

The Problem of Xiaolingwei Street

1. Garbage and Oil

Set up at 4:00p.m and 10:00p.m.

70+ stalls

a hundred stores

Restaurants, women's clothing, nail salon, gym, supermarket, hotel...

Oil !!

Oil Contamination

A large number of food stalls at night, leaving a lot of oil on the ground all the years.

88%

Percentage of all eatery types.

a mass of garbage

The amount of waste generated per day.

Inappropriate location of refuse disposal station

A garbage transfer station is set up in the traffic island. Although it is surrounded by trees and walls, has poor landscaping, and gives off unpleasant smells.

garbage-disposal sites

garbage truck

2. Deserted Commercial Complex

Two adjacent universities, excellent location but abandoned.

The commercial body of Jouyue Square, has a very low utilization rate. Only one chess and card room, a few snacks on the first floor. The environment is poor, mainly receive take-out orders, low-end food.

- inconvenient transportation
- The impact of the coronavirus lockdown
- positioning planning is not reasonable

In fact, there have been a lot of changes in the shop, none of them last long.

After the outbreak of COVID-19...

Why are there only a few ordinary restaurants here?

Inconvenient traffic in PaiLou dormitory.

Bus frequency is less. During the morning rush hour, the school bus is often full, sometime the students have to take a taxi to the school, which spent a lot.

It takes more time by bus than by taxi.

15-20 minutes

A six-stop bus ride can save 15-20 minutes by taxi.

Zebra crossing setting does not meet the "Wish Line".

people do not walk at the zebra crossing, people like to walk straight across the road.

3. Chaotic Traffic

Traffic lights are too short and cause traffic jams.

38 second traffic light

A dozen of Non-motor vehicle

Three/four cars

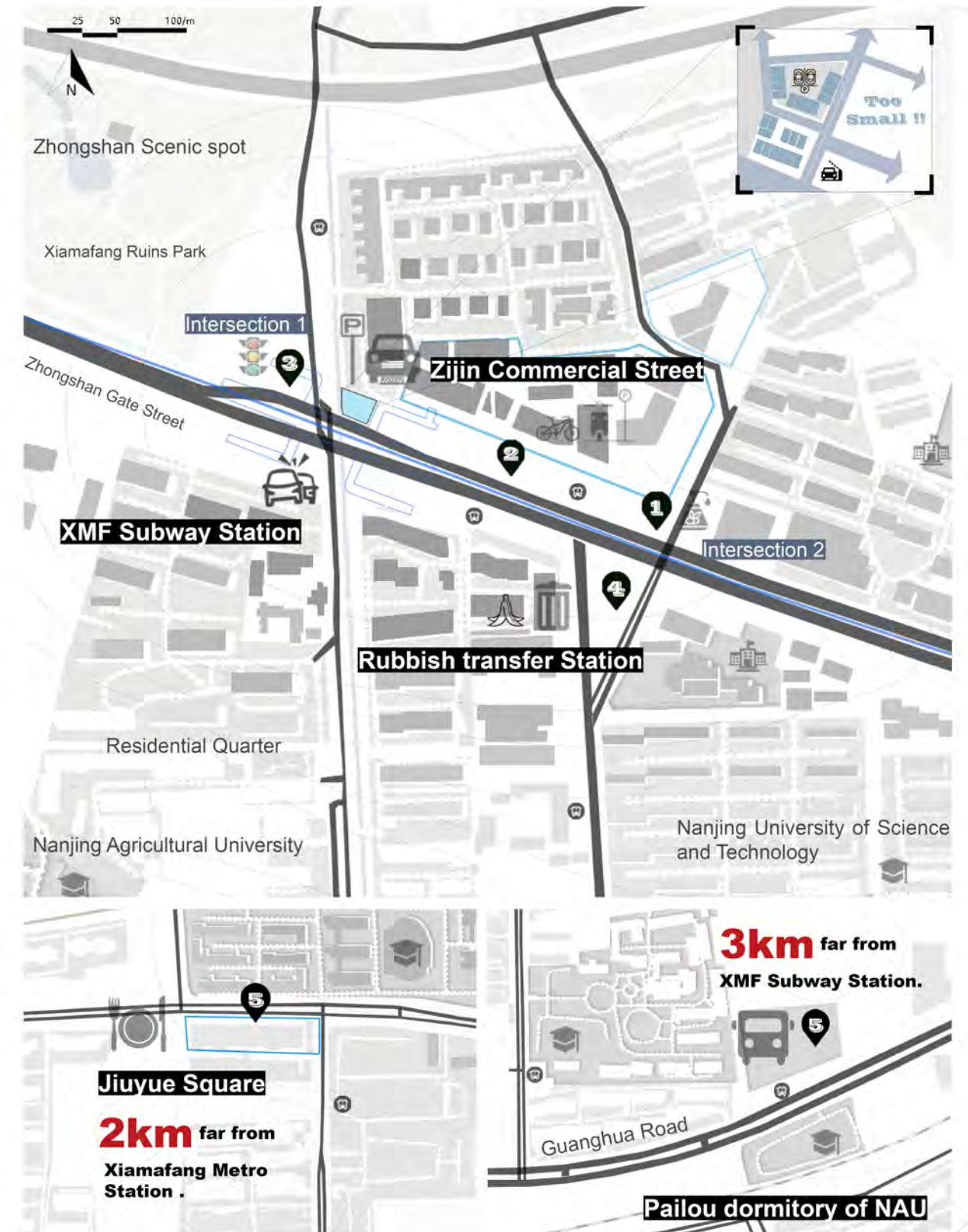
Cause the vehicle can not pass in time, blocked in the intersection 1.

Insufficient parking space and parking confusion.

1. Too many non-motor vehicles are parked on pedestrian Spaces, blind paths and lawns.

2. The car park was too small so some parked on the sidewalk.

'Wish line'

