in a large number of celebrities' former residences, historical events, and historical embassies. Its formats orientation includes exhibitions, foreign affairs activities, international offices, etc..

Tab. 5 Formats orientation of cultural genes (Source: Summarized by project team)

<i>Cultural genes</i>		<i>Formats orientation</i>
<i>The ROC Culture</i>	<i>east-west integration</i>	<i>international exchanges</i>
	<i>cultural prosperity</i>	<i>cultural innovation, artistic creation</i>
	<i>social progress</i>	<i>technological innovation</i>
<i>Architectural Culture</i>	<i>"the city plan of Nanjing"</i>	<i>planning display</i>
	<i>the superior residential area</i>	<i>residential facilities</i>
	<i>architectural feature</i>	<i>architecture design</i>
<i>Historical Culture</i>	<i>celebrities' former residences</i>	<i>exhibitions</i>
	<i>historical events</i>	<i>patriotic education</i>
	<i>historical embassies</i>	<i>foreign affairs activities, international offices</i>

### 3.2. Industrial system

Relying on the characteristics analysis of Yihe, an industrial system was organized, focusing on the two leading industries and three supporting industries:

Tab. 6 Industrial system (Source: Summarized by project team)

Leading Industries	Art creativity	<i>Creative design, road show, experience consumption, auction transaction, art finance, fashion order, craftsman economy, digital culture, etc.</i>
	International exchange	<i>International Organization Headquarters, International Chamber of Commerce Association Office, Foreign Affairs Reception, Investment Promotion Service, International Business Service, etc.</i>
Supporting Industries	Culture Expo	<i>Architectural real museum, cultural exhibition exchange, student second class, cultural exhibition, graduation design exhibition, technology exhibition release, festival activities, award ceremony, etc.</i>
	Fashion recreation	<i>Immersive cultural tourism, slow living services, specialty businesses, creative dining, cultural entertainment, boutique hotel, B&amp;B, city walks, etc.</i>
	Residence and ancillary services	<i>Medical care services, health care, education and training, smart communities, international staff support (international community), etc.</i>

## 4. Space activation

After the industrial structure was determined, the next task to do was the activation of historical space. How to adapt and utilize these historical spaces was well considered through analyzing different space demand of different industries. By protecting the heritage ontology and activating the historic space, new connotations for these historical spaces would be created while the historic culture context would be inherited.

### 4.1. Space demands for different industries

#### (1) Space demands for art creation

Art creation includes Design office, Workshop, Art show, Art bank, etc.. They have low demands for street accessibility and have strong adaptability to different space types. Comfortable and interesting art space are easily to be build though connecting some small courtyards or transforming some old spaces .

Tab. 7 Space demands for art creation (Source: Summarized by project team)

<i>Formats</i>	<i>Scale types</i>	<i>Area demands (m<sup>2</sup>)</i>	<i>Building demands</i>	<i>Courtyard demands</i>	<i>Open space demands</i>	<i>Culture value demands</i>
<i>Design office</i>	<i>small</i>	<i>100-500</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>medium</i>

	<i>medium</i>	<i>above 500</i>	<i>Column-free space</i>	<i>Separate / multiple linked courtyards</i>	<i>Appropriate open space</i>	<i>medium</i>
<i>Workshop</i>	<i>Small-medium</i>	<i>200-500</i>	--	--	--	<i>medium</i>
<i>Art show</i>	<i>small</i>	<i>300-1000</i>	<i>Column-free space</i>	--	--	<i>medium</i>
	<i>medium</i>	<i>above 1000</i>	<i>Column-free space</i>	<i>Separate courtyard</i>	<i>Appropriate open space</i>	<i>medium</i>
<i>Art bank</i>	<i>Small-medium</i>	<i>above 1500</i>	<i>Column-free space</i>	--	--	<i>Low</i>
<i>Art auction</i>	<i>Small-medium</i>	<i>above 1000</i>	<i>Column-free space</i>	--	--	<i>Low</i>
<i>Art investment fund (office)</i>	<i>Small-medium</i>	<i>300-600</i>	--	<i>Separate / multiple linked courtyards</i>	--	<i>Low</i>
<i>Experience consumption</i>	<i>Small-medium</i>	<i>100-500</i>	--	<i>Separate / multiple linked courtyards</i>	--	<i>Low</i>
<i>Fashion order</i>	<i>Small-medium</i>	<i>300-800</i>	<i>Column-free space</i>	<i>Separate / multiple linked courtyards</i>	--	<i>Low</i>

