Urban micro-space reconstruction strategy

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Abstract: With the rapid development of China's economy and society, people's living standards have been gradually improved, domestic urban motor vehicles into the high-speed development period, the rapid growth of urban traffic demand, "difficult to travel", "difficult to park" has become a common traffic phenomenon. Based on the discussion of the strategy of urban micro-space reconstruction, this paper deeply discusses the planning and promotion of urban parking space, aiming to solve the "travel difficulty" and "parking difficulty" of the city and improve the overall image of the city.

1. Introduction:
In recent years, urban transport infrastructure construction in gradually strengthened, further solved the rapid transportation demand, travel convenience for residents, however, in order to solve the problem of "parking", parts of the existence of "for parking and parking" phenomenon, make the city part of the key business district, road area gradually "parking lot" high-quality goods, against the development of city image and landscaping construction. Therefore, it is necessary to conduct in-depth research on how to combine parking space and landscape space organically to meet parking needs and improve the overall image of the city.

2. Existing status quo problems

2.1. Step by step "Car parking" in some key areas

2.1.1. Sidewalk parking
Part of the sidewalk is turned into a parking lot. Some pedestrians are forced to walk in the motorway, which is very dangerous. Trucking by the side of the road can also be dangerous; Special channels designed for the blind are no longer available; Vehicles on the pavement of the ground brick ground, the tree trunk broken skin, to the country's economic losses, to the city environment has brought adverse effects.
2.1.2. The key commercial square has been turned into a parking lot

Figure 1-1 Parking status of a shopping center (source: the author)

A shopping mall square has been turned into a parking lot. The disorderly parking phenomenon is very unfavorable to the urban environment beautification, and the large parking space reduces the commercial atmosphere of the whole commercial square, reduces the theme characteristics of the square, and reduces the shopping experience of residents. At the same time, the shopping plaza is located at an intersection, where "disorderly parked" vehicles have an increasing impact on traffic, urban environment and people's lives. Secondly, there is no clear motor vehicle entrance or exit in the parking lot, and large motor vehicle flow is also a major hidden danger for traffic safety.

2.2. Parking takes up urban green space.
In some streets, parking Spaces occupy urban green space. We all understand the parking space tension, but as a city public area, green space, unauthorized occupation is unreasonable behavior. As the green space is occupied by vehicles for a long time, the soil of the green space becomes very hard and the grass Withers and becomes bare, which greatly affects the environment of the urban road.

2.3. The street lacks bicycle lanes and parking facilities.
Bicycle parking facilities are set up in some streets to provide a safe and standard storage space for citizens' green transportation. However, there are no specific bicycle lanes in some streets. Some well-qualified citizens consciously pull over to the side of the road, while some share the lane with motor vehicles, which greatly affects the traffic order, and the citizens' green travel has potential safety hazards.

2.4. Parking space is too monotonous.
Most street parking Spaces are marked on the cement or asphalt road by road paint, and few parking Spaces are created in combination with the landscape. The monotonous way of marking parking is too random, which greatly reduces the public's experience and enthusiasm for parking, making "parking" gradually become the most reluctant psychological mark in the hearts of the public[1].

2.5. The use of space under the viaduct is too single
Through investigation, it is found that most of the space under the viaduct is mainly used as green space or parking lot, while other forms are not used much. A comprehensive survey shows that there are the following problems in the space under the viaduct in the Green Park:
1. Waste a lot of space
2. Single form of utilization
3. Suppression of space under the bridge. The concrete at the bottom of the bridge is exposed to a large area, and most of the urban viaducts are close to buildings, so the sunlight cannot directly reach the space under the bridge, which makes the space under the bridge dark and makes people feel depressed and uncomfortable [2].
4. The space under the bridge is messy. Part of the urban space under the bridge is illegally occupied by private individuals, which not only makes the space messy, but also poses a threat to the driving of vehicles on the bridge. Even if it is used legally, due to the lack of overall planning, the already depressed space under the bridge is even more messy and crowded [3].

3. Effective solutions

3.1. The parking space will be refined and rationalized.

3.1.1. In addition to the development and utilization of the underground parking lot in some areas, the scope of underground pipe gallery can be expanded to make underground parking space. So that the city to bid farewell to the "spider web" at the same time also bid farewell to the "parking difficult" status quo.

