Study on the influence of Village form of famous Tourism Village on the layout of garbage Collection points - A case study of famous Tourism Village in Guilin City

Bing Feng, Yalong Liu, Xiaoyu Liu, Ran Xie, Yi Xiang

1Department of Civil and Architectural Engineering, Guilin University of Technology, Guilin, Guangxi Zhuang Autonomous region, 541000, China, 18773708779@163.com
2Department of Civil and Architectural Engineering, Guilin University of Technology, Guilin, Guangxi Zhuang Autonomous region, 541000, China, 11382 75775@qq.com
3Department of Civil and Architectural Engineering, Guilin University of Technology, Guilin, Guangxi Zhuang Autonomous region, 541000, China, 272349573@qq.com
4Department of Architecture Engineering, Hezhou University, Hezhou, Guangxi Zhuang Autonomous region, 542800, China, 768940447@qq.com
5Chenzhou Urban Planning and Design Institute, Chenzhou, Hunan Province, 423000, China, 1270564795@qq.com

Abstract: Based on the contradiction between the rapid development of tourism, especially rural tourism and the increasing complexity of domestic garbage in recent years, a representative tourism village in Guilin City, Guangxi Zhuang Autonomous Region, was selected to study the layout of garbage collection points. Firstly, the characteristics of domestic garbage are analysed, that is randomness, timeliness of transporting, diversity and minimization of ending. Secondly, the villages are investigated to determine the status quo of village form and garbage bin layout. Finally, the number and size of collection points are affected by the points of village form, and the line of village form influences collection points. The layout direction, the main structure of the formation of the plane graphics determines the layout of important garbage collection points into a line formed by the graphics.

1. Introduction
Tourism plays an important positive role in stimulating economic growth. With the stable growth of the domestic economy and the increasing affluence of the people, tourism has become a choice for more and more people to spend weekends and vacations. For example, according to the Guangxi Autonomous region people's Government, in 2018, rural tourism in Guangxi received about 308 million tourists, an increase of about 31 percent over the same period last year. With the increase of the number of tourists, the output and composition of garbage have changed greatly. The output of garbage is increasing day by day, and the proportion of plastic products and glass in the composition of garbage is getting higher and higher. Domestic waste has more and more adverse effects on the environment. Domestic waste is not properly disposed of in time, is not conducive to create a good living environment, is not conducive to leave a good impression on tourists, is not conducive to the healthy development of tourist villages.

Garbage collection point, as an intermediate link between garbage disposal and garbage removal, plays an important role in garbage disposal. The domestic research on garbage collection point mainly...
focuses on using GIS to optimize the layout of garbage collection point\textsuperscript{[1-3]}, and intelligent facilities are used in garbage bins to realize the intelligence of garbage bins\textsuperscript{[4-6]}. At present, there is no research on the layout of garbage collection points from the village form, but through the experience of daily life and on-the-spot investigation, it is found that the village form has an important influence on the layout of garbage collection points. The study of the influence of village form on the layout of garbage collection points is of great significance to improve the methods of garbage management and enhance the village environment.

2. General characteristics of domestic waste

2.1. Classification of domestic waste

In 2018, the domestic waste Classification Mark (draft for soliciting opinions) divides domestic waste into 5 categories, 19 subcategories and a total of 24 categories, such as the specific classification (Table 1).

| Large category | Waste and recyclables | Hazardous waste | Perishable garbage | Lime soil | Other garbage |
|----------------|-----------------------|-----------------|--------------------|-----------|---------------|
| Small category | paper                 | lamp            | family after-dinner garbage | Lime soil | paper products |
|                | plastic               |                 | catering waste     | Lime soil | plastic products |
|                | metal                 | household chemicals | fruit and vegetable waste | textile fabrics |
|                | rubber                |                 |                    |           | textile fabrics |
|                | glass                 |                 |                    |           | textile fabrics |
|                | fabric                |                 |                    |           | textile fabrics |
|                | furniture             |                 |                    |           | textile fabrics |
|                | household appliances and electronic products | batteries | garden garbage | other categories |

In 2018, the guidance Manual for the whole process Classification of Municipal solid waste in Shanghai divides domestic waste into four categories: hazardous waste, recyclable, wet waste and dry waste. On July 1, 2019, Shanghai implemented the regulations on the Management of Municipal solid waste, adding garbage classification to the laws and regulations. The reason why we attach so much importance to garbage classification is that the classification of garbage is of great significance to the realization of waste reduction, resource utilization and harmlessness.

