A Study of Space Composition of Park from the Perspective of Pathway and Facility in Qingdao during the Period of the Republic of China

Peiyan WANG* Jia MA* Chang SU* Toru MITANI* Junhua ZHANG*

Abstract: This study treats 8 parks in the Republic of China as research objects. According to landform differences, these parks are divided into three categories: slope, hybrid, and flat parks. The pathway and facility configurations on different slopes in different parks constitute various spaces. The sloping park is mainly with low-density pathway in linear, tree-like and circular form and single or scattered facilities, thus forming entertainment space for cultural education, physical exercise and relaxation on gently sloping land, and appreciation space for park management and forest touring on moderately sloping land. The hybrid park is mostly with linear, circular and grid-like pathway of high-density and single and scattered facilities. On flat land, there are spaces for which park management and physical exercise are major functions, with appreciation and relaxation taking an ancillary role, while on gently sloping land, there are spaces for forest relaxation and children to play. The flat park is generally with grid-like, radial and circular pathway of high-density and aligned and symmetrical facilities, thus creating relaxation and park management spaces on flat land, as well as spaces where games are the main function and rest a minor one on gently sloping land.

Key Words: Pathway, Facility, Space Formation of Park, the Republic of China

INTRODUCTION

Qingdao was the first city of leased territory in China’s modern history (1897-1914). Under the direct control of German urban planning, it was one of the earliest Chinese cities to build park and other green space as an integral component of urban planning (Zhu, 2012). In 1929, the government of the Republic of China (ROC) established Qingdao Special Administrative to extend and strengthen its urban orientation as one of the earliest Chinese seaside resorts during the colonial period and paid more attention to arranging the urban environment (Hua, 2011). On the one hand, they reconstructed original parks and woodlands in the vicinity of high-class residential areas where European and Chinese lived together. On the other hand, they re-planned and built new parks in Chinese residential areas and zones of the city’s key business districts (Zhao, 1935).

The southeast region of Qingdao is near the Yellow Sea, with Jiaozhou Bay to the west. The city is located in the winding branch of LaoShan Mountain. The park’s site is determined by the combination with features of natural landscape, such as mountains and the sea. Meanwhile, the park’s planning and design make full use of the existing land to form various types of space (Qingdao, 1997). According to the “Minutes of Public Works” and the “Records of Agriculture and Forestry in Qingdao”, park construction in the ROC established pathways to organize traffic and space, while building various facilities to create places for activities, thus the pathways and facilities were the key construction points. As the basic elements of Qingdao parks, pathways and facilities were closely related to users’ needs. This directly reflected the parks’ characters and
orientations, and took into account the pathways’ and facilities’ existing landform. This is an indispensable and important step in understanding the space and culture of Qingdao in the ROC.

Previous studies of Qingdao parks have been about construction work in different periods in regards to urban planning, economy, colonial culture (Li, 2005; Li, 2007; Li, 2012; Hua, 2011; Jiang, 2014), and plant diversity and distribution status (Zheng, 2010; Gao, 2007). However, there has been little research on park space composition, even though parks represent an important space for public activity. This paper takes park site characteristics into consideration, focuses on pathways and facilities analysis, and has the aim of clarifying the space composition characteristics of the parks in Qingdao during the period of the ROC. This study serves as supplement and
reference for the research on development of Qingdao’s modern parks as well as Chinese modern parks generally.

