



2020 ISOCARP AWARD FOR EXCELLENCE

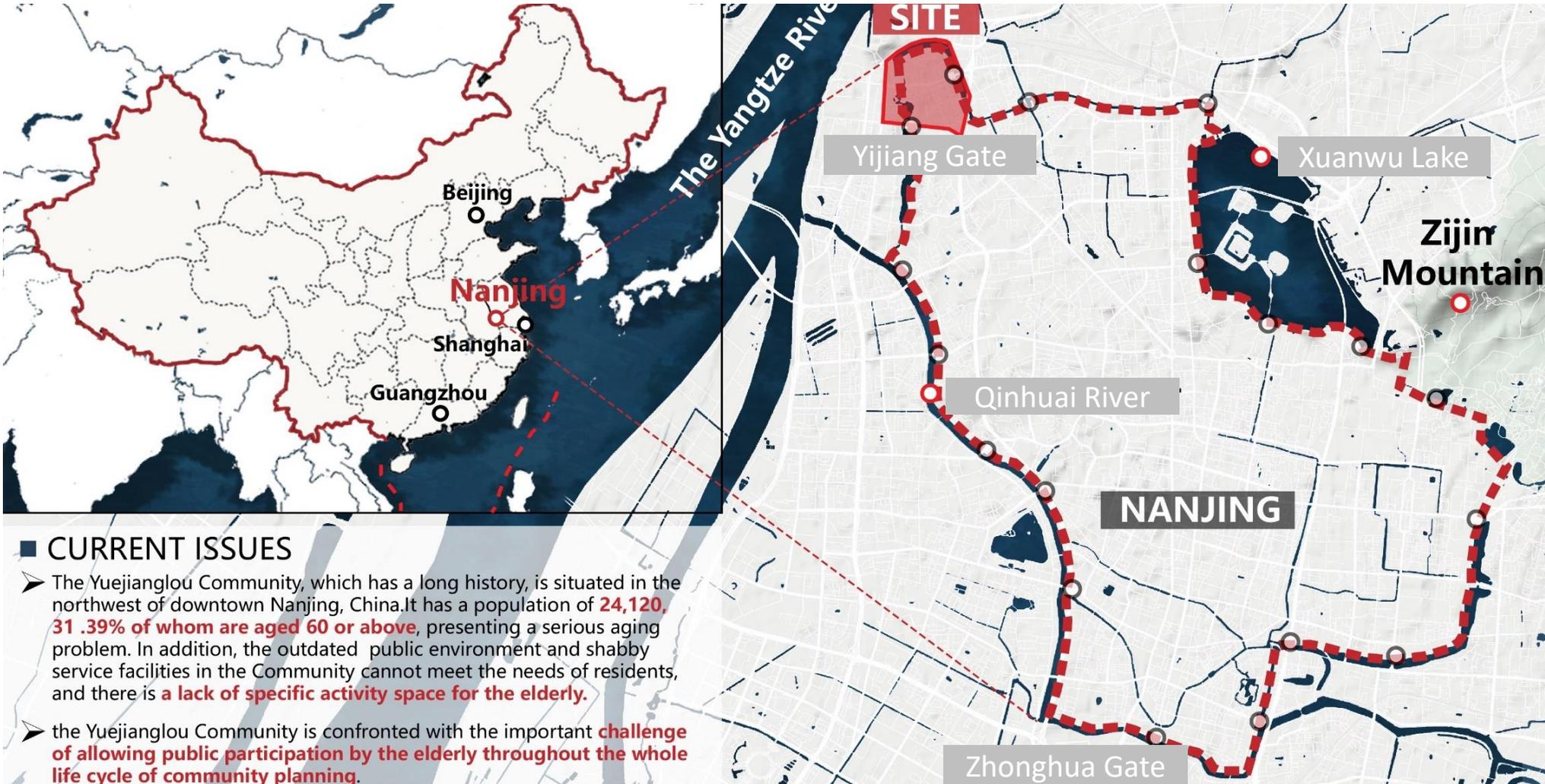
Grand Award

Public Participation in Nanjing Yuejianglou Community Planning —Supported by Digital Technology

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CONTENT AND CONTEXT OF THE PROJECT

The Yuejianglou Community, which has a long history, is situated in the northwest of downtown Nanjing, China, and faces the bank of the Yangtze River in the west. Yuejianglou, one of the ten renowned cultural towers in China, is located in the Community. The Community has a total planning area of about 118 hectares.