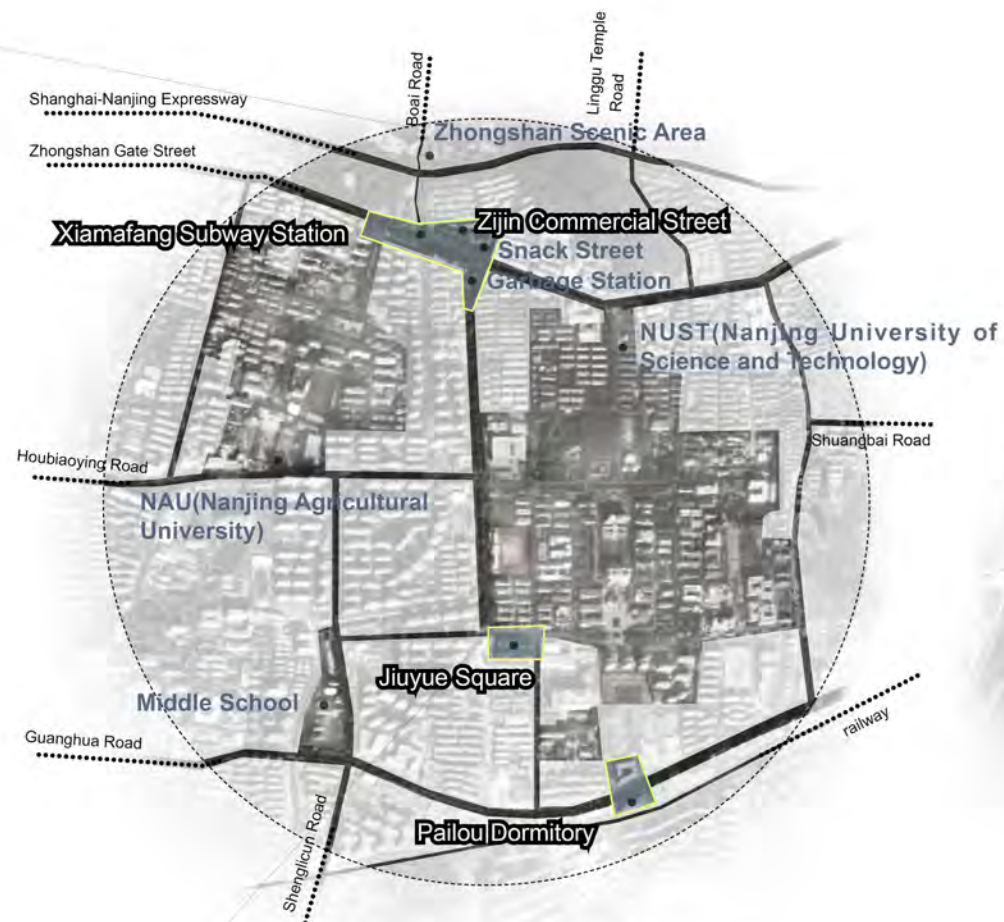


PROBLEM MAP

The problem points in this area are marked one by one on the map. The problem points in this area are marked one by one on the map. The problem points in this area are marked one by one on the map.

	Problem spot		National highway		Urban thermal map
	Parking lot		Urban secondary road		Business places
	Bus station		Third-class urban road		Hospital
	Subway entrance		Green space		University
	Subway route		School zone		Middle school
	River system		Residential quarters		

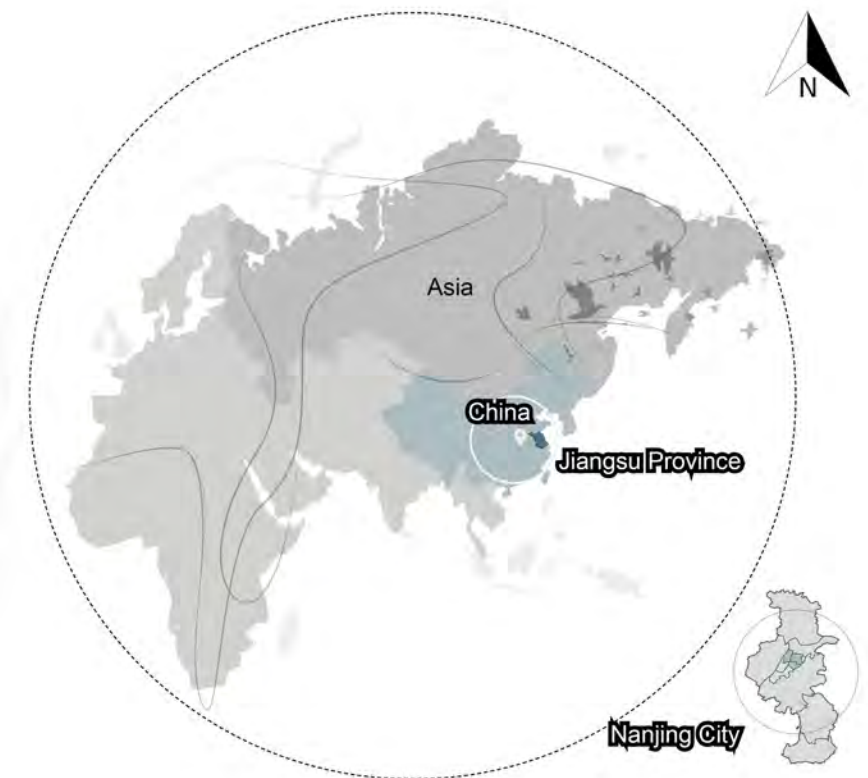
Location Analysis



Xiaolingwei Street



Nanjing City



China

In **2007**, the Xiamafang Ruins Park was built, and all the cultural relics related to the site were properly placed here.

2010

The XMF Station of Nanjing Metro Line 2 was put into use.

Night markets appeared in Xiamafang in **2013**. At ten o'clock every night, dozens of snack stalls stand out.

Jiuyue Square completed in **2020**. After attracting investment several years, the operating rate is still low.

Historical Development

The Pailou dormitory of NAU was built and put into use in **2021**.