1. METHODS

1.1 Research objects

According to historical records (Qingdao,1935), a total of 12 parks were under construction during the period of the ROC, 8 of which were located in the key municipal construction region. The region was built in strict accordance with the urban planning policy of the ROC, with the parks construction being guided based on thorough designs and drawings and also received a sufficient financial guarantee. As the 8 parks located in the region have generally reflected the design intents and construction methods of the parks in the ROC, this study take these 8 parks as research objects (Table1, Figure1). Zhongshan Park (Figure1-1,NO.1) was located in the southwest of Taiping Mountain in the eastern suburb, while Haibin Park (Figure1-1,NO.3), Taipingjiao Park (figure1-1,NO.5) and Shanhaiqian Park (Figure1-1,NO.7) were near the Taiping Bay in the southeastern suburb. These four parks were all with rich natural landscapes and near villa areas that had a low population density. Guanxiangshan Park (Figure1-1,NO.4) and The Third Park (Figure1-1,NO.6) were surrounded by high-class residential areas and located in city centre with a relatively dense population. These six parks were all near residential areas for both foreigners and Upper-class Chinese, while NO.1, 3, 4, 6 were constructed through reforming existing parks, and NO.5, 7 were formed by developing woodlands. Zhanqiao Park(Figure1-1,NO.2) faced Qingdao Bay with a rich natural landscape in the south of the center of Qingdao city and near the Taiping business district with a high population density. Xizhen Park (Figure1-1,NO.8) was near the Qingdao Bay with a rich and natural landscape in the southwestern suburb and was near Xizhen residential area, a low-income Chinese space with a high population density. These two parks were newly-built based on re-planning of open space.

1.2 Methods

First, according to historical records, we chose the 8 parks as research objects and clarified the basic information of these parks such as construction year and area (Table1). Second, we visited the Qingdao Archives and the Qingdao Urban Construction Archives in August 2015, 2016 and 2017 for these parks’ plan drawings, landform maps, and construction descriptions respectively. Also, we drew master plans based on historical records and field investigations. Third, in terms of the key construction of pathway and facility, we took the pathway density and form as well as the facility form and configuration to analyze and sort out each park’s information. Fourth, as the 8 parks were mostly located at the foot of the mountains and along the coast, the landform that created the basic framework of park had a great impact on pathway and facility configuration. Fifth, we analyzed each of parks’ slope using GIS software and landform maps and then classified these parks into groups according to the proportional relationship of the different slopes in each park. Furthermore, we analyzed the space composition characteristics of each group, which combined the data from the pathways and facilities. Finally, we referred to the social and cultural background of Qingdao in ROC to more thoroughly understand the space composition characteristics.

2. RESULTS AND DISCUSSION

2.1 Pathway and facility

1) Pathway

(1) Pathway grade and density

After referring to notes of the pathway grade in park plan drawings as well as classifications of the pathway grade in the “Park Workbook” (Jing,2008), pathways in the 8 parks can be divided into 3 levels: the main pathway, the secondary pathway and the footpath (Figure2). In this study, there are 6 parks (No.2,4,6-8) with main pathway and secondary pathway, while only 2 parks (No.1,5) have main pathway, secondary pathway, and footpath. Considering that there are large
Pathway density and connecting form
differences in the scale of these parks, which
affects the number of pathway greatly, the present
study conducts analysis based on pathway density
which presents the pathway length per hectare. In
terms of pathway density, main pathway density
in 6 parks (No.1,3,4,6-8) is less than that of the
secondary pathway or footpath, while only 2 parks’
main pathway density exceed that of the
secondary pathway or footpath (No.2,5). Overall,
park density also shows a major difference. The
park with the lowest density is Zhongshan Park,
at only 88m/hm², while the highest is Zhanqiao
Park at 2063m/hm².

(2) Pathway connecting form and combination
Pathways of different grades have distinct
functions, with form manifesting in various
manners based on functional requirements. To sort
the pathway connecting forms of the same level,
pathways in the 8 parks can be divided into 5
forms: linear(L), tree-like(T), radial(R), circular(C),
and grid-like(G)(Figure2). In terms of combination,
while park No.8’s main pathway is a mixed
combination(R+C), the other 7 parks’ main
pathway is single combination (No.3,4,6,7: L, No.1:
T, No.2: G, No.5: C). The secondary pathway in all
parks is mixed combination, with 5 parks mixed
with 2 forms (No.5,7: T+G, No.2: L+R, No.3: T+C, No.6: C+G ) and 3 parks mixed with 3 forms
(No.1,4: L+T+C, No.8: T+C+G). There are 2 parks
with footpaths that have 3 forms of mixed
combinations (No.1: L+T+G, No.8: L+T+C).