CONTENT AND CONTEXT OF THE PROJECT

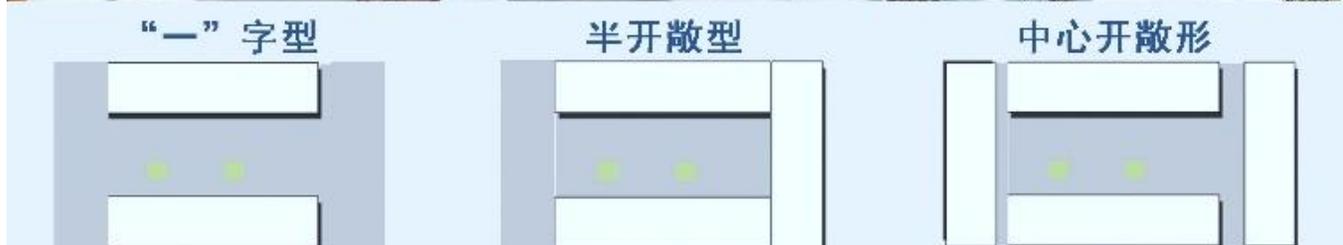
Compared with neighboring residential communities, the Community, where there are 151 courtyards, is uniquely featured by its residents, who are acquainted with each other and maintain close neighborhood relations. The Yuejianglou Community has a population of 24,120, 31.39% of whom are aged 60 or above, presenting a serious aging problem.



“T”字形
 单侧临街，其局部因历史原因封闭了与其
 他区域联系，造成空间浪费及自我封闭

“U”字形
 建筑围合空间内有停车棚的存在，造成生
 活通行、停车等空间狭小

鱼骨型
 此类空间变化丰富，绿化长势良好，为景
 观改造提供了良好条件



“一”字形
 空间组织较为简单，交通可达性良好，与
 周边联系密切

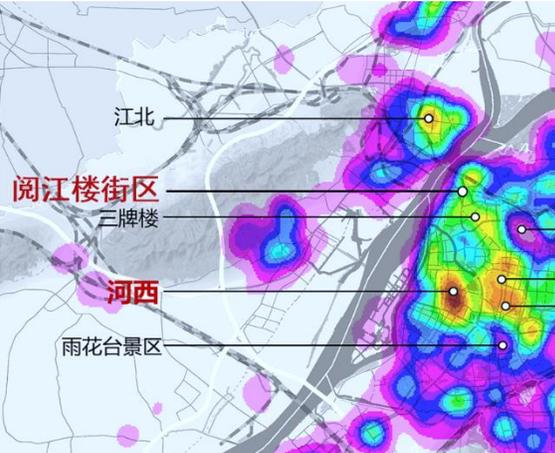
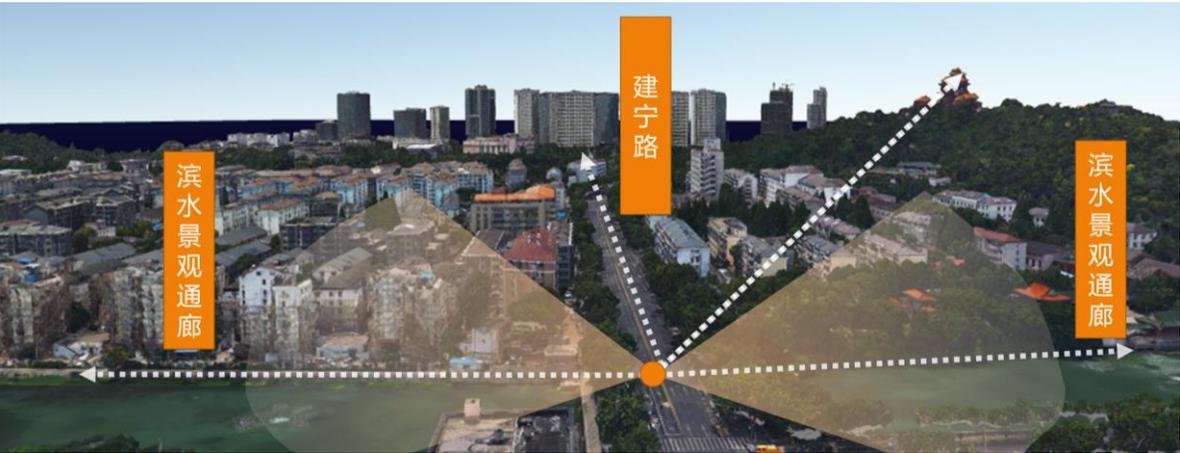
半开敞型
 单侧临街空间由建筑或围墙三面围合，相
 对独立，场所感强

中心开敞形
 空间由住宅围合，庭院场所感强烈。受外
 部干扰较少



CONTENT AND CONTEXT OF THE PROJECT

The development and support of digital technology has made public participation in the whole life cycle of community planning possible.