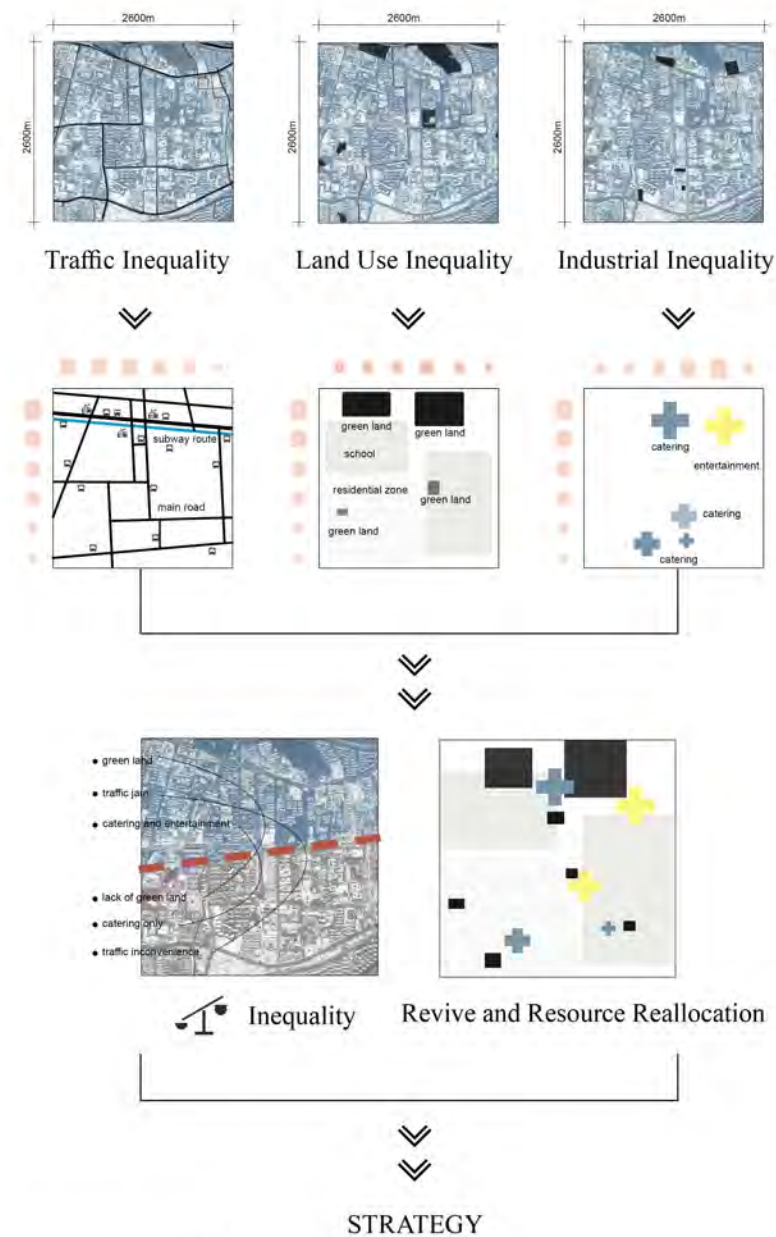
Zijin Commercial Street completed, which is a comprehensive commercial block.

Relevant departments rectified the pollution of the barbecue lampblack and sewage in **2017**.

Flow of people
Time

GRID SYSTEM STUDY

Dynamic Inequality Appears in Xiaolingwei Street



Strategy 1 Industrial Equality

Reason for the Deserted Commercial Complex--Jiuyue Square

Main Business Pattern

Business Mood	Case Number	Percentage
Shopping	711	32.8%
Catering	563	26.0%
Scientific Culture Education	412	19.0%
Accommodation	287	13.2%
Medical & Health	75	3.4%
Tourist Attractions	43	2.0%
Exercise & Fitness	40	1.8%
Entertainment	36	1.7%
Total	2169	100%

Through the analysis of POI data, it can be found that the main type of business is catering and shopping, with less leisure and fitness. The distribution centers of all types are concentrated in the northwest corner of the base.

Enrich the Types of Shops



Restaurants (Initial Form)

Retain some original restaurants, enrich the types of food and beverage outlets: milk tea shops, dessert shops, bars.



Entertainment Shops

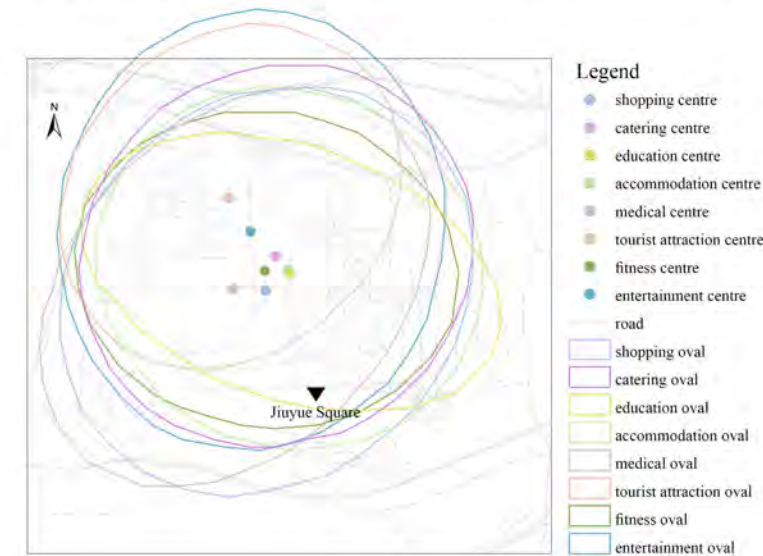
Add leisure and entertainment shops: massage shop, private cinema, pet shop, gym, chess room.