(2) Facility
(1) Facility form
With reference to the facility form classification
in the “Park Workbook”, the facilities in the 8
parks can be divided into 7 types: landscaping, rest,
service, games, management, cultivation, and
sports (Figure3). All the 8 parks are equipped with
rest and management facilities which are mainly
composed of chair, pavilion, gate, and railing,
while 7 parks (No.1,6,8) are equipped with
landscaping facilities which are mainly composed
of flower bed, pergola and gate. Also, there are 5
parks (No.1,2,5,7) with service facilities and 5
parks (No.1,4-6,8) with sports facilities, which
mostly include toilet, parking and playground.
Meanwhile, there are 4 parks (No.1,3-5) with
cultivation facilities which mostly include
monument, aquarium and observatory. In addition,
there are 2 parks (No.5,6) with game facilities such
as sand pool.

(2) Facility configuration
The facility configuration in the 8 parks can be
divided into 4 types: single(Ⅰ), scattered(Ⅱ),
aligned(Ⅲ) and symmetric(Ⅳ) (Figure3). While
facilities of park No.4 and 7 are all of single or
scattered arrangement, facilities of park No.1, 3, 5
and 6 have mostly a single or scattered
arrangement. In addition, some rest facilities of
park No.1 and some landscaping facilities of park
No.3 have a symmetric arrangement, while some
rest facilities of park No.5 and some rest and
landscaping facilities of park No.6 have an aligned
arrangement. Furthermore, almost all facilities of
park No.2 are aligned and symmetric with a mixed
arrangement. Moreover, the facility configuration
of park No.8 is the most varied, featuring all
possible arrangement types.

2.2 Park space composition characteristics

The 8 parks are mostly located at the foot of the mountain and along the coast. As the basic framework of park, the landform plays a decisive role in the configuration of pathways and facilities. Referring to “Landscape Architecture Engineering”, the slope of the 8 parks can be divided into 4 types: flat land (slope\(\leq 4\%\)), gently sloping land (4%\(<\)slope\(\leq 10\%\)), moderately sloping land (10%\(<\)slope\(\leq 25\%\)) and steeply sloping land (slope\(> 25\%\)) (Figure 4). The proportion of flat land in Zhongshan Park, Haibin Park and Guanxiangshan Park is below 5%, while moderately sloping land accounts for 50%, thus classifying the three parks as sloping parks. The proportion of each slope type in Taipingjiao Park, Shanhaiguan Park and The Third Park accounts for 20-30%, meaning the three parks have been grouped into hybrid parks. The proportion of flat land in West Town Park is almost 90%, while Zhanqiao Park is completely flat, thus defining both as flat parks.

1) Sloping parks

In terms of sloping parks (Figure 5), the main and secondary pathways in park No.1 and 3 are predominantly distributed across gently sloping land and moderately sloping land, both of which account for over 40%. The footpaths in park No. 1 are mostly distributed across gently sloping land, which accounts for over 50%, while the main and secondary pathways in park No.4 are mostly distributed across moderately sloping land, accounting for about 70%. The pathways in all three parks are very weakly distributed across flat land and steeply sloping land, accounting for about 10%. Moreover, pathway density in each park is below 200m/hm², and main pathway density is less than that of the secondary pathway or footpath. Furthermore, the main pathway is a single combination (L/T) by which the main entrance and scenic spots are connected, as for the main pathway in the southwest portion of park No.3 directly guides tourists to the park’s interior space through a concise linear form (Figure 1-2,A). The secondary pathway is of various mixed combination (mostly L+T+C) by which main pathways and landscape nodes are connected. As the secondary pathway in park No.4 connects the whole park in a linear, tree-like, and circular form, it creates plentiful touring routes for visitors (Figure 1-5,A). Additionally, the footpath of park No.1 is a mixed combination (L+T+G), which further connects the park’s landscape nodes.