2.2. Overview of life cycle research on waste

The process from garbage generation to final disposal can be regarded as the life cycle of garbage, and it can also be understood as the process of garbage from cradle to grave. The research on the life cycle of municipal solid waste mainly focuses on different transport modes, the impact of different treatment methods on the environment, and provides environmental impact data for the choice of garbage transport and treatment methods, and puts forward the corresponding technical improvement measures.

Heping Huang evaluates the sanitary landfill of municipal solid waste in Nanchang by using life cycle assessment theory and eFootprint software, analyses the prominent types of environmental impact in the process from garbage collection and transportation to sanitary landfill and then to landfill power generation, and puts forward improvement measures for each link\textsuperscript{[7]}. Youyuan Chen put forward two typical modes of domestic waste treatment and disposal in rural areas-centralized transport disposal mode and classified local treatment mode. Under the two modes, the impact of the whole life cycle from garbage collection to final treatment on the environment was analysed and some suggestions for improvement were put forward\textsuperscript{[8]}. Xiaozhi Zhou studied the impact of the whole life cycle of municipal solid waste on the environment and the resource rate in Beijing. The results showed that the potential value of the environmental impact of composting was much smaller than that of incineration and landfill. In terms of resource utilization, incineration is better than composting, composting is better than landfill\textsuperscript{[9]}. 

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2.3. Life cycle characteristics of garbage
The life cycle of garbage can be regarded as "garbage flow" or "garbage flow", from the beginning to the end of the flow. From the moment the garbage is generated, it can be regarded as the beginning of the flow, the garbage is dropped to the garbage collection point, and then the garbage is transported from the garbage collection point to the garbage transfer station or the garbage disposal site can be regarded as the movement of the flow. Finally, the waste can be regarded as the end of the flow after incineration, landfill and composting, and the life cycle diagram of the waste (figure 1).

![Schematic diagram of the life cycle of garbage](image)

Figure 1 Schematic diagram of the life cycle of garbage

2.3.1. The generation is random
The production of garbage mainly studies the output and composition of garbage, and the generation of garbage is mainly reflected in randomness. As far as the output of garbage is concerned, different provinces, different seasons, different levels of economic development, different levels of education and so on will affect the output of garbage, reflecting randomness. In view of garbage production, it has been found that the per capita domestic waste output in southern rural areas is lower than that in northern rural areas, and that in western rural areas is lower than that in eastern rural areas\[10\]. As far as the components of garbage are concerned, the percentages of the components of domestic waste in different eating habits, different living habits and different areas will also be different, which also reflects randomness. According to the composition of municipal solid waste, it is found that the proportion of ash and slag in municipal solid waste in northern China is higher than that in southern cities, and the proportion of kitchen waste in urban domestic waste in eastern China is higher than that in western cities\[11\]. This is related to the developed economy in the eastern region and coal-fired heating in the northern region in winter. The composition of domestic waste in northern rural areas is mainly dregs, while that in southern rural areas is mainly kitchen waste\[10\].

2.3.2. Exercise is timely
The movement of domestic waste mainly refers to the garbage from the household to the domestic waste collection point, from the garbage collection point to the garbage transfer point, from the garbage collection point or the garbage transfer station to the garbage disposal site (landfill, incineration power plant, landfill). The main characteristic of garbage movement is timeliness, that is timely removal of garbage, on the one hand, to prevent garbage stacking time is too long, the perishable components of garbage decay to produce a more unpleasant smell, affecting the surrounding environment, on the other hand, in order to prevent garbage filling, so that the collection point to leave enough space for people to put.

2.3.3. The end is diverse and minimum
At present, the treatment of waste is divided into three types: landfill, incineration and composting. The purpose of waste treatment is mainly reflected in the minimization of harm and the diversity of treatment methods. According to their natural conditions, economic conditions, land use conditions and the composition of domestic waste, different areas often adopt different final treatment methods, such as burning as the main treatment method in areas with tight land and more developed economy. Landfill may be the main way to deal with domestic waste in areas with sufficient land, remote location and inconvenient transportation, but at present, several ways are generally adopted to deal with domestic waste. The ultimate goal of treatment is to minimize environmental hazards and reduce the environmental impact on rural and urban areas.
3. Concept and composition of village form

3.1. The concept of village form
Form is interpreted in "Student Ci Hai" as the shape of things or the shape of the outside of the organism. Therefore, the village form can be defined as the village shape formed by human activities after a certain period of time under the influence of nature, economy and society.