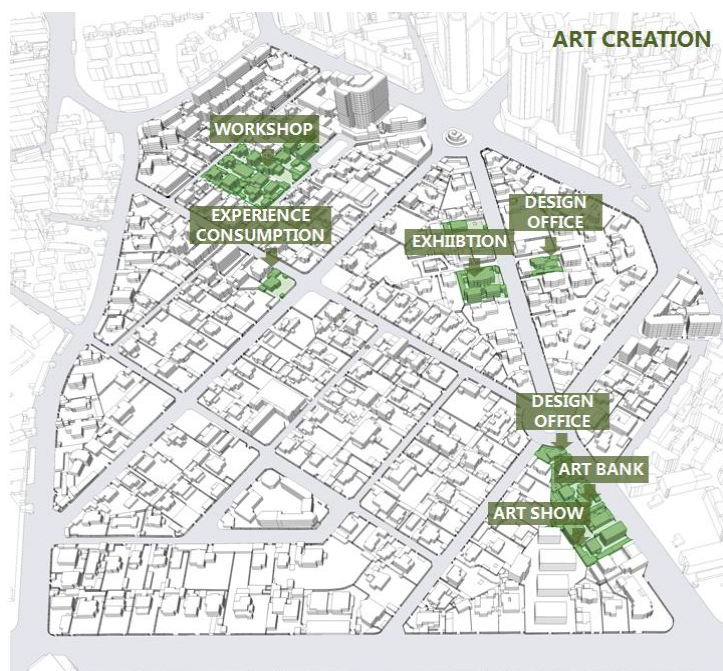


Figure 7 Distribution of art creations (Source: Drawn by project team)

## (2) Space demands for international exchange

International exchange includes international organization, international association office, reception service, intermediary service, etc.. They have low demands for culture value but often have strong needs of column-free indoor space or comfortable outdoor sites to hold different types of meetings.

Tab. 8 Space demands for international exchange (Source: Summarized by project team)

<i>Formats</i>	<i>Scale types</i>	<i>Area demands (<math>m^2</math>)</i>	<i>Building demands</i>	<i>Courtyard demands</i>	<i>Open space demands</i>	<i>Culture value demands</i>
International organization, international association office	small	200~1000	--	Separate / multiple linked courtyards	--	Low
	medium	above 1000	Column-free space	Separate / multiple linked courtyards	Appropriate open space	Low
International business office	small	200~1000	--	--	--	Low
	medium	above 1000	Column-free space	--	--	Low
Reception service	accommodation	above 5000	--	Separate / multiple linked courtyards	Appropriate open space	Low
	catering	200~2000	Column-free space	--	--	Low
Intermediary service	small	100~500	--	--	--	Low
	medium	500~2000	Column-free space	--	--	Low
Investment service	small	100~500	Column-free space	--	--	Low
	medium	above 500	Column-free space	--	Appropriate open space	Low



Figure 8 Distribution of international projects (Source: Drawn by project team)

**(3)Space demands for culture expo**

Culture expo includes museum, exhibition hall, etc.. Normally, high culture value places are their best choices. In addition, they also need column-free indoor space or enough outdoor space to hold exhibitions or ceremonies.

Tab. 9 Space demands for culture expo (Source: Summarized by project team)