Landscaping, rest, management and cultivation facilities are all present in sloping park (Figure 5). As a whole, the landscaping facilities (100%,75%,100%), rest facilities (86%,86%,67%) and cultivation facilities (89%,54%,23%) of all three parks are mostly distributed across gently sloping land, while management facilities (67%,41%,75%) are mainly distributed across moderately sloping land. In addition, the sports facilities of parks No.1 and 4 are all distributed across gently sloping land, while the service facilities of park No.1 are evenly distributed across gently sloping land and moderately sloping land (Figure 5). Moreover, facility configuration is dominated by single and scattered arrangement with only two elements (No.1: chair, No.3: flower bed) configured in a symmetrical arrangement. Among them, the pergola and flower bed are primarily used to improve the space’s aesthetic, as the pergola in the southern part of the north-south main pathway of park No.1 (Figure 1-1,A) haverichen the landscape’s vertical hierarchy. Additionally, combined with the landform, cultural education activities are carried out by using the cultivation facilities such as aquarium and observatory, including the aquarium in park No.3 (Figure 1-2,B) which is located on a cliff edge, which creates a highly visible cultivation space. Meanwhile, the rest facilities including chair and pavilion create relaxation space while the management facilities containing railing, management house and dormitory mainly facilitate the management functions of the park.
Based on the above data, it can be shown that pathway and facility distribution differs greatly according to the landform. As a whole, the gently sloping land with mild slopes and a large area have relatively large pathway proportions as well as landscaping, rest, cultivation, and sports facilities are mainly distributed on this slope. Meanwhile, according to the records of Qingdao Agriculture and Forestry areas with gently sloping land are largely covered with artificial vegetation, such as nurseries or block shrubs. Near the vegetation, facilities of single or scattered arrangement, such as pergola, chair, aquarium and playground, are connected by pathway, thus forming entertainment space which tourists can use for cultural education, physical exercise and relaxation of artificial landscapes. As for park No. 4 (Figure1-5,B), the path is covered by shrubs and equipped with chair and pergola, which creates appreciation and relaxation space for overlooking Qingdao’s appearance through the combination with the landform. This arrangement starts from the secondary entrance in the northwest and while walking along the secondary pathway, the north side has a broader vision. In terms of moderately sloping land with intermediate slope and the largest area, this is where the largest pathway proportion is, and the management facilities are mainly distributed on this slope, as well as a small number of cultivation and rest facilities. Meanwhile, according to the records of Qingdao Agriculture and Forestry, areas with moderately sloping land are mostly covered with natural forest and trees, in which single and scattered chair and aquarium are distributed with pathway, thus creating walking space surrounded in forest as well as forming space for cultural education and relaxation. Moreover, dormitory and management house are distributed throughout, thus separating from the play area on gently sloping land. as for park No.1 (Figure1-1,B), the east and north sides of the park are covered by thick trees, and the pathway twists and turns in combination with the landform to appreciate the forest. Meanwhile, the scattered dormitories are located on the secondary pathway in the east, surrounded by dense forest and are far away from the park’s center, which ensures the smooth operation of park activities without compromising the park’s aesthetic. In addition, due to the small area of flat land, there are a small number of pathways, gates, railings, and other facilities with the area’s artificial vegetation which are combined to create walking space. However, although there is an area of steeply sloping land, the distribution of pathways and facilities across it is minimal due to the steepness of the slope and forest landscape is combined to create walking space.