3.2. The elements of village form
Li Li divides the composition of rural settlement form into three aspects: life style, spatial characteristics and social structure characteristics[12]. Qiming Jin believes that the composition of village form is mainly composed of people, roads, topography and climate. According to the distribution of settlements on the plane, the village form can be divided into aggregation type and dispersion type[13]. According to the extension mode of the village, the aggregation village can be divided into cluster, band and ring. Whether the village form is aggregated or dispersed, according to the perspective of geography, the main elements are center, boundary and structure. The center refers to tourist service centers, ancestral halls, theatrical buildings, ancestral halls, temples, squares and ponds. Boundaries refer to roads, rivers, mountains, and farmland. Structure refers to the logical order which corresponds to the overall shape and outline of the village and organizes the various elements of the village. The places with a large number of villages can be regarded as the points of the village form, the roads and rivers of the village as the lines of the village form, and the figures formed by connecting the points and lines of the village as the structure of the village form.

4. Investigation methods and current situation of research area

4.1. Investigation methods
Interview and investigation method: through oral conversation with villagers and village cadres in the investigation village, we can directly understand the charges of garbage collection points in some villages, the frequency of clearance, the main gathering places of the village, and the peak season of tourists.

The software investigation method has two steps. First, the use of mobile phone APP (Outdoor Assistant) with the recording function to record their own trajectory, at the same time their own photos and trajectory points automatically superimposed together, it is convenient to record the location and number of trash can layout. The second is to use satellite map software to download satellite images, use CAD to map the buildings, roads, bridges and rivers of villages in satellite images, and mark the main sites of villagers' daily activities, as well as the location and number of garbage cans recorded by two-step outdoor assistants.

4.2. Research on the current situation of the village
The four villages in this study are all famous villages with characteristic landscape resources. These four villages are located in Guilin City. They are Sheshan Village, Hongyan Village, Xiaolong Village and Lujia Village. In addition to Lujia Village, the other three villages are also famous villages with national characteristics of landscape tourism.

Xiaolong Village has 399 households with 1155 people. There are six groups in Xiaolong Village, namely Laocun, Tangbianjuntun, Jiangjiatun, Lujiatun, Huangjiatun and Tongjiatun. The main tourist attractions are located in Tongjiatun. People in the village collect rubbish every day. There are two garbage pools, 16 garbage bins and two garbage incineration sites in the village. The layout spacing of garbage bins and the number of garbage bins per place are as follows (tables 2 and 3). The relative concentration of people are wind and rain bridge, small square.
Table 2 Distance between adjacent trash bins

| Trash can number | 1-2 | 2-3 | 3-4 | 4-5 | 6-7 | 7-8 | 9-10 | 12-13 | 12-14 | 14-15 |
|------------------|-----|-----|-----|-----|-----|-----|------|-------|-------|-------|
| Adjacent dustbin distance / m | 40.6 | 85.8 | 56.1 | 116.9 | 25.4 | 116.6 | 17.1 | 47.8 | 111.8 | 49.6 |

Table 3 The number of trash bins placed everywhere

| Trash can number | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|-----------------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|
| Number of trash cans / a | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 2 | 1 |

Hongyan Village has 103 households, 407 people. The main tourist attractions in the built-up area of the village are located in the east of the village. There are 35 garbage bins in the village, of which 31 are in the tourist scenic spots in the east of the village and 4 in the residential areas in the west of the village. The layout spacing of garbage bins and the number of garbage bins per place are as follows (tables 4 and 5). The scenic spots in the eastern part of the village are cleared every day, twice a day, once in the morning and once in the evening when there are a lot of tourists. However, the residential areas in the west are sometimes cleared every two or three days. The relatively concentrated points of the flow of people are the wind and rain bridge, the small square, the Zhu family's old house and the tourist parking lot.