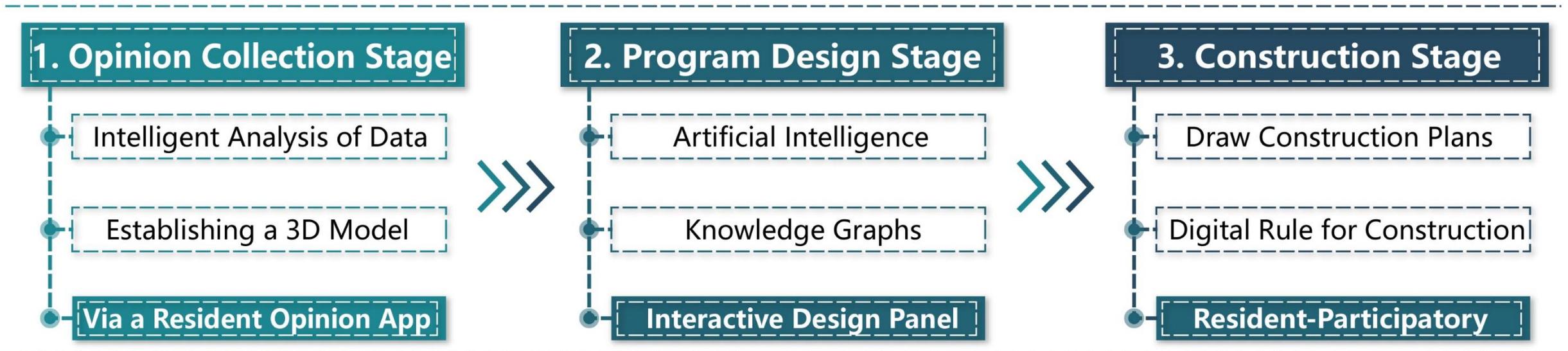


MAIN FEATURES OF THE PROJECT

How to effectively solicit and reasonably choose among the varying opinions of the elderly on space improvement in the Community? How to drive the enthusiasm of the elderly to directly participate in community planning and design, and even subsequent construction?

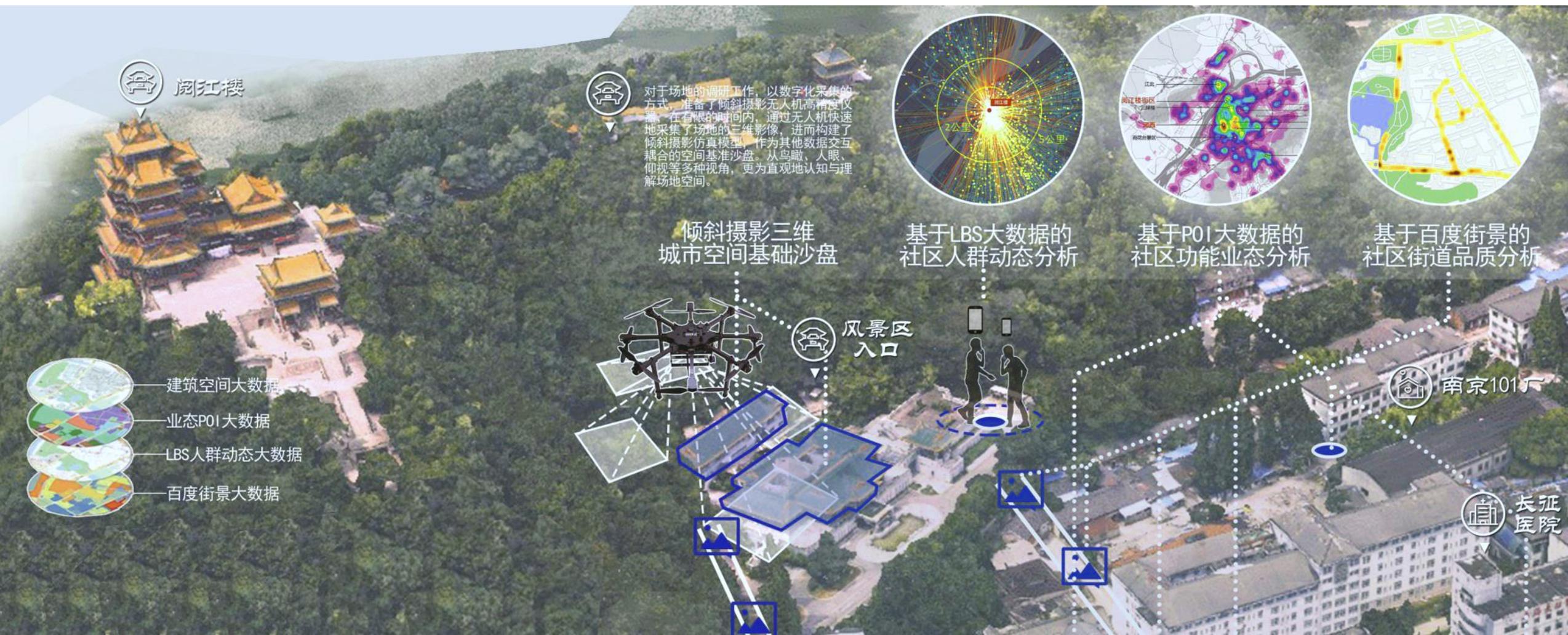
To drive the enthusiasm of the elderly to directly participate in the community's planning and design, this project established a resident interactive design panel using digital technologies, such as knowledge graphs and artificial intelligence, thereby enabling residents to directly select designs from a simple and intuitive model library and generate their image schemes accordingly.

To address the problem of it being difficult for the elderly to participate in the subsequent construction after scheme design, this project established a resident-participatory construction mechanism using digital technologies such as the three-dimensional urban knowledge graph database.



MAIN FEATURES OF THE PROJECT

To effectively solicit and reasonably choose among the varied opinions of the elderly on space improvement in the Community, this project designed a Resident Opinion App, including a “spatial base layer—opinion-filling layer—preference-analysis layer,” using digital technology such as intelligent analysis of multi-source big data.