Overall, sloping park is equipped with low-density pathway which is linear, tree-like, and circular while they are also single or scattered in landscaping, rest, cultivation, sports, and management facilities on gently sloping land, which form entertainment space used for cultural education, physical exercise and relaxation of artificial landscapes. On moderately sloping land,
space is mainly used for park management and forest touring. However, on flat and steeply sloping land, there is a few walking spaces (Figure 6-1). During the period of the ROC, Qingdao’s urban orientation underwent further changes to its seaside resort and sightseeing district, with three sloping parks which included the "Qingdao Ten Views". As these parks were all located near the advanced residential area for both European and Chinese, the government strengthened the construction facilities for leisure, entertainment, culture, and sports to meet the activity demands of surrounding people and to attract tourists. This could be regarded as the main reason for slope parks to be equipped with landscaping, rest, cultivation, and sports facilities. In addition, considering with the overall slope landform and the ecological and economic benefits brought by green spaces, the government issued the "Qingdao Urban Planning Case" which emphasized the need to protect and utilize forests. This case can be regarded as the main reason for slope parks to be equipped with low-density pathways and scattered facilities. The sloping parks share similar characteristics due to the similarity of slope, municipal policy, surrounding land property, and users. However, there are several differences in pathway and facility configuration. It can be considered that due to the small scale of the NO.3, 4 park, the pathway grade and form as well as the facility amount and type are limited, thus resulting in the increase of pathway density to create diverse walking space. Whereas, due to the large scale of the NO.1 park, the pathway grade and form as well as the facility amount and type increase leading to the development of low density pathway to meet the users’ need.

2) Hybrid parks

In the three hybrid parks (Figure 5), main pathway of parks No. 6 and 7 are mostly (about 70%) built on flat land. The main pathway of park No. 5 is mostly (nearly 40%) built on gentle sloping land, while the footpath is mostly (nearly 40%) built on moderate slopes. The secondary pathway in the three parks is mostly (40%-60%) built on gently sloping land. Only a few pathways of various levels in the three parks (about 10%) are built on steeply sloping land. Overall, pathway density in each park is about 400-500m/hm². The density of main pathway in parks No. 6 and 7 is lower than that of the secondary pathway, while the density of main pathway in park No. 5 exceeds that of the secondary pathway and footpath. The main pathway is single linear or circular in form, and connects the main entrance and scenic areas. As for the main pathway in park No. 6 (Figure 1-3, A), it is a twisted linear form that enables tourists to have a better view of the landscape when entering the park. The secondary pathways are all of various connecting forms and are in mixed combinations of grid-like, tree-like, and circular. As for pathways in park No. 5 (Figure 1-4, A), they cover the whole park with grid-like and circular connecting forms which creates various touring routes. In addition, park No. 5 has footpaths in mixed linear, tree-like, and circular configurations. They extend to coastal reefs and provide tourist experiences.

The hybrid parks (Figure 5) all have facilities for rest, management, and service. The rest facilities are evenly distributed across flat land (23%, 19%, 32%) with both gently (39%, 38%, 40%) and moderately (22%, 38%, 24%) sloping land, while the management facilities are all distributed across flat land and the service facilities are mostly distributed across gently sloping land (62%, 100%, 100%). In addition, parks No. 5 and 6 have sports facilities, which are mostly distributed across flat land. Parks No. 6 and 7 have landscaping and games facilities, which are mainly distributed across gently sloping land. Park No. 6 has rest facilities, which are all distributed across moderately sloping land. Generally, the facilities are configured in single and scattered forms, with aligned configurations serving as exceptions in the form of chair in parks No. 6 and 7. The parks use rest facilities such as chair and pavilion to create relaxation space. As for the pavilion in the middle of park No. 7’s south side, it is located on a cliff edge and forms rest space (Figure 1-3, B). Those parks within the gates maintain parks’ management functions. As for park No. 5, it has
two gates at entrances on Zhanshan Five Road, which controls and guides movements of visitors(Figure1-6,A). They also have service facilities like toilet and parking to assist visitors.