<i>Formats</i>	<i>Scale types</i>	<i>Area demands (<math>m^2</math>)</i>	<i>Building demands</i>	<i>Courtyard demands</i>	<i>Open space demands</i>	<i>Culture value demands</i>
<i>Museum, exhibition hall</i>	<i>Small-medium</i>	<i>above 1000</i>	<i>Column-free space</i>	--	<i>60%</i>	<i>high</i>
<i>Memorial Hall, celebrities' former residences</i>	<i>small</i>	<i>300~1000</i>	--	--	--	<i>high</i>
	<i>medium</i>	<i>above 1000</i>	--	<i>Separate / multiple linked courtyards</i>	--	<i>high</i>
<i>Gallery, art sales show</i>	<i>small</i>	<i>100~800</i>	--	--	--	<i>medium</i>
	<i>medium</i>	<i>above 800</i>	<i>Column-free space</i>	<i>Separate / multiple linked courtyards</i>	--	<i>medium</i>
<i>Technology Product Release Show</i>	<i>Small-medium</i>	<i>above 1000</i>	<i>Column-free space</i>	<i>Separate / multiple linked courtyards</i>	--	<i>Low</i>
<i>International Arts Festival, Awards Ceremony</i>	<i>Small-medium</i>	<i>above 2000</i>	<i>Column-free space</i>	<i>Multiple linked courtyards</i>	<i>70%</i>	<i>medium</i>
<i>Art investment, road show</i>	<i>Small-medium</i>	<i>above 1000</i>	<i>Column-free space</i>	--	--	<i>Low</i>
<i>Patriotism education</i>	<i>Small-medium</i>	<i>above 1000</i>	<i>Column-free space</i>	<i>Multiple linked courtyards</i>	<i>60%</i>	<i>high</i>

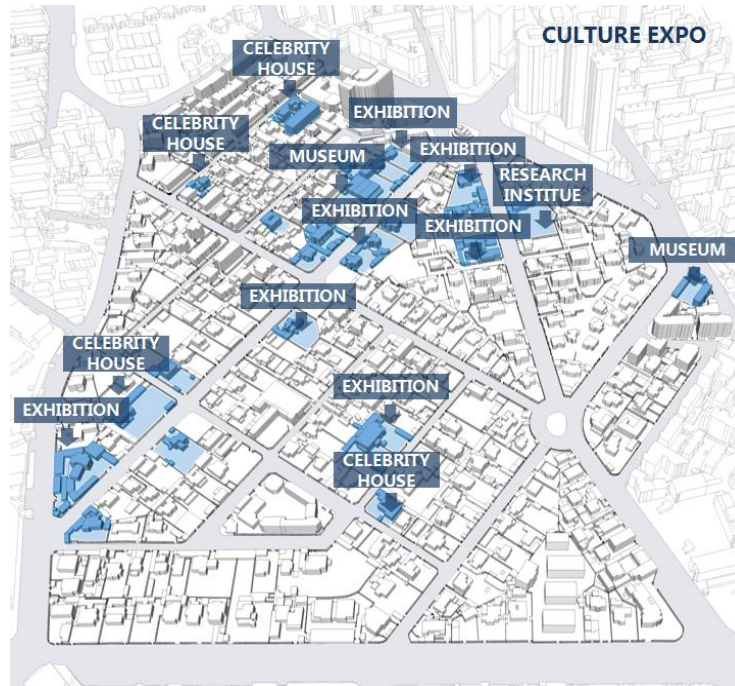


Figure 9 Distribution of culture expo (Source: Drawn by project team)

#### (4)Space demands for experiential consumption

Experiential consumption contains leisure Shopping, creative dining, boutique hotel, Cafe, etc..They prefer to locate near offices, museums and other public facilities and usually they have higher demands of space quality.

Tab. 10 Space demands for experiential consumption (Source: Summarized by project team)

<i>Formats</i>	<i>Scale types</i>	<i>Area demands (m<sup>2</sup>)</i>	<i>Building demands</i>	<i>Courtyard demands</i>	<i>Open space demands</i>	<i>Culture value demands</i>
<i>Experience, Leisure Shopping</i>	<i>Small</i>	<i>50-100</i>	--	--	--	<i>Low</i>
	<i>medium</i>	<i>above 100</i>	<i>Column-free space</i>	--	--	<i>Low</i>
<i>Creative dining</i>	<i>Small</i>	<i>50-100</i>	--	--	--	<i>Low</i>
	<i>medium</i>	<i>100-200</i>	--	--	<i>Appropriate open space</i>	<i>Low</i>
<i>Cultural entertainment (cafe, winery, etc.)</i>	<i>Small</i>	<i>50-100</i>	--	--	--	<i>Low</i>
	<i>medium</i>	<i>above 100</i>	--	--	<i>Appropriate open space</i>	<i>Low</i>
<i>Boutique Hotel</i>	<i>Small-medium</i>	<i>300~2000</i>	--	<i>Separate / multiple linked courtyards</i>	<i>Appropriate open space</i>	<i>Low</i>
<i>Tourist Service Center</i>	<i>Small-medium</i>	<i>above 150</i>	<i>Column-free space</i>	--	<i>Appropriate open space</i>	<i>medium</i>