Table 4 Distance between adjacent trash bins

| Trash can number | 1-2 | 2-3 | 3-4 | 4-5 | 6-7 | 7-8 | 8-9 | 9-10 | 10-11 | 12-13 | 14-15 | 15-16 | 16-17 | 16-18 |
|------------------|-----|-----|-----|-----|-----|-----|-----|------|-------|-------|-------|-------|-------|-------|
| Adjacent dustbin distance / m | 25.4 | 35.6 | 23.3 | 64.2 | 13.5 | 22.8 | 22.5 | 20.1 | 28.8 | 20.4 | 45.6 | 24.0 | 41.9 | 39.4 |

Table 5 The number of trash bins placed everywhere

| Trash can number | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |
|------------------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Number of trash cans / a | 1 | 2 | 2 | 3 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 1 | 2 | 5 | 1 | 3 |

Sheshan Village has 140 households, 586 people. The main tourist attractions in the built-up area of the village are located in the south of the village. There are 28 garbage bins, of which there are 19 garbage bins in the tourist scenic spots in the south of the village and 9 in the residential areas in the north of the village. The layout spacing of garbage bins and the number of garbage bins per place are as follows (tables 6 and 7). Garbage is cleared every day, twice a day at a time when there are a lot of tourists, once in the morning and once in the evening. The relative concentration of people are Ping'an Bridge, Gongcheng Camellia oleifera Culture Corridor, Riverside rest Corridor and tourist parking lot.

Table 6 Distance between adjacent trash bins

| Trash can number | 2-3 | 3-4 | 4-5 | 5-6 | 6-7 | 5-8 | 8-9 | 10-11 | 11-12 | 12-13 | 13-14 | 14-15 | 15-16 |
|------------------|-----|-----|-----|-----|-----|-----|-----|-------|-------|-------|-------|-------|-------|
| Adjacent dustbin distance / m | 38.1 | 32.3 | 23.4 | 81.7 | 41.2 | 47.2 | 38.1 | 50.1 | 44.0 | 38.5 | 11.4 | 15.8 | 26.7 |
There are 111 households and 328 people in Lujia Village. Compared with Xiaolong Village, Hongyan Village and Sheshan Village, because the whole village was built after the government demolished in 2010, and Lujia Village is closer to Guilin, so the whole Lujia Village built area is the main tourist scenic spot. The layout spacing and the number of trash bins in each of the 30 trash bins are as follows (tables 8 and 9). Garbage is cleared every day. The relatively concentrated points of the flow of people are the wind and rain bridge at the mouth of the village, the children's playground in the north of the village and the tourist parking lot.

| Trash can number | 16-17 | 17-18 | 18-19 | 19-20 | 20-21 | 22-23 | 23-24 | 24-25 | 25-11 | 24-26 | 26-27 | 27-28 |
|------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Adjacent dustbin distance / m | 26.8  | 30.9  | 23.1  | 24.4  | 14.2  | 50.3  | 75.7  | 47.7  | 62.3  | 85.3  | 44.9  | 83.6  |

Table 7 The number of trash bins placed everywhere

| Trash can number | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
|------------------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|
| Number of trash cans/ a | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Trash can number | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 1 | 2 | 1 | 2 | 1 | 1 | 1 |
| Number of trash cans/ a | 1 | 2 | 1 | 1 | 1 | 1 | 2 | 1 | 2 | 1 | 1 | | | | | | | |

Table 8 Distance between adjacent trash bin

| Trash can number | 1-2 | 2-3 | 3-4 | 4-5 | 5-6 | 5-7 | 6-8 | 7-9 | 9-10 | 10-11 | 11-12 | 12-13 |
|------------------|-----|-----|-----|-----|-----|-----|-----|-----|------|-------|-------|-------|
| Adjacent dustbin distance / m | 43.6 | 60.5 | 52.0 | 61.2 | 18.2 | 45.3 | 34.1 | 23.1 | 51.3 | 81.7  | 43.1  | 25.9  |
| Trash can number | 13-14 | 14-15 | 15-16 | 16-17 | 17-18 | 18-19 | 20-21 | 21-22 | 22-23 | 22-24 | 25-26 | 26-26 |
| Adjacent dustbin distance / m | 29.4 | 22.6 | 15.7 | 52.0 | 26.9 | 63.3 | 29.4 | 43.8 | 45.2 | 46.6 | 59.9  | 30.0  |
| Trash can number | 27-28 | 28-29 | 29-30 | 31-32 | 32-33 | 33-34 | 34-35 | 35-36 | 36-37 | 37-38 | 38-39 | 40-41 |
| Adjacent dustbin distance / m | 25.1 | 15.6 | 12.9 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