MAIN FEATURES OF THE PROJECT

First, the combined big and small data on buildings, roads, mountains, water systems, etc. in the Yuejianglou Community taken by oblique photography were used as a basis for establishing a three-dimensional space model of the Community.

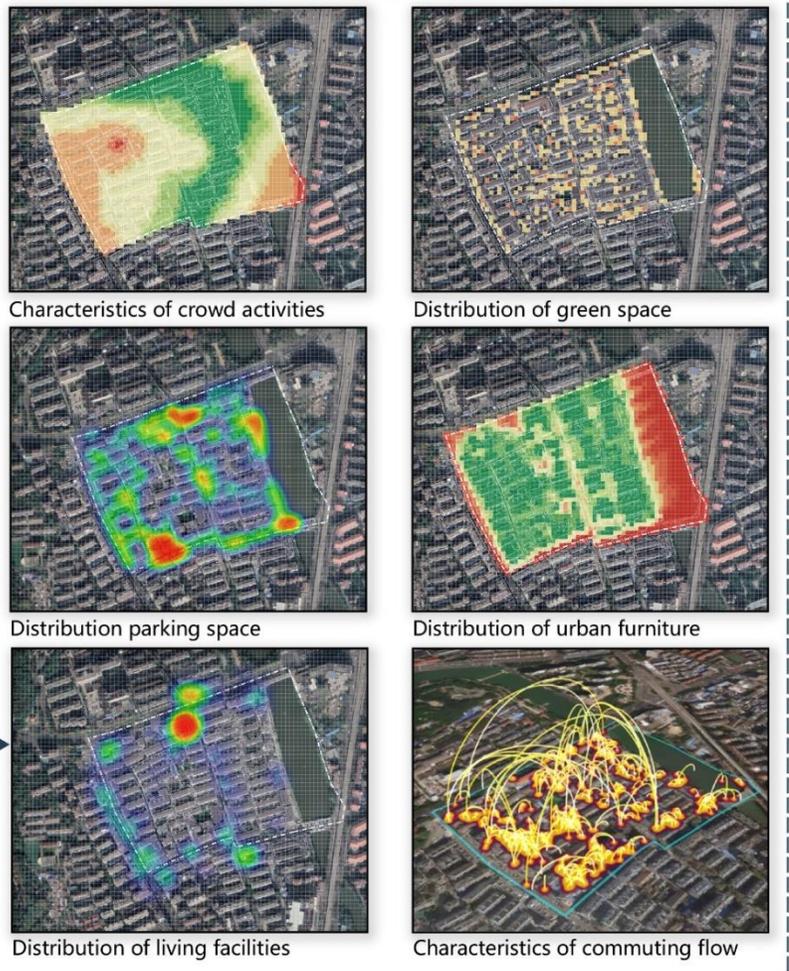


EXPECTATIONS AND FUTURE PROJECTS

On the basis of the spatial base layer, the Resident Opinion App was established to form the opinion-filling layer. With the help of digital public participation technology, local residents could target different problems on the platform's map, such as their favorite scenic spots as well as the dirtiest and most messy places.