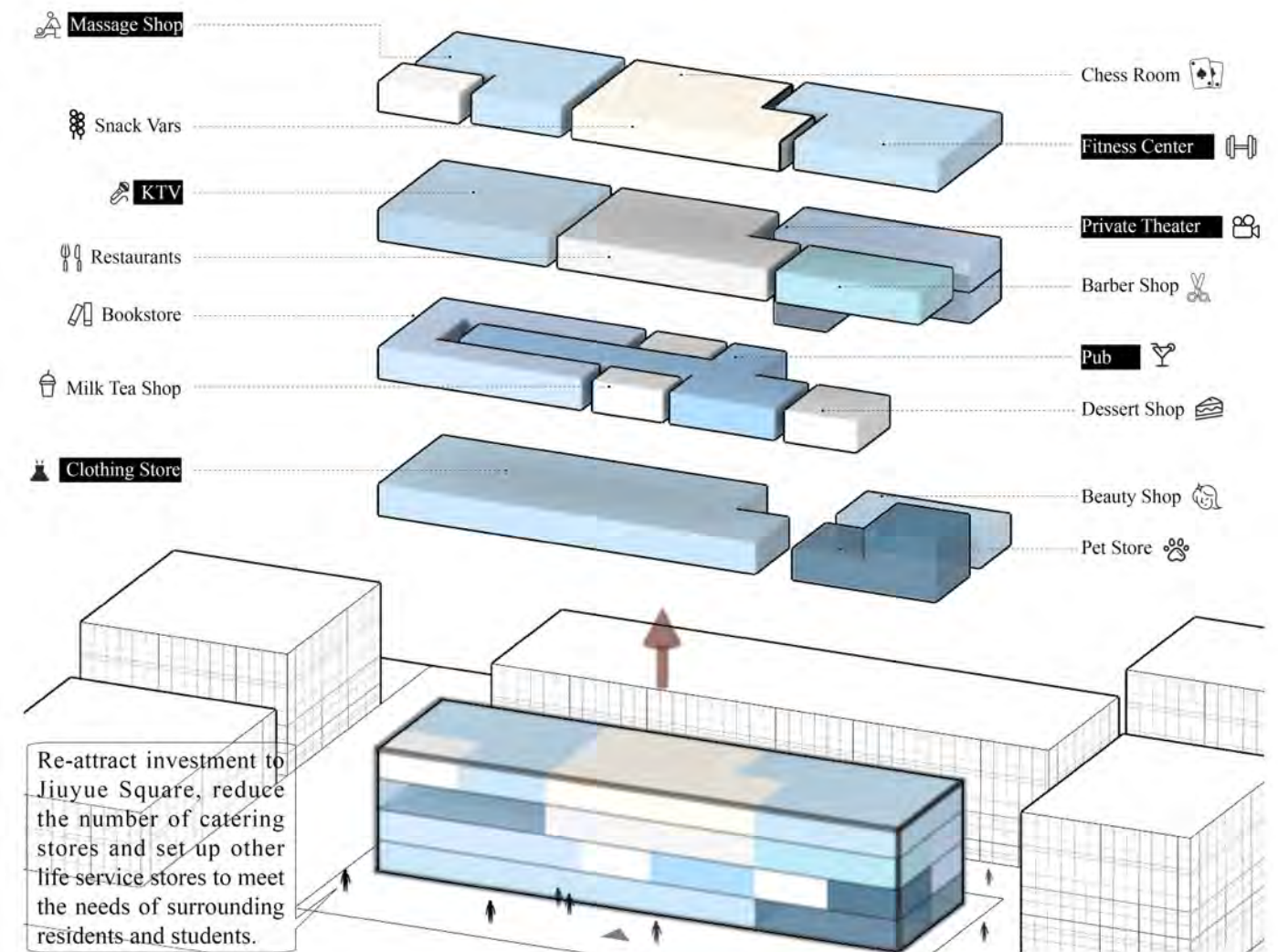
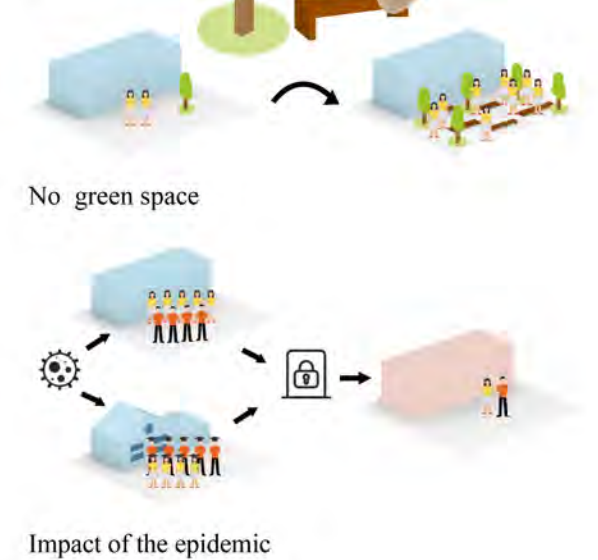
Shopping Stores

Add various shopping stores: clothing stores, beauty stores, bookstores, barbershops.