The areas occupied by the four varieties of slope in the three hybrid parks are relatively similar in size, but their pathway and facility configurations are different. On flat land, there are major components of main pathway, all the management facilities and most of the sports facilities. Moreover, there is also a small amount of facilities for rest and landscaping. According to "Qingdao Agriculture and Forestry", the plants on flat land are mostly natural forest trees. In the woods, pathway connects single and scattered facilities like gate, playground, chair and flower bed to create appreciation and relaxation space dedicated to park management and physical exercise. As for park No.6(Figure1-4,B), it has a gate at its main entrance to the north, one which emphasizes the entrance space and effectively organizes crowds coming and going. After having entered through the gate and passed through the dense woods, a circular runway at the end of the linear main pathway is visible and a square sports stadium is located in the area enclosed by the runway, which creates space predominantly dedicated to sports. Along the stadium's southeast border, there are pergola, pool and fountain, which enhance the space's landscape value. On gently sloping land, there are more secondary pathways with almost all of the service as well as game facilities. Additionally, there are some facilities for rest, landscaping, and sports. Like flat land, the plants on gently sloping land are mostly natural forest trees. In cooperation with the natural woods, the facilities such as flower bed, chair, toilet and sand pool are mainly in single or scattered configurations and are connected by the pathways, creating relaxation space specialized for children. As for the secondary pathway in the northern most part of park No.7 (Figure1-3,C), it gently stretches to the east and west, and along the entire coastline, and the chairs are aligned and scattered in configurations that can be found to the north of the secondary pathway. Meanwhile, this pathway extends to the north and south, meeting the flower beds in aligned and scattered configurations located in the northern part, thereby creating appreciation forest space. In addition, there is a small proportion of the total number of pathways, less rest facilities, and landscaping facilities that are on moderately and steeply sloping land. They work with forest lands to create relaxation forest spaces.

Overall, hybrid parks are mostly involved with linear, circular, and grid-like pathway of high-density as well as facilities which are in single and scattered configurations. On flat land, there are places for which park management and physical exercise are the major functions, with appreciation and relaxation taking an ancillary role. On gently sloping land, there are spaces for forest relaxation and children to play. On the moderately and steeply sloping land, there are a few recreational spaces (Figure6-2). All three hybrid parks are located near high-class residential areas where European and upper-class Chinese people live together, with residents nearby being the main visitors. The most likely reason why these parks built multiple facilities for recreation, sports and children's entertainment was that they wanted to meet the demands of the upper-class residents for multi-functional spaces.
Among the three hybrid parks, No.5 and 7 were developed on woodlands. Park No.6 was constructed through reforming existing parks. Single and scattered facilities are conducive to the preservation and utilization of the original vegetation. It is likely that this is because of the policies regarding woodlands protection and utilization in the "Qingdao Urban Planning Case". Compared with the sloping parks, the proportion of flat-gentle slope landform increases, which can be considered as the reason for the relatively high pathway density. Hybrid parks have similar characteristics due to the similarity of slope, municipal policy, the surrounding land property and the users' need. However, there are certain differences in terms of the pathway and facility configuration. Similar to the slope parks, relatively large-scale parks have more pathway grades and forms, but also have a low density. In terms of the facility configuration, the NO.5 park has larger scale but less of a facility amount and type, which could be attributed to the nearby small-scale Taipingjiao villa area with less users. Whereas, the NO.6 park is located in urban center with high population density, and the NO.7 park is near the relatively large-scale Badaguan villa. Similar to the nearby bathing beach, these parks have more facility amount and diverse facility types but are on a smaller scale, as well as have a larger amount of users.

3) Flat parks

In the two flat parks(Figure5), there are no changes in landform. Park No.2 was built on flat land and the pathway was evenly distributed. Park No.8 was built on flat land and gently sloping land with the ratio is about 9:1, while the distribution proportion the main pathway to secondary pathway on the two types of slope is also about 9:1. Overall the pathway's density is in excess of 1000m/hm², much higher than that of the above two types. In park No.2, the main pathway density exceeds that of the secondary pathway. The main pathway goes across the park in the connection to form a grid-like system, while the secondary pathway are connected to form linear and radial pathway, which assists main pathway to connect to various facilitates. In park No.8, the secondary pathway density exceeds that of main pathway. The main pathway connects the whole park in radial and circular, while the secondary pathway connects the scenic nodes in tree-like, circular and grid-like form.