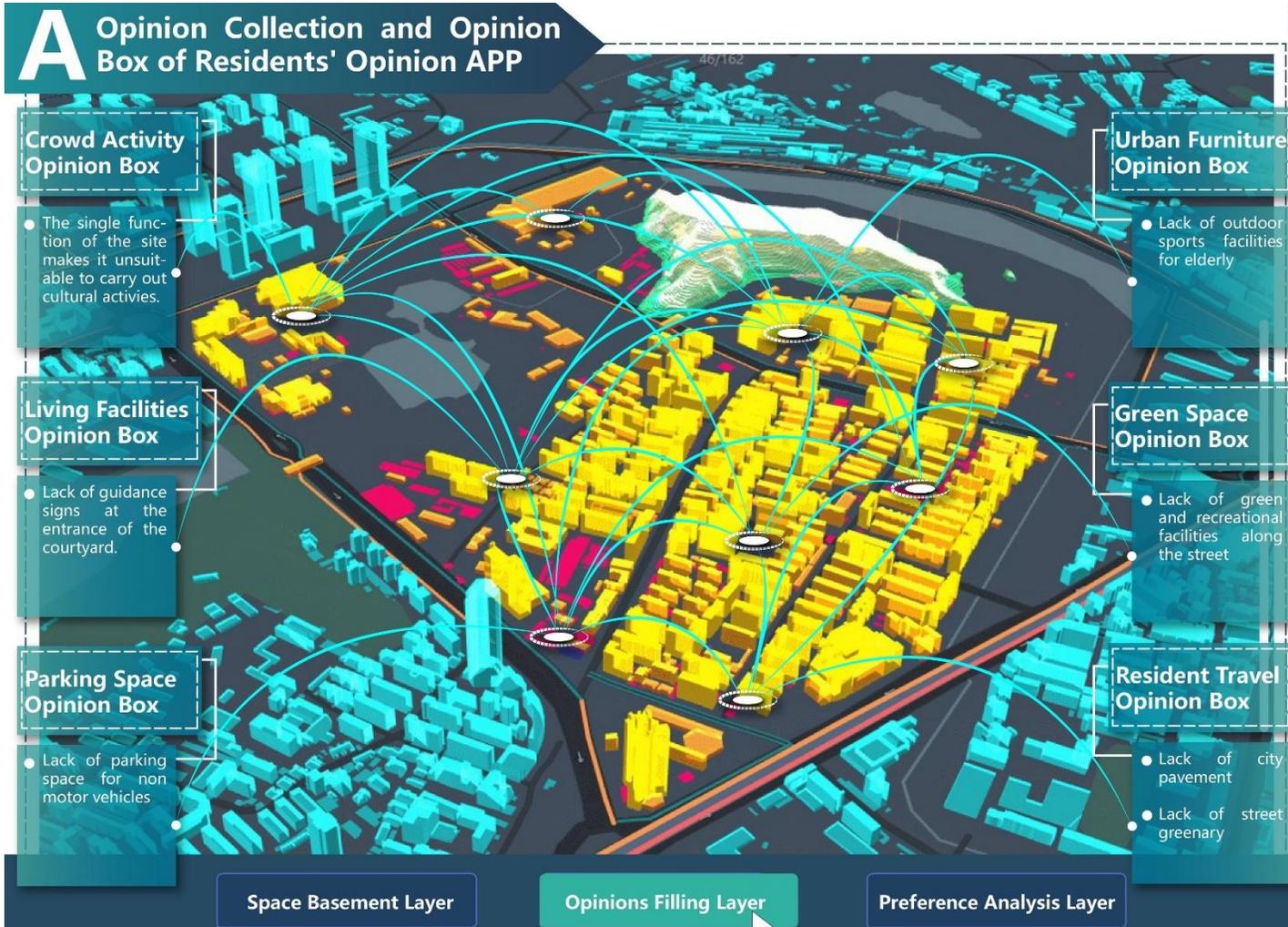
■ Via Resident Opinion APP

In this project, we collected 6000 opinions from 830 residents through the residents' opinion app we designed. We use this information to analyze the feedback of residents.



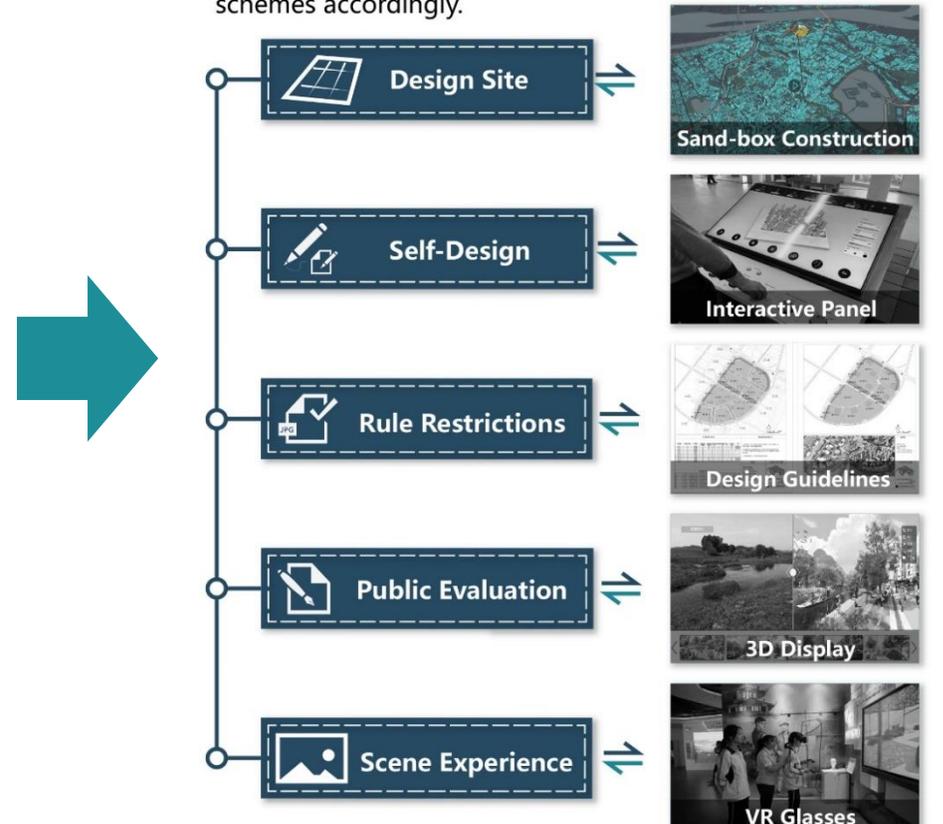
EXPECTATIONS AND FUTURE PROJECTS

On the basis of the opinion-filling layer, the App intelligently analyzed residents' opinions to form the preference-analysis layer. Residents' preference opinions were collected to create a story map that allowed effective sorting and classification of huge numbers of opinions as well as a presentation targeted to the public participants of community planning.