Ellipse Analysis of Standard Deviation of Living Service Industry



Other Factors



Strategy 2 Climate Block

1. Optimize Logistics Process

1.1 Scientific Waste Collection

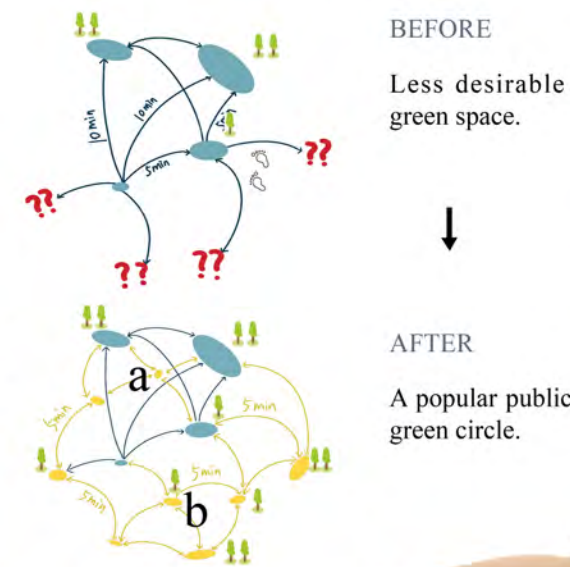
Sources and Types of Contamination



Strategy



2. Create a Green Space Circle within Five-minute Walk



Remove

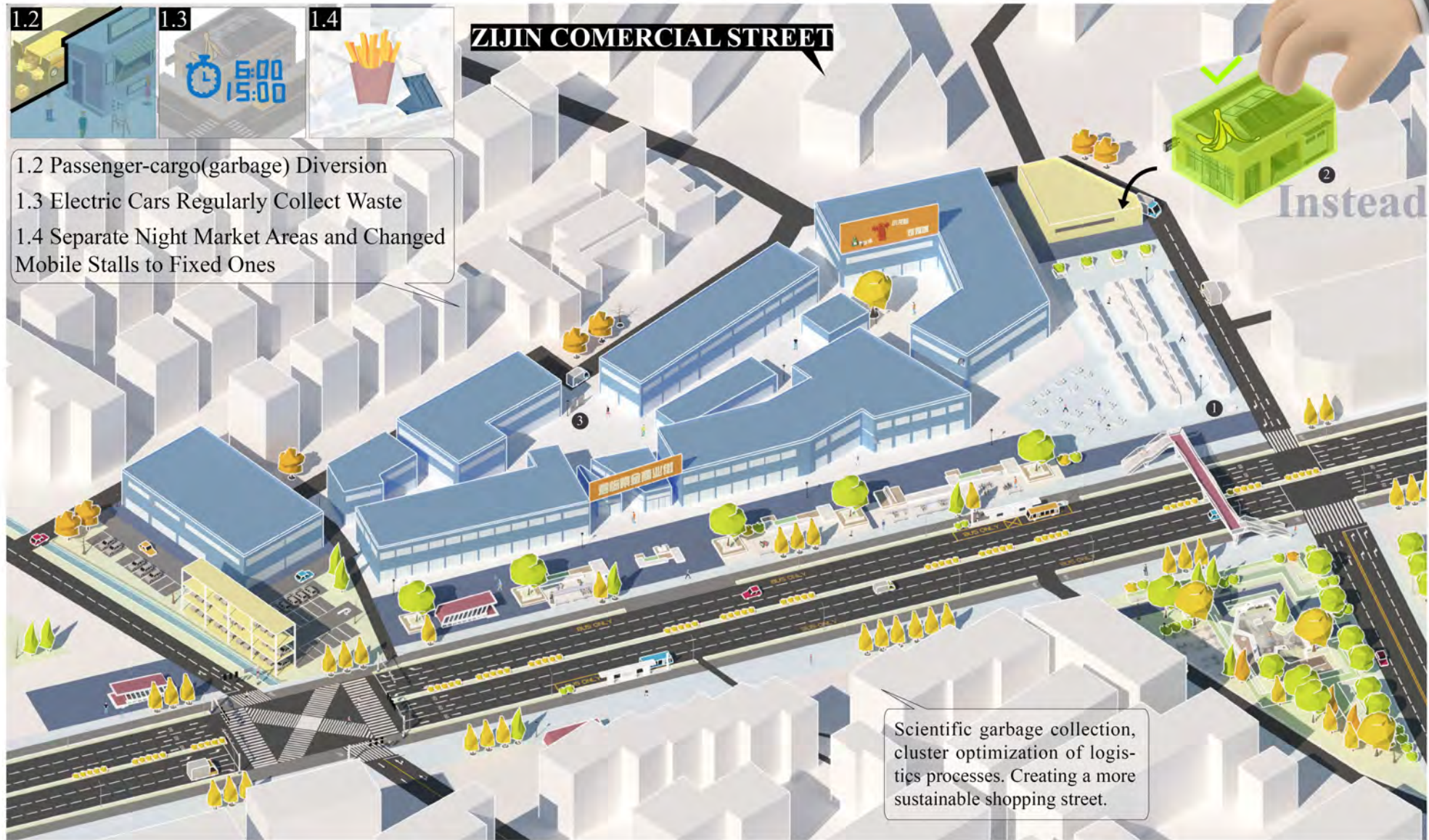


a. Converting the original garbage station into a pocket park.

b. Add greenery and open space at the entrance of Jiuyue square.

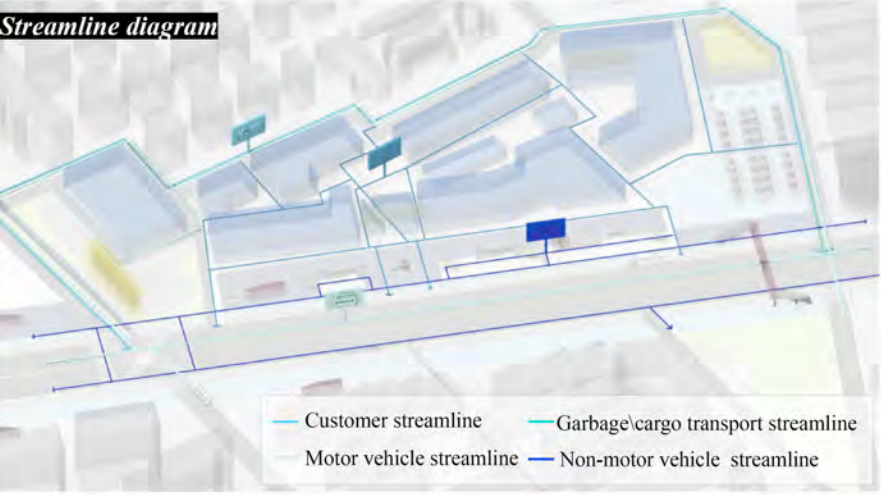
- 1.2 Passenger-cargo(garbage) Diversion
- 1.3 Electric Cars Regularly Collect Waste
- 1.4 Separate Night Market Areas and Changed Mobile Stalls to Fixed Ones

ZIJIN COMERCIAL STREET



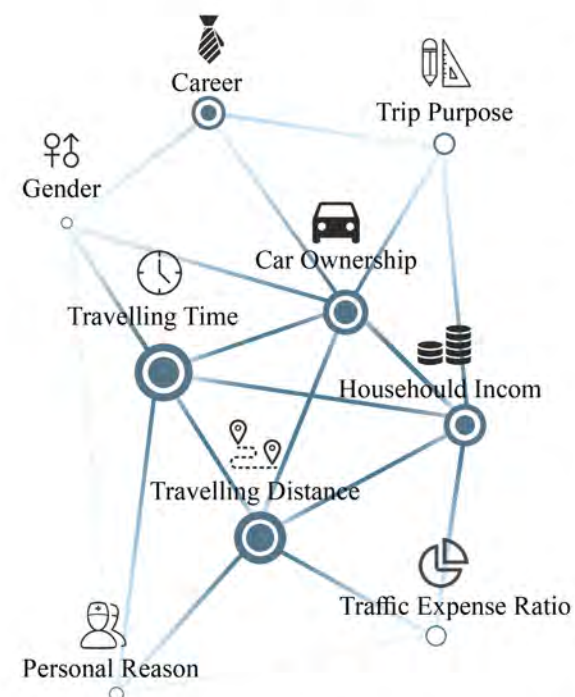
Turning the original garbage station into a pocket park, adding green space at the entrance of Jiuyue Plaza, and constructing several green spaces in the other southern part of Xiaolingwei Street, to make people walk every three minutes to a rest point, improve the quality of citizens' life while driving the development of the southeast area.

Streamline diagram



Strategy 3 Smart Transportation

Traffic Mode Selection Tree



Citizens' choice of travel mode is influenced by several factors. Walking, electric vehicles, and subway bike sharing are the main ways to travel.

Traffic Mode Choices ↓

1	WALK	Capacity: 1 people Case number: 13502	Percentage: 20.5%	
2	E-BIKE	Capacity: 1-4 people Case number: 8457	Percentage: 20.8%	
3	BICYCLE	Capacity: 1-2 people Case number: 8050	Percentage: 9.3%	
4	SUBWAY	Capacity: 1200-1500 people Case number: 6840	Percentage: 19.8%	
5	CAR	Capacity: 2-4 people Case number: 5642	Percentage: 12.6%	
6	BUS	Capacity: 40-50 people Case number: 4916	Percentage: 10.7%	
7	SCHOOL BUS	Capacity: 20-45 people Case number: 1500	Percentage: 3.3%	
8	MOTOECYCLE	Capacity: 1-2 people Case number: 1250	Percentage: 3.0%	

Strategy Generating

METHODS

- Improve Infrastructure:
- Smart Transportation:

ELEMENT

- Encourage Walking
- Encourage Non-motorized Vehicles
- Multi-storey Comprehensive Traffic
- Intelligent Lighting
- School Bus Booking Platform
- Private Car Parking Program
- BRT Bus Rapid Transit