The flat parks(Figure5) all have facilities for landscaping, rest and management, and these are predominantly distributed across flat land. Additionally, about 10% of the rest and management facilities in park No.8 are located on gently sloping land. The facilities configurations are mostly aligned, symmetrical and single, with one facility in the scattered configuration (No.8: pavilion). The landscaping facilities like flower bed and pergola enhance the ornamental value of spaces, as for there are symmetric flower beds in symmetrical and aligned configurations throughout the park No.2(Figure1-7,A), creating a large area of landscaping space. The rest of the facilities such as chair is for relaxation, as for the chairs in park No.8(Figure1-8,A) are in aligned and symmetrical configurations along the radial main pathway and they create the park's main relaxation space. The management facilities are mostly gate and railing, which ensures the parks' management functions are carried out. Furthermore, park No.2 provides service facilities like parking and toilet on flat land, while park No.8 has game facilities on gently sloping land which includes a children's play area. Since flat parks are wholly built on flat land, the diverse types of pathway, landscaping, management, and service facilities are all located on flat land. Facilities such as flower bed, chair, railing and toilet of single, aligned and symmetrical configurations are connected by highly dense pathway. This creates a relaxation space for recreation and park management, where tourist convenience also stressed. As for the western space in park No.2 (Figure1-7,B), it is mainly formed by symmetric flower beds which are separated by a grid-like main pathway and enclosed by railings, and they go along the north-south axis. They are also symmetrically configured, with the chairs arranged in aligned and symmetrical
configurations matching the flower beds. Meanwhile, the pergola can be found to the south of the flower beds, near the coast, which enriches the vertical hierarchy of the landscape. Moreover, parking and toilets are located on the park’s western corner and are separated by railings from the east, thus creating a relatively independent relaxation and service space. On its gently sloping land, park No.8 (Figure 1-8.B) has a small number of pathways and rest facilities, and the game facilities are all distributed on this slope. The quadrilateral play area for children is enclosed by a secondary pathway and is located on the northeast of the park. Moreover, geometrical lawns surround the playground. The chairs on the lawns are arranged symmetrically along the playground’s borders to form a space where games are the main function and rest is a minor one.

Overall, most flat parks are with grid-like, radial, and circular pathway of high-density, that also have aligned and symmetrical landscaping, rest, management sports and service facilities, thus forming relaxation and park management spaces. They also create game and rest spaces as a minor area (Figure 6-3). During the period of the ROC, the government began paying attention to balancing land use distribution in parks. To solve the problem of unbalanced green space distribution, the government built the above two flat parks on open land along the coast. The park No.2 is located near the bustling commercial area, while the park No.8 is located near the densely populated residential area where less affluent Chinese citizens live. The parks were mainly equipped with facilities for landscaping and rest, aiming to meet the leisure demands of business people on one hand and on the other hand because of the times, diverse entertainment culture was not popular among the less affluent in China, meaning the parks provided simple relaxation spaces for both groups. Meanwhile, there are a large number of people who visit the parks, even the smallest one with overall flat landform, that can be considered as the main contributing factor to the low type facilities but high-density pathways. The configuration of facilities are supposed to be in order. This, combined with high density pathway, effectively organizes traffic and facilities utilization of the space. The flat parks generally show similar characteristics due to the similarity of slope and the users’ need. However, there are certain differences in terms of pathway and facility configuration influenced by the scale of park. As a whole, the flat parks are similar to those of the sloping parks, which have higher facility amount and diverse pathway form in relatively large-scale park, but the density of the pathway is smaller.