Table 9 The number of trash bins placed everywhere

| Trash can number | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
|------------------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|
| Number of trash cans/ a | 1 | 1 | 1 | 1 | 2 | 2 | 1 | 2 | 1 | 1 | 2 | 2 | 1 | 2 | 2 | 2 | | |
| Trash can number | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | | | | | | |
| Number of trash cans/ a | 4 | 1 | 3 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | | | | | | |

5. Current situation of garbage collection point layout

5.1. Layout spacing

In 2013, "Technical guidelines for treatment of Rural domestic waste in Guangxi" and "Technical Specification for treatment of Rural domestic waste in 2015" of Guangxi Local Standard, it is proposed that about 10 households should set up two garbage inboxes (pools) with a service radius of about 100m. In the village of Xiaolong, the minimum distance between garbage bins is 17.1 meters, the maximum distance between garbage bins is 116.9 meters, and the average distance is 69.2 meters. The minimum distance between garbage bins in Hongyan Village is 13.5 meters, the maximum distance between garbage bins is 90.5 meters, and the average distance is 37.6 meters. The minimum distance between garbage bins in Sheshan Village is 11.4 meters, the maximum distance between garbage bins is 85.3 meters, and the average distance is 42.3 meters. The minimum distance between garbage bins in Lujia Village is 12.9 meters, the maximum distance between garbage bins is 90.5 meters, and the average
distance is 39.2 meters. The average distance between the garbage bins in these villages is less than 100 meters, which meets the specifications as a whole.

5.2. Equilibrium degree of layout
The balance of layout is described from two aspects. The first is the trash can layout of the whole village. The trash can layout of the whole village is unbalanced, the overall layout of the core scenic area is more dense, and the layout of the non-core scenic area is sparse. Take Hongyan Village as an example, there are 35 garbage bins in the village, including 31 garbage bins in the core scenic area and only 4 garbage bins in the non-core scenic area. The second is the number of garbage bins in the layout of a single garbage collection point. The number of garbage bins in the layout is not the same, some places more and some places have less, less places layout 1 trash can, more places layout 5 garbage collection points. The garbage collection points with a large number of layout are mostly located at the points with large flow of people, such as road intersections, wind and rain bridges and so on.

5.3. Types and dimensions of dustbins
The survey found that the garbage cans in each village are not of a single type and size. In terms of types, we can classify them from the materials of trash cans, the closeness and the types of garbage collected. From the material to divide the iron trash can and the plastic trash can; from the closeness of the trash can to divide the closed trash can with the lid, there is the trash can without the lid in the open air; the handwriting printed from the trash can is divided into kitchen trash can, recyclable trash can, non-recyclable trash can and mixed collection trash can without handwriting. In terms of size, there are large and small. Trash bins range from small to 15 liters, recyclable and non-recyclable bins placed before the catering business, recyclable and non-recyclable bins as large as 120 litres at road junctions, roadsides and tourist parking lots, and some 30 litres placed next to 120 litre bins to assist in garbage collection.

6. The influence of the form of famous tourist villages on the layout of garbage collection points
The four villages investigated in this study, the village shape is mainly linear, cluster, combined with the linear cluster. Linear village refers to the construction of the village along the river, road layout of the building, the village as a whole formed by the shape of the line (belt). The village in the form of cluster refers to the layout of the village along the river and road, the village as a whole is round or polygonal, the north-south axis of the village is roughly equal to the southeast axis. The village form of Lujia Village is cluster, the village form of Sheshan Village is cluster, the village form of Xiaolong Village is banded, and the village form of Hongyan Village is banded + cluster. The village shape and the layout of garbage collection points are as follows (Fig. 2-5). The following analysis of the village form of the point, line, structure is how to affect the layout of the trash can.
Fig. 2 Village form and garbage collection point layout of Lujia village

Fig. 3 Village form and garbage collection point layout of Sheshan village
6.1. The influence of the points of the morphological elements of villages on the layout of garbage bins