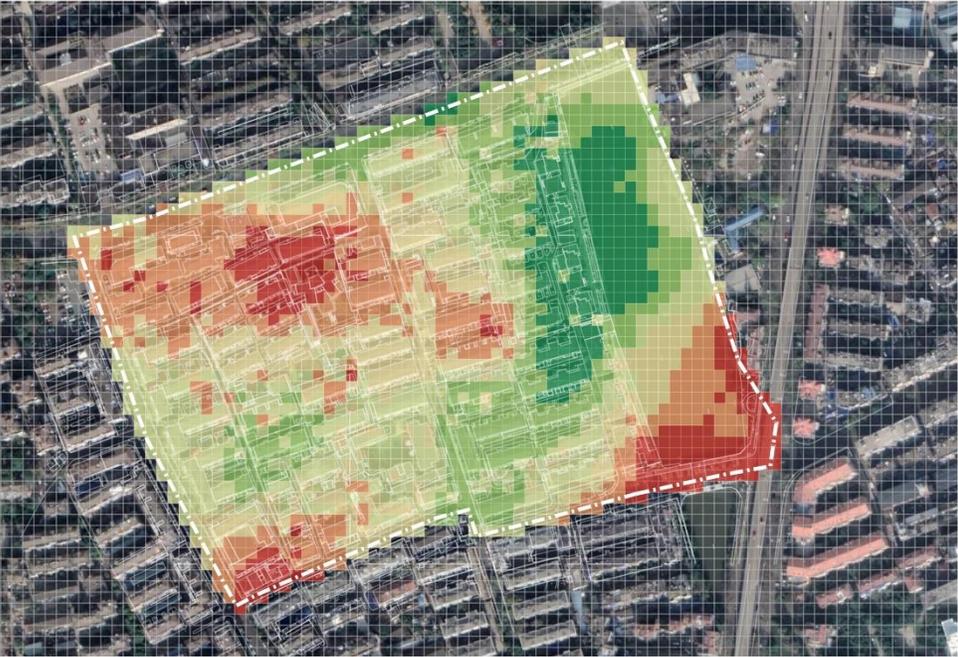
Interactive Design Panel

This project established a resident interactive design panel, thereby enabling residents to directly select designs from a simple and intuitive model library and generate their image schemes accordingly.



EXPECTATIONS AND FUTURE PROJECTS

With the multi-source big data of the Community, the App conducted real-time data analysis of residents' opinions and presented patterns of life, such as residents' activity, vegetation and green space, and parking space characteristics.



Heat Map at 7:00 am
早上7点热力图



Heat Map at 3:00 pm
下午3点热力图



Heat Map at 8:00 pm
晚上8点热力图



EXPECTATIONS AND FUTURE PROJECTS

First, a sandbox was built in the area to be designed, and a three-dimensional urban knowledge graph was established to form the design interaction panel, where residents could conduct simple and free design. Through three-dimensional holographic projection and virtual reality (VR) glasses, residents could intuitively experience their design schemes.

■ Provide Residents with Adjustable 3d Models



Workshop	Museum	Kindergarten	Commercial Complex	Museum	Business Building
Primary School	Gallery	Residential Building	Parking Lot	Bus Stop	Business Building
Middle School	Library	Primary School	High-rise Residential Building	High-rise Hotel	Financial Office Building
Square	Hospital	Residential Building	High-rise Residential Building	High-rise Hotel	Financial Office Building



B Community Courtyard Designed by Residents Themselves

Scoring

- Current situation evaluation
- Traffic convenience
- Facility richness
- Street safety
- Space attraction
- Green ratio
- Parking space