CONCLUSION

This study categorized 8 parks constructed during the period of the Republic of China into three types according to the differences of their slopes, including sloping parks, hybrid parks, and flat parks. It is found that the configuration of pathway and facility is closely related to slope. With the increase in the proportion of flat-gentle slope landforms, the density of pathway gradually increases, the tendency of grid-like pathway connecting form becomes more apparent, and the configuration of facility changes from scattered and single type to aligned and symmetrical type. In addition, the configuration of the pathway and facility is closely related to the surrounding land property and the users. The sloping parks are located near the residential areas for European and Chinese high-class people. This group of people are rich in life and have plenty of leisure time. At the same time, park planning is influenced by European and Chinese high-class people as it is easy for them to have access to western culture that flowed into in that period and to integrate western entertainment facility. As the “Qingdao Ten Views” shows, these three parks are created to attract tourists, thus they develop recreational, cultural, sports facility, and other western entertainment facilities as well as local cultural facilities. The hybrid parks are also located near the residential areas for both European and Chinese high-class people whose lifestyles are also more western-like. Compared to
the sloping parks, the proportion of flat-gentle slope landforms in such parks is relatively large and easy for constructing various entertainment space with recreation, sports, and children’s entertainment facility. One of the flat parks is located near Chinese poor residential area where people mainly have a tough life and have less leisure time, thus making the demand for multi-functional entertainment facility relatively low, while the other park is located in the business district which is mainly used by visitors with spare time, thus making the demand for recreation and relaxation facility increased. At the same time, the park’s scale has a certain influence on the configuration of the pathway and facility as well, that is, with the increase of the scale in the same type of the parks the density of parkway decreases and the amount and type of pathway and facility goes up. As a whole, the combination of the slope, the scale, the surrounding land property, the users’ life quality, and the people’s using forms create different types of space. Although the 8 parks were built earlier in China, they can be considered as the green space prototypes that are designed based on characteristics of the site and the demands of the park users. As the parks were built long ago, the remaining materials cannot fully indicate the planting status in the parks at the time. Therefore, the purpose of the study is to clarify the compositional characteristics of parks on different slopes in terms of pathway and facility as well as to explore the relationships between the parks’ compositional elements and their geographic conditions. Future research will extend beyond the park green spaces, examining natural landscapes such as mountains and the sea in an effort to clarify the relationships between green spaces and the surrounding environment.

NOTE
1) According to the “Minutes of Public Work”, with the political status stabilization of the ROC, the urban orientation of Qingdao transformed into seaside resorts and tourist city, based on which, the government issued the “Scheme Draft on Urban Planning of Qingdao”, mainly conducting environment reorganization of the south seaside areas and the downtown areas where European and Japanese formerly inhabited.

2) Figure 1—1: Drawn based on the street map of Qingdao (1:50000) (1935) and plan of the greater Qingdao (1:50000) (1935) in Qingdao atlas (58pp). The park plans and topographic maps are all from Qingdao Urban Construction Archives, Figure 1—2: Drawn based on the plan and topographic map of Zhongshan Park (1:1000) (1940); Figure 1—3: Drawn based on the plan and topographic map of Haibin Park (1:1000) (1936); Figure 1—4: Drawn based on the plan and topographic map of Shanhaiguan Park and the second bathing beach (1:500) (1934); Figure 1—5: Drawn based on the design drawings and topographic map of the third Park (1:500) (1934); Figure 1—6: Drawn based on the plan and topographic map of the Guanxiangshan Park (1:1000) (1932); Figure 1—7: Drawn based on the configuration diagram and topographic map of the Taipingjiao Park (1:1000) (1935); Figure 1—8: Drawn based on the plan of Zhanqiao Park (1:500) (1936).

3) In order to raise the urban attraction and tourist population, “Qingdao Ten Views”, which included three parks, three architecture groups, two tide watching spots and two flower watching spots, was developed relying on the government organization and citizen engagement.

REFERENCES