In this paper, the point of the elements of village form mainly refers to the place where people gather relatively. Parking lots, tourist service centers, wind and rain bridges, squares, ponds, leisure trails, basketball courts and so on can be regarded as the points of the village. Tourists come from other places by car or by themselves, eat in the car or blow their nose and other reasons to produce garbage, temporarily put the garbage in the car, when arriving at the destination parking lot, stop the car and put the garbage down into the trash can, so the parking lot will produce a larger amount of garbage during
the peak period of tourists. The wind and rain bridge is built on top of the river, reflecting the local architectural culture. Villagers often rest, talk and do business on the bridge. Tourists can enjoy the beautiful scenery, take pictures, shop or just cross the bridge. It is a point where the flow of people is concentrated. For example, on the Hongyan Village Wind and Rain Bridge, you will see many vendors full of goods on the bridge, leaving a gap for people to walk in the middle. As a large open space, children can play freely or accompanied by their parents during the day, and some activities can be held at night. In the evening, there are villagers and businessmen dancing in the square of Hongyan Village, which is used as a place for fitness and entertainment. The promenade is a good place to watch the scenery and rest. In the social mountain village, under the promenade built by the river, the beautiful scenery next to it, coupled with the right temperature, is very suitable for sitting there for a while and relieving your fatigue. Under the promenade, some villagers were seen playing cards below, and several people were watching. Due to the large number of people for a short time or a long time, the randomness of garbage generation is relatively large, which affects the amount (size and quantity) of the layout of garbage collection points. Therefore, the layout of garbage bins should be more or larger, which is also the point that the layout of garbage bins should attract attention and focus on consideration.

6.2. The influence of the lines of the morphological elements of the village on the layout of garbage bins
In this paper, the lines of the morphological elements of the village mainly refer to the roads and rivers of the village. The four villages studied in this study, their roads and rivers are close to each other, and one of the roads and rivers can be studied as the object of study, so the layout relationship between roads and garbage collection points can be studied separately. Buildings are often laid out on one or both sides of the main roads in the village. Restaurants, hotels or homes of local residents are usually arranged on the side of the roads of famous tourist villages, resulting in a large amount and probability of garbage generation. On the one hand, the layout of the trash can is convenient for people to put into use, on the other hand, it is convenient for garbage removal, in addition, we should also consider minimizing the surrounding environment. When people drop rubbish, they often carry rubbish with them on foot, get to the nearest or on the way to the trash can to throw away the rubbish, mainly consider the distance is closer and in the direction of their travel. The cleaners usually dump the rubbish from the trash can on the vehicle and remove it, considering that the road allows vehicles to pass through. In the villages studied, it was found that most of the trash cans were laid out along the main roads, that is, the direction of the main roads also determined the direction of the trash can layout, connecting each trash can, and the final line seemed to be the line after the road became thinner.

6.3. The influence of the structure of the morphological elements of the village on the layout of garbage bins
The structure organizes the elements of the village, which usually contain points and lines. It can be understood as connecting the points with the lines to form the structure of the village, and connecting the main points with the main lines to form the main structure of the village. The point described in this paper is the place where people gather relatively, and the line is the road and river of the village, so the main structure of the village is the structure formed by connecting the relative gathering place of the main people with the roads and rivers of the main village. Points affect the amount of garbage collection points and lines affect the direction of garbage collection points, so the structural plane graphics formed by connecting the points with the lines determine the layout plane graphics formed by connecting the layout at these points with the garbage collection points above the lines. Therefore, the plane figure formed by the layout of garbage collection points should be consistent with the plane figure of the main structure of the village.

7. Conclusion
According to the discussion of the influence of the form of famous tourist villages in Guilin on the layout of garbage collection points, the method of optimizing domestic waste collection points in tourist villages can be obtained. First of all, determine the main activities of the village, population gathering
points, these points because the population for a short time or long-term accumulation, so the probability of producing domestic waste is higher, the amount of domestic waste is higher, so compared with ordinary places, these points have to layout more, larger garbage collection points. Secondly, observe the main roads and rivers in the village. On the one hand, these lines are usually connected to the main activities of the village, on the other hand, only these lines or the lines next to them are allowed to pass by garbage collection and cleaning vehicles. The main roads often have to layout a large number of garbage collection points. In the investigated villages, it is found that in the linear villages, the lines formed by the main roads determine the layout direction of the garbage collection points, and the linear villages have the layout of the garbage collection points. Finally, the main structure of the village is observed, and the plane figure of the main structure determines the plane figure formed by the layout and connection of the important garbage collection points.

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