Comparison results

- Amplify
- Narrow
- Select
- Search
- 2D/3D



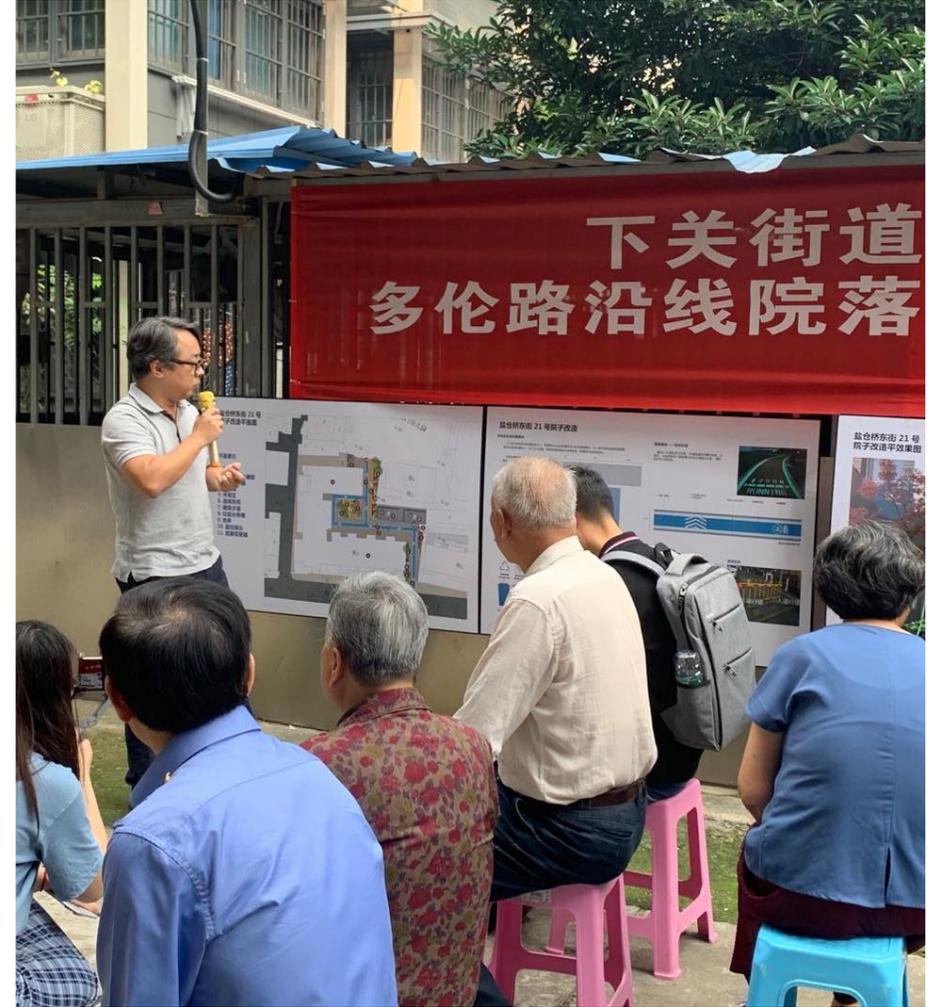
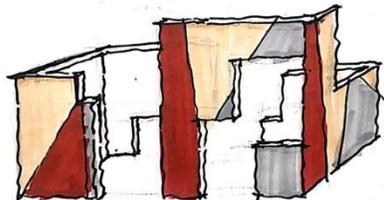
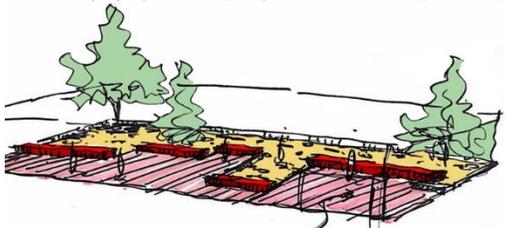
Story Map

Self-Design

Design Experience

EXPECTATIONS AND FUTURE PROJECTS

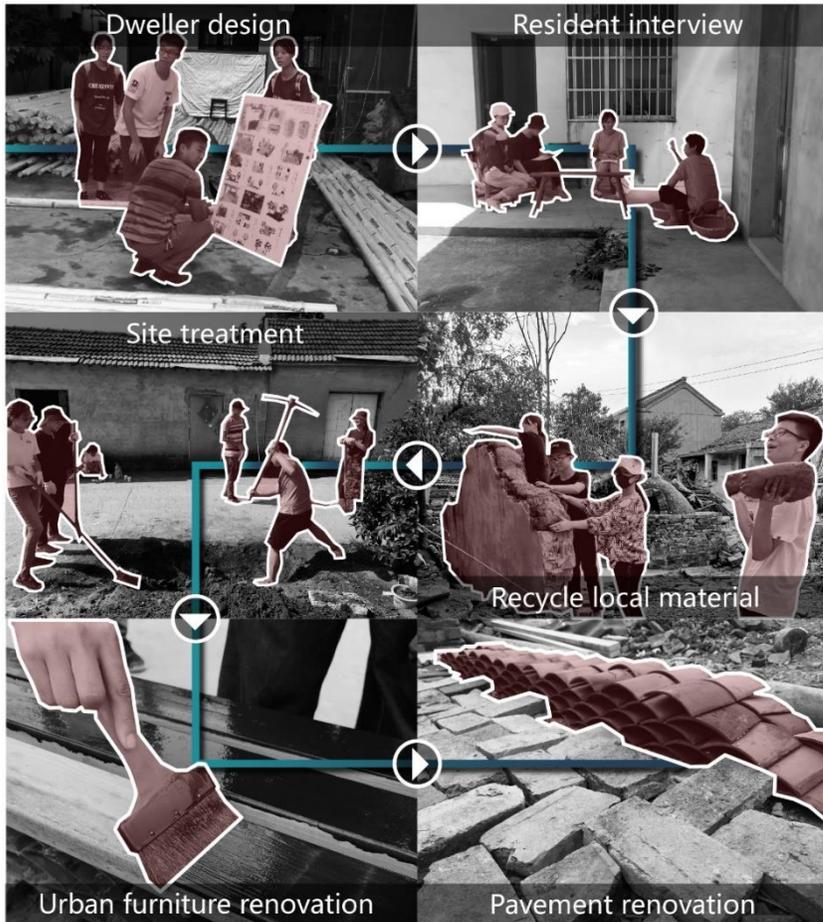
Among the 151 courtyards in the Yuejianglou Community, for example, sandboxes were built for the 24 courtyards selected through the App, allowing residents to independently design their own courtyards. On the interactive panel, residents could choose the elements they wanted to keep in their courtyards, such as vegetation and oddments