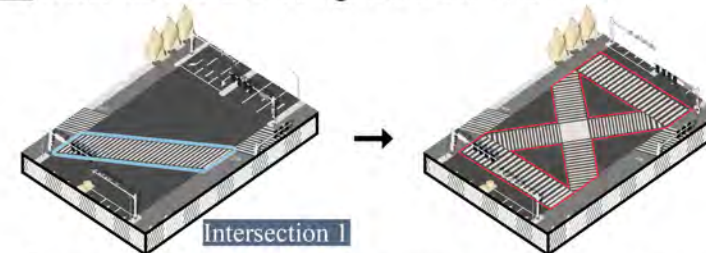
VISION

- Energy Saving
- Enhance Traffic Efficiency
- Citizen-friendly

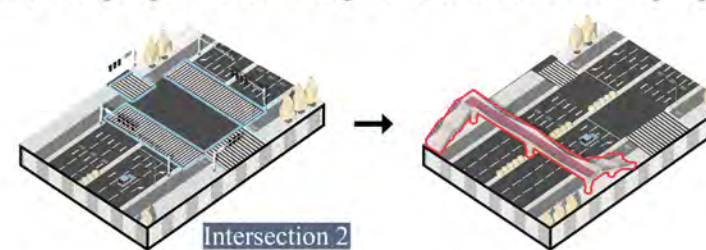
STEP 1. Improve Infrastructure

1. Encourage Walking

1.1 Make the zebra crossing meets the 'wish line'

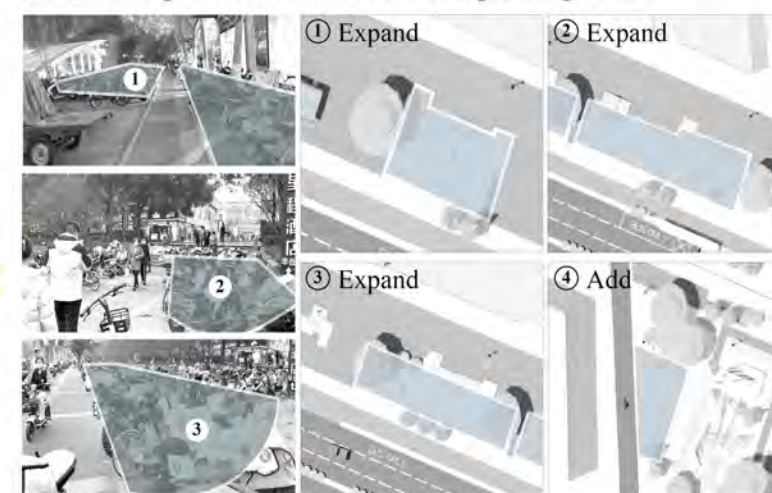


1.2 Set up a pedestrian bridge to relieve the flow of people

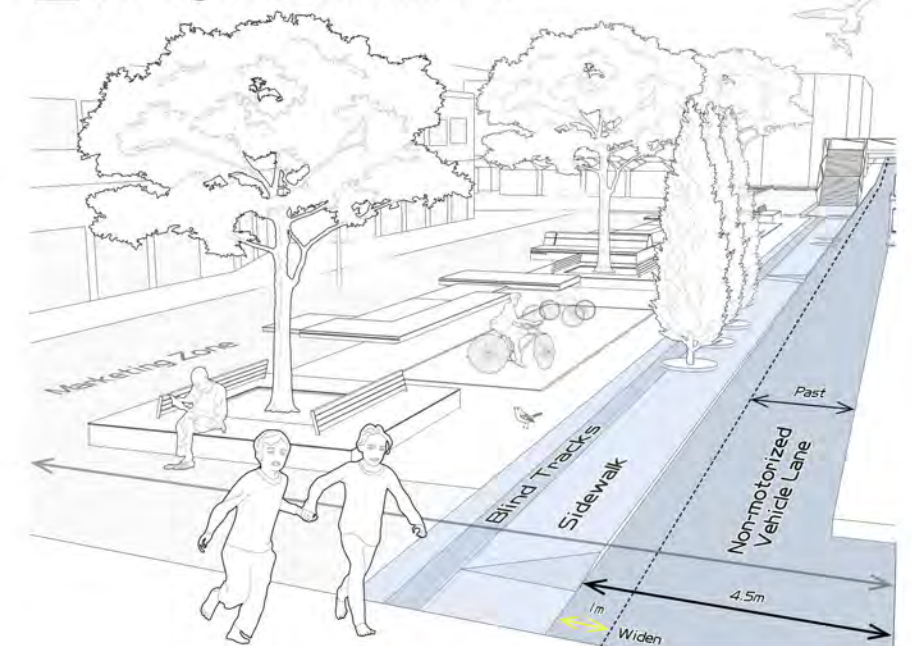


2. Encourage Non-motorized Vehicles

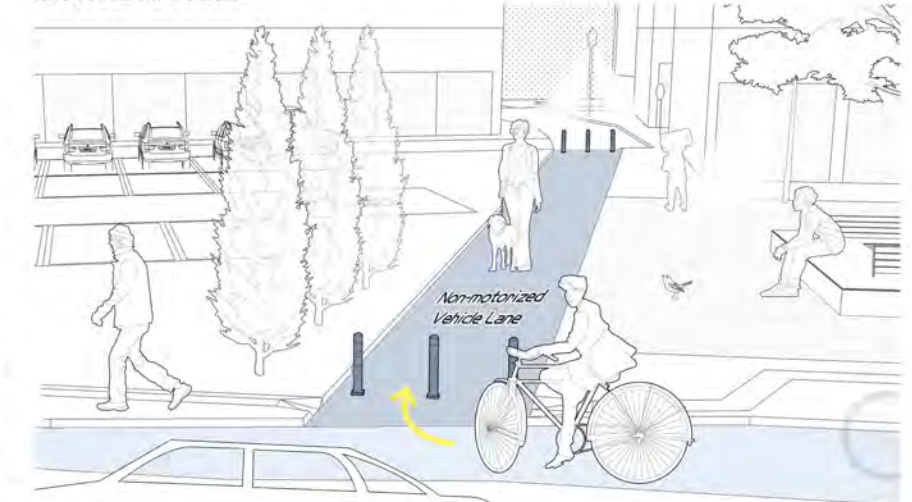
1.1 Increase the number of parking spots for shared bicycles and expand non-motor vehicle parking areas