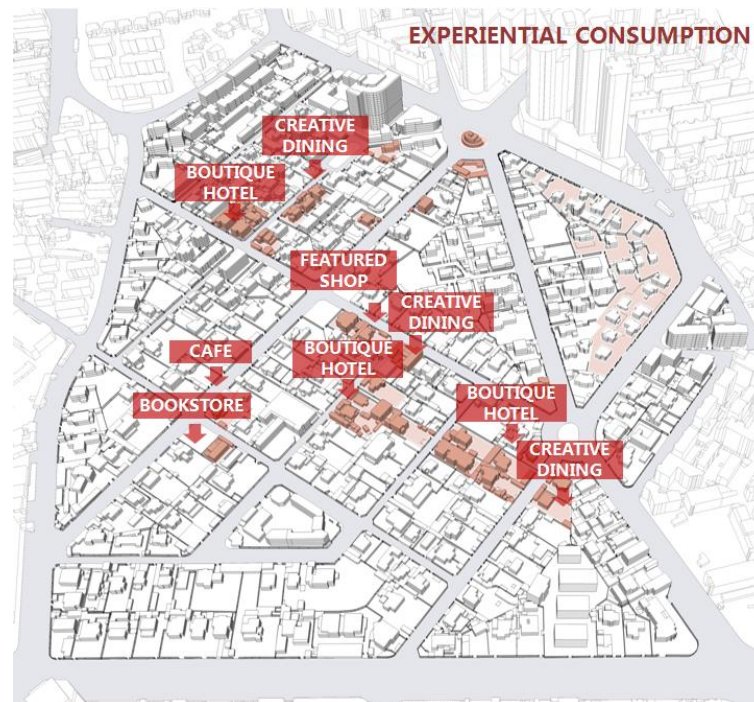


Figure 10 Distribution of experiential consumption (Source: Drawn by project team)

#### (5) Space demands for residential support services

Residential support services includes medical centre, community service, etc..Their location should be convenient for residents. And they also need column-free indoor space to guarantee the organization of community activities.

Tab. 11 Space demands for residential support services(Source: Summarized by project team)

<i>Formats</i>	<i>Scale types</i>	<i>Area demands (m<sup>2</sup>)</i>	<i>Building demands</i>	<i>Courtyard demands</i>	<i>Open space demands</i>	<i>Culture value demands</i>
<i>Medical center</i>	—	<i>above 3000</i>	<i>Column-free space</i>	<i>Separate / multiple linked courtyards</i>	--	<i>Low</i>
<i>Smart Street Management Center</i>	—	<i>above 1000</i>	<i>Column-free space</i>	<i>Separate / multiple linked courtyards</i>	--	<i>Low</i>
<i>International Community</i>	—	<i>100~500</i>	--	--	<i>Appropriate open space</i>	<i>Low</i>

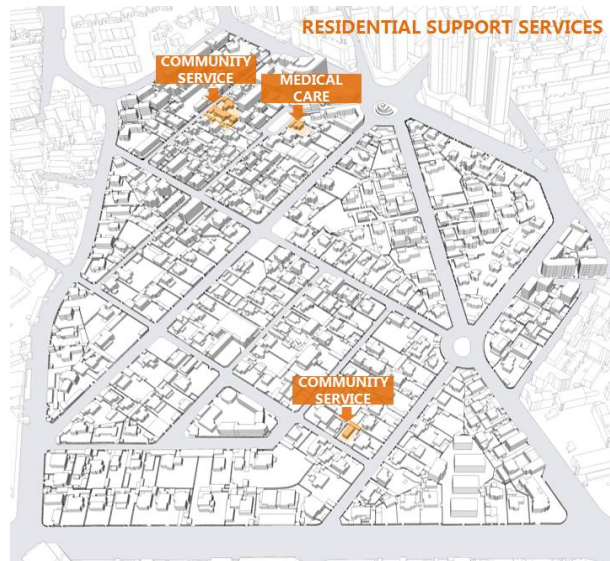


Figure 11 Distribution of residential support services (Source: Drawn by project team)

After all the formats were settled, the plan of public courtyards distribution appeared. 117 public courtyards, 40% of all the units, that meet the criteria of retaining 60% original residents, guaranteeing the authenticity of this historic district. Most public courtyards located along the regional representative road, such as Yihe Road and Ninghai Road, in order to attractive pedestrians, improve appearance, as well as drive the vitality of the region.