3.1.2. Arrange parking Spaces within a reasonable parking radius to guide citizens to park in an orderly manner.

The layout of parking facilities planning in some foreign cities can be referred to as follows:

| city          | Parking space layout features                                                                 |
|---------------|---------------------------------------------------------------------------------------------|
| Flange flock  | Balanced layout, parking service radius 300m                                                 |
| Hanover,      | Downtown pedestrian street, surrounding buses, parking facilities, parking service radius 300m |
| Moscow        | Balanced layout, combined with subway                                                        |
| Tokyo         | Two parking belts, located at the intersection of subway and expressway, are called the complex. The transfer hub can reach 1 million people/day and night. The complex also has bus terminals |
| Philadelphia  | Separate traffic roads from walking roads and organize parking Spaces at road intersections     |
| Budapest,     | The downtown area guarantees 50 per cent temporary car parking and 15 large garages           |
| In Paris,     | Underground parking lot will be built in streets and squares, which will do little damage to historical buildings. Parking lot will be built near bus points around the city, and part of the downtown area will not need to cross the street to get off the parking lot |

Based on the cases of excellent parking space layout at home and abroad, it is very necessary to build service radius around the area with concentrated traffic flow to meet the reasonable parking space for parking users to walk. The reasonable walking distance is about 300-500 meters, and the walking time is about 5-6 minutes. We can guide citizens to park their cars within the distance of the destination by reducing parking fees or free parking for shopping. A special parking space with a reasonable service radius is an effective measure to alleviate traffic congestion and "parking difficulty”.

3.1.3. Adopt three-dimensional parking mode, increase the number of parking at the same time with green landscape function.

With the gradual improvement of the living standard of the masses, the number of urban motor vehicles is gradually increasing, and the urban land area is over-developed. How to solve the parking problem from the space is an effective way to solve the parking problem. Three-dimensional parking effectively saves the space area and improves the usability of the site. At the same time, it does not conflict with the green landscape, but integrates with each other. In addition, it solves the parking problem and has a beautification effect.
Taking the Natural Flower, Bird and Fish Mall at the intersection of Haoyue Road and Chuncheng Street in Green Park as an example, a reasonable optimization scheme to solve the parking problem and the environmental beautification problem and enhance the site value is shown in the below:

![Figure 1-2 Schematic Diagram of three-dimensional parking combined with green landscape (Source:Baiduhttp://ztc.qingdaonews.com/content/2015-03/14/content_10961745.htm)](image)

![Figure 1-3 Original layout of the mall (drawn by the author)](image)

- Line parking lot
- Central public plaza
- Number of parking: 260

![Figure 1-4 Layout form of mall after optimized design (drawn by the author)](image)

- Vertical parking lot
- Central public plaza
- Number of parking: 450
The original number of parking is about 260. There is no public activity square. The whole square takes parking as the main part, and the traffic form is mixed for people and cars. After the introduction of the three-dimensional parking lot, there are about 450 parking spaces and 1,800 square meters of public activity square for citizens. The traffic mode of separating cars and people is adopted to ensure the safety of shoppers. The central public activity square is enough to hold all kinds of large-scale characteristic cultural activities, which is convenient for the mall to improve its own image, make urban residents actively participate in it, and promote the commercial atmosphere while improving the site value.

3.1.4. Adopt the crossing parking mode, and optimize the construction of vehicle parking mode. There are fewer traditional parallel parking vehicles, but the parking area occupied by them is narrow, and it is convenient and fast to get out of the vehicle; The vertical parking space is compact, more vehicles are parked within the unit length, and it also has the advantages of convenient and rapid driving. Crossover parking is a parking mode with the highest spatial utilization, which can effectively realize fast access to vehicles under reasonable planning layout [4].

![FIG. 1-5 Schematic Diagram of Intersection parking (drawn by the author)](image)

3.2. Increase bike lanes and encourage citizens to travel green. We will build more bicycle lanes on new streets in cities, increase the proportion of pedestrian and bicycle trips, and form a number of well-systematic and environmentally friendly green transportation systems to promote the development of green urban transportation. Encourage and support citizens to choose green travel. [5] "Green travel" reflects a responsible attitude towards life, a noble civic morality, an emerging trend of fashion and an advanced form of civilization.

3.3. Improve the parking space environment and integrate it with the landscape environment. At the same time of traffic infrastructure construction, it is necessary to conduct humanized design from the perspective of users, make detailed spatial differentiation of single parking lot and combine with surrounding landscape environment to create a comfortable and pleasant green ecological parking space [6].
3.4. Improve the effective use of the space under the viaduct bridge to create a unique urban image
The viaduct should not be regarded as an urban structure, the design of the space under the bridge should be strengthened, the cultural characteristics and landscape elements of the city should be integrated in, and the space under the bridge should be used to convey the cultural atmosphere of the whole city [7]. Through the comprehensive renovation of the space under the bridge, it provides the residents with a place to gather and stay. The space with functions such as shopping, green space, landscape, entertainment and interactive experience is replaced with a small square instead of a single use of the space under the bridge as a parking lot, so as to diversify the functions of the space under the bridge.
4. Conclusion and prospect
In the process of building a modern city, the environment for urban travel should be taken into account, which is an important aspect to reflect the comprehensive quality of life and livability of a city. Therefore, in order to meet the challenge of parking demand in the future, the construction of parking facilities and urban landscape environment space should be closely combined to really improve the image of the city.

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