1.2 Widening of non-motorized lanes

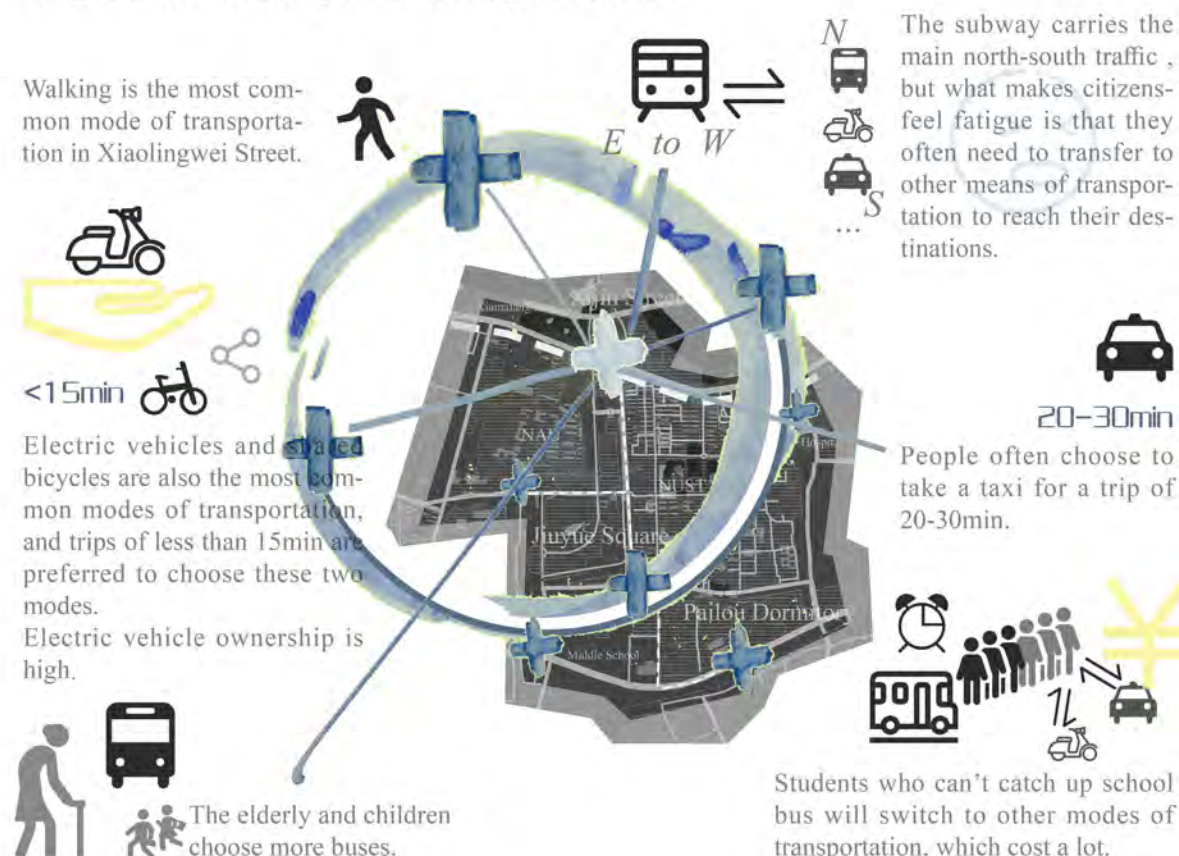


1.3 Increase the length of motorway lanes by providing non-motorized roads



Traffic Pattern Study in Xiaolingwei Street

Walking is the most common mode of transportation in Xiaolingwei Street.

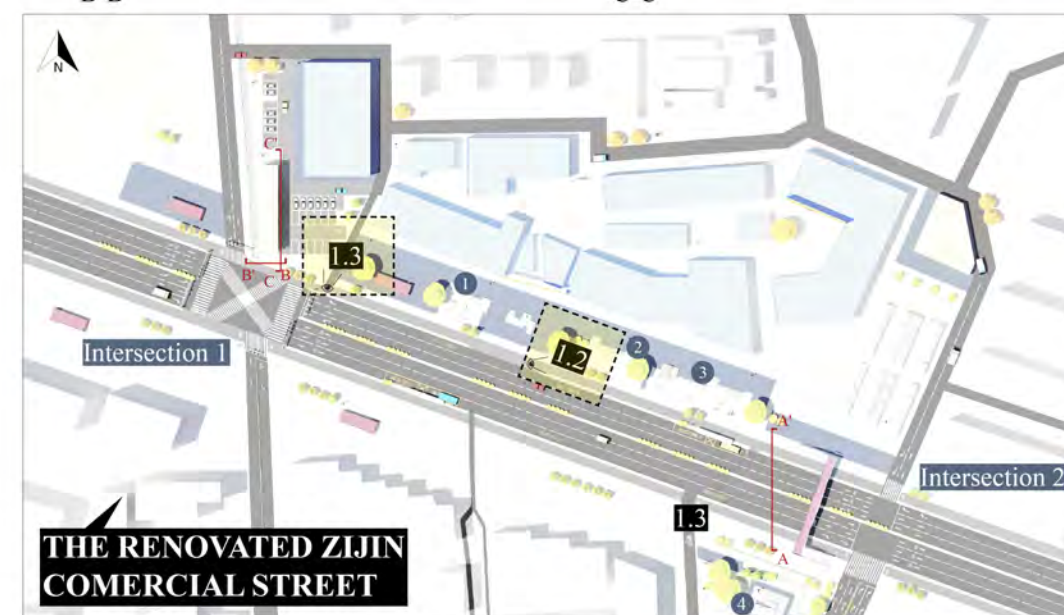
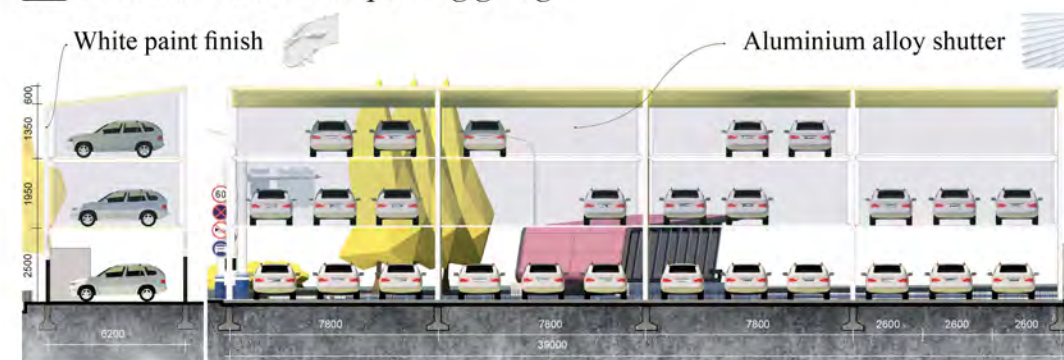