Figure 12 Distribution of public courtyards (Source: Drawn by project team)

#### 4.2. Strategies for space activation

At present, the street interfaces in Yihe district are mostly closed to public. With great privacy and small publicity, each courtyard has its own entrance, a large number of historic resources are enclosed in these courtyards.



Figure 13 Closed street interface (Source: Drawn by project team)

Therefore, we proposed a concept called “intra-wall economy”. On the basis of retaining the interface along the street wall, we planned to remove partial partition wall between two adjacent yards, connect the open space of several courtyard, and then shape the "inner street". As a result, the shared space will be created through the expansion of node space, historical resources will be open to public, together they will drive the “intra-wall economy” and bring vitality to this region.

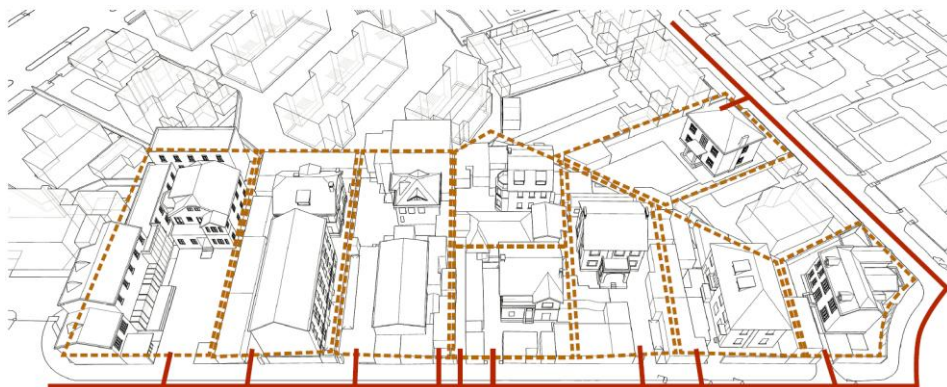


Figure 14 Closed courtyard at present (Source: Drawn by project team)

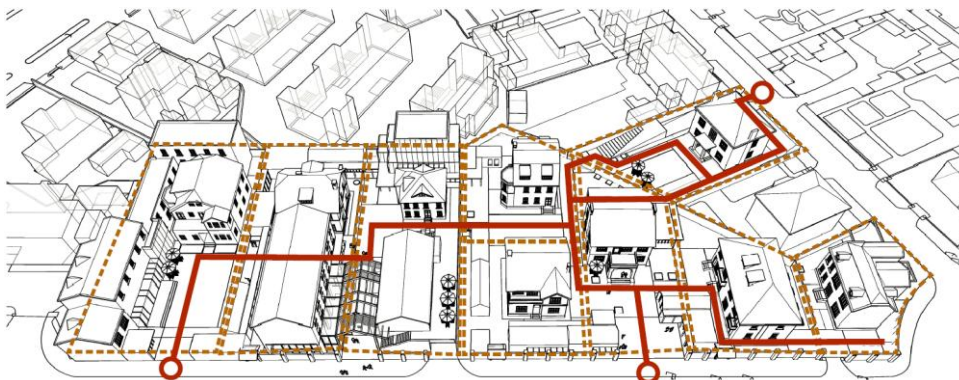


Figure 15 Inner street in the future (Source: Drawn by project team)



Figure 16 Vibrant intra-wall economy with vitality (Source: Drawn by project team)

## 5. Conclusion

As the demands for urban renewal in metropolis are growing rapidly, revitalization planning becomes one of the most important types of planning at present. Urban revitalization often involves the conservation and the utilization of historical elements, as well as the alignment of new formats and historical spaces. This paper combs different space requirements of different industries and generalizes several strategies of historical space activation, hoping to provide certain reference for other similar situations.

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