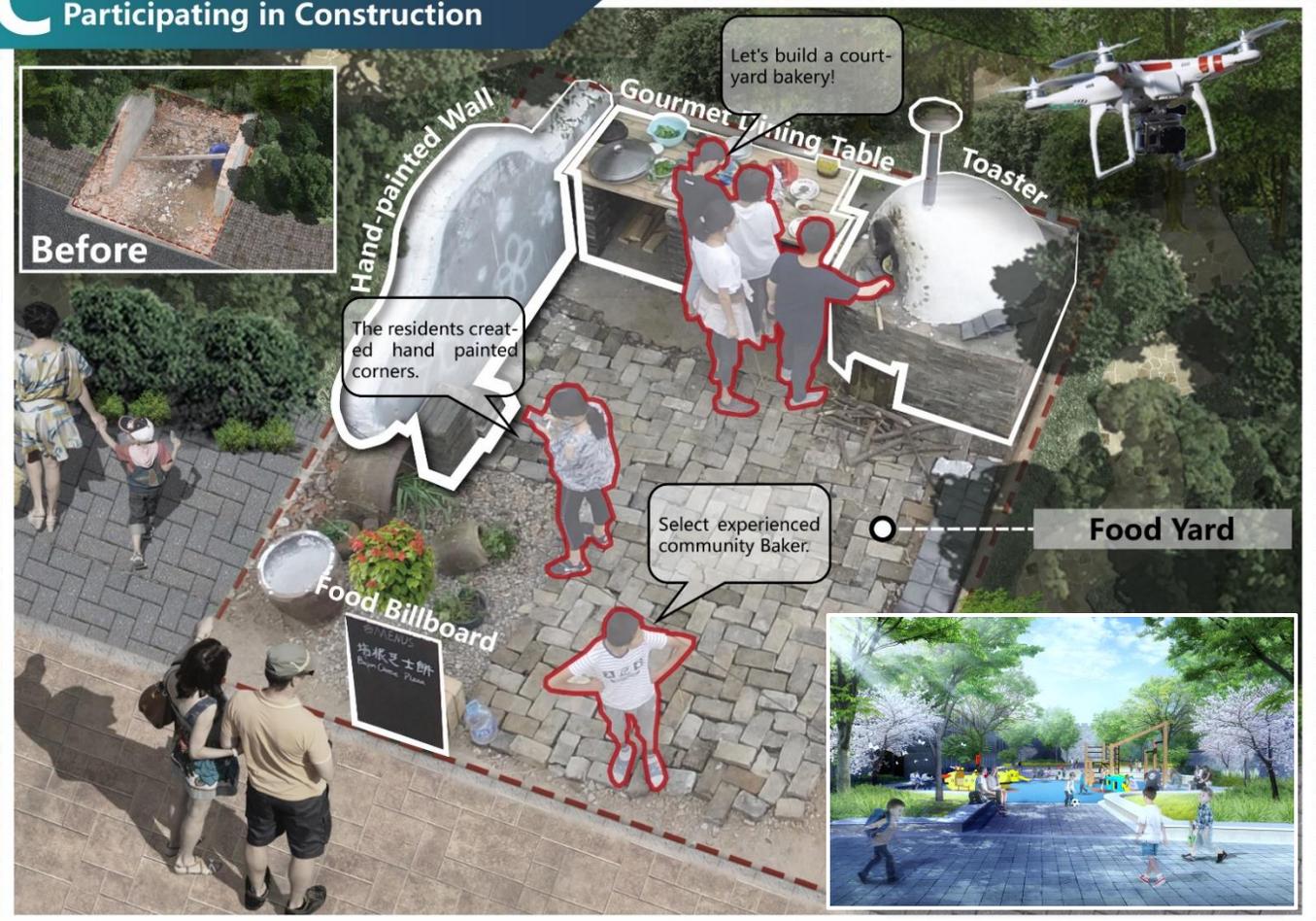
EXPECTATIONS AND FUTURE PROJECTS

Residents could directly draw construction plans for the courtyard schemes they had designed in the previous stage. This established a connection between residents' design and construction. For example, After construction, the residents selected experienced community bakers and made bread together, thereby creating a good community atmosphere.

Residents Participate During the Construction Process



Food courtyard Built by Residents Participating in Construction



EXPECTATIONS AND FUTURE PROJECTS

With the help of the digital rule base for construction, residents could also choose construction materials according to local conditions, or use existing construction materials, or utilize domestic waste as construction materials, making the construction process closer to daily life.



1. 现状问题



1. 设施老化
2. 缺乏文化元素
3. 场地环境郁闭

2. 改造策略

1. 将靠近新民门北侧的空间利用，打造成为区域内集文化宣传、历史记忆等为一体的文化景观节点
2. 将原有绿化往南2M，打开景观空间。
3. 将绿化、地铺、花坛、围墙门洞等出新，增加休闲、展示空间，将阅江楼片区历史，老小区变迁中的老物件在此展示。



CONCLUSIONS

Three phases of participation were carried out via smart technologies: a resident opinion app, an interactive design panel for programme design that included VR visualisation, and a platform facilitating participatory construction. While the reality of public participation is often one-dimensional, this approach achieved true interactive and iterative planning and design processes, and collaborative and meaningful implementation.