3. Multi-storey comprehensive traffic structure

1.1 Flyover - City road - Subway

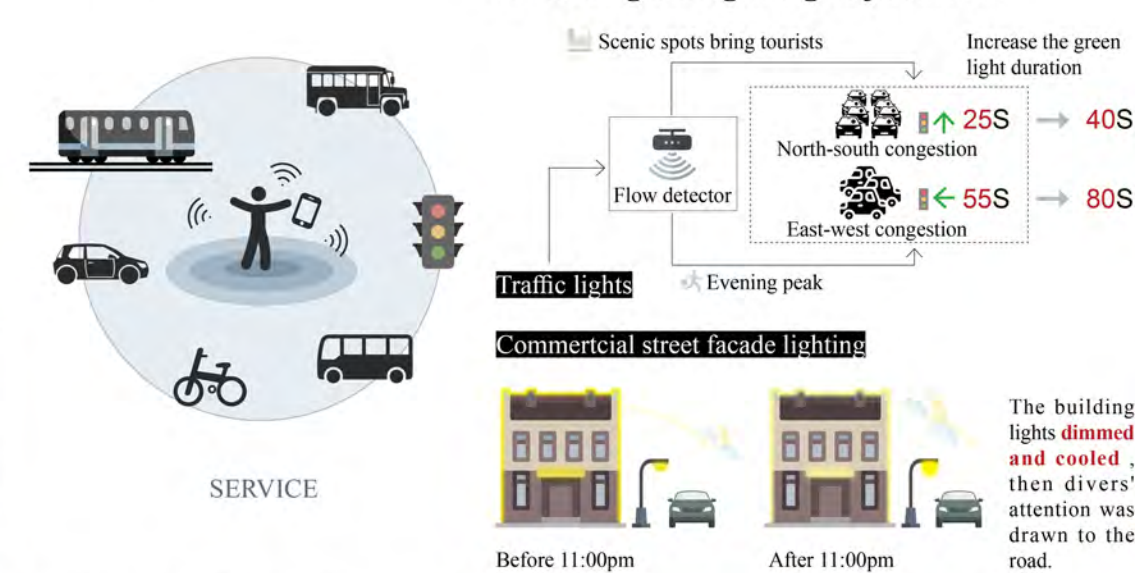


1.2 Trilaminar mechanical parking garage



STEP 2. Smart Transportation

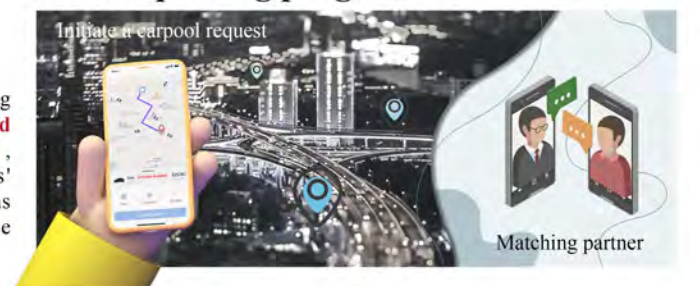
1. Intelligent lighting adjustment



2. School bus booking platform



3. Uber pooling program



4. Bus Rapid Transit (BRT)



4.1 Exclusive bus lane

06:00-09:30	Morning peak	BUS ONLY
11:30-12:30	Noon peak	
17:00-19:30	Evening peak	

In the following time periods, buses have independent right of way, and other vehicles are prohibited from driving in the bus lane, so as to improve the efficiency of bus operation and promote people to choose to travel by public transport.

4.2 Smart bus station

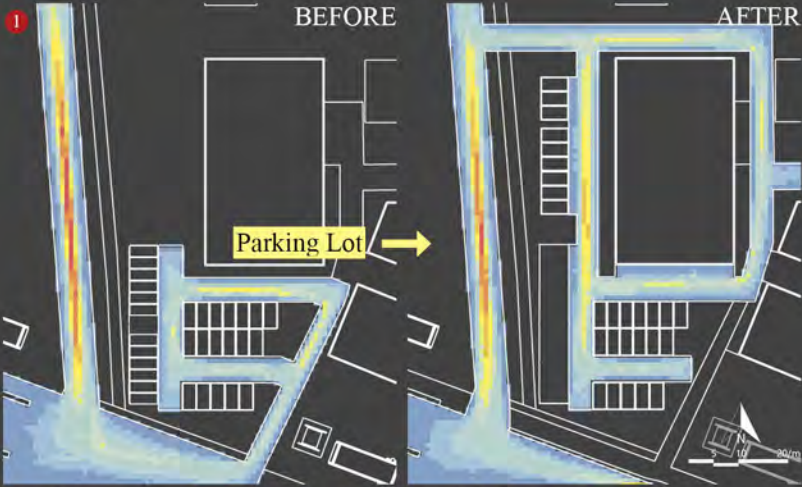


Crowd Aggregation Analysis



1. The degree of crowd gathering

Depthmap was used to analyze the degree of people gathering in the blocks before and after the design. The results showed that the blue color at intersections 1 and 2 became darker, which proved that the zebra crossing transformation and the assumption of the overpass could effectively alleviate the congestion. Besides, the red area at the gate of the block is reduced, which proves the rationality of increasing the non-motor vehicle parking area and hard area and dividing the separate night market area.



2. Aggregation analysis of vehicle flow

The decrease in the red area and the increase in the dark blue area prove that increasing the length of motor vehicle lanes and building three-dimensional parking lots can reduce the concentration of vehicles.

◎ Xiaolingwei Street, Nanjing City



Climate Block

Committed to creating a more sustainable shopping street. Experiments are planned to carry out in the areas of waste collection, logistics and innovative street lighting. For tech companies and utilities, the street is an interesting urban laboratory where they can test new products and services and then scale up.

Smart Transportation

Through the construction of a real-time dynamic information service system, the in-depth mining of transport-related data, the formation of a problem analysis model, to promote the safer, more efficient, more convenient, more economical, more environmentally friendly, and more comfortable operation and development of transportation. Promote the transformation and upgrading of transport-related industries

Balance business structure

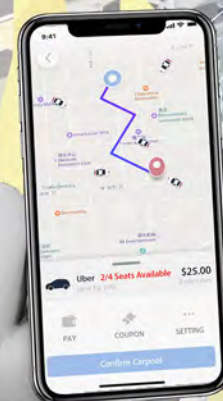
Reset the business structure and stimulate the vitality of the southern region.



NEW MAP

Updated intersection 1

UI System School bus booking platform



Uber pooling app



Google map/Gaode map
real-time bus



Improve Infrastructure

Modified: Zebra crossing, garbage station, motorway, three-dimensional parking lot, non-motor vehicle parking...
Addition: Pedestrian bridge

Green Space Circle

The green area that can be reached in five minutes, which improves the quality of life of community residents, and is a "natural oxygen bar" for citizens.

Optimize Logistics Process

By extending the length of motorway, the congestion of parking lot is alleviated; Cluster logistics management, people and vehicles here have been shunted.

Exclusive Bus Lane

During the rush hour, buses have independent road rights, which improves the efficiency of bus operation and encourages more people to choose buses.

Inductive Traffic Lights

Combines the characteristics of the surroundings, and adjusts the number of green seconds in real time by inductor, effectively alleviating the congestion.

Smart Facade Lighting

Late at night, the street facade lights dim and cold, so that drivers more focused on driving, safety greatly improved.