Drainage Ditch Management Based on Urban Landscape Ecological Construction- Take the Drainage Ditch of Lanzhou City as an Example

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Abstract: Lanzhou is an important transportation hub in the western region. It belongs to the economic and cultural center of the western region. The two mountains of the north and south of the city of Lanzhou, the Yellow River flows through, forming two mountains and a river of the city pattern. Based on the urban ecological perspective, this paper expounds the current situation of the ecological construction of the north and south of Lanzhou and the impact on the urban landscape ecological environment. At the same time, based on the concept of sponge city and landscape construction, the status quo of drainage ditch in Lanzhou are analyzed, and this paper puts forward the blend in Lanzhou history cultural treasures "waterwheel" with the function of drainage network channel construction, and irrigation technology with mills ditch to transport to the top of the mountain and water catchment system, which not only can solve the two mountain greening projects, can also be the inner layer of Lanzhou city landscape ecological construction of culture.

1. Introduction

As a city of loess plateau, lanzhou has formed the main axis of urban landscape with the Yellow River flowing from west to east, and the numerous flood discharge gullies on both sides of the Yellow River running from north to south have also become the ecological water corridor of lanzhou city. The drainage ditch plays a vital role in building a green and ecological city. However, we pay more attention to the greening construction on both sides of the Yellow River, and neglect the improvement and utilization of many flood discharge gullies in the north-south direction.

Drainage ditch construction is an important part of urban construction. However, many drainage ditches in lanzhou have no protection, less afforestation and damage to the surrounding environment. At the same time, the rapid development of the urban construction to promote urban land increasingly nervous, causes the owner landfill having blind ditch and construction of buildings, thus having ditch the normal utilization of decline, thus the situation of having large section, low water, and these phenomena seriously affect the discharge capacity of FangHongGou. In lanzhou city in recent years, therefore, in case of rain, when the road is not well drainage, having groove and neglected the effect of, it brings the problems such as the spread of urban flood, these problems are based on some have no sense of security, don't know how to respect nature, blindly pursuing economic benefits and destroy the ecological balance of the owner. Should stop as soon as possible so as to strengthen the protection of natural drainage system and the maintenance of city safety consciousness, reasonable use and having groove can change the city appearance, to improve the lining of the lanzhou city ecological construction and promote the sustainable development of the city.

2. The Significance of Lanzhou Landscape Ecological Construction

Ecological culture refers to the traditional way that people create spiritual wealth to express garden space [1].Ecological landscape culture is an important part of urban culture, is the social culture, the accumulation of human culture, precipitation, continuation, development and innovation, the construction of landscape culture inevitably influenced by the historical tradition and natural

environment, and many other city's comprehensive cultural factors [2-4].The construction of an "ecological city" requires the harmonious progress of society, the efficient operation of economy and the virtuous cycle of ecology. Its construction approach is to promote the coordinated development of society, economy and nature through the implementation of the strategy of ecological city, and finally realize the fundamental goal of harmonious development between man and nature.

Although lanzhou has a pattern of "two mountains and one river", it has certain advantages in landscape ecological construction. However, due to the lack of vegetation due to human and natural factors and the lack of rain due to drought, the pattern of "two mountains and one river" cannot be fully utilized. However, the utilization rate of water resources in lanzhou is not high in the Yellow River basin, accounting for one quarter of the national utilization rate. The annual average precipitation is 327 mm, mainly from June to September. A large number of water resources are lost because they are not used in time. At the same time, the air pollution in lanzhou is the most prominent problem in lanzhou's urban ecological environment. Therefore, the construction of landscape eco-city is the future trend of lanzhou's urban development. To build lanzhou's ecological civilization, we must make full use of the water resources of the Yellow River to realize the harmonious development between man and nature. Only by fully utilizing and highlighting the historical and cultural characteristics while respecting the natural characteristics of cities can the historical and cultural characteristics of cities become more distinctive and more conducive to the sustainable and coordinated development of cities.

3. The Construction of a Green Ecological System for Lanzhou Drainage Ditch Water Landscape

3.1 Reconstruction of drainage ditch

Lanzhou city east having ditch Huang Heqiao SangYuanXia baolan railway, west to the mouth of an railway Huang Heqiao, south to the seven beam is bounded, a line in the shop - sweet home in northern beach, what about 60 km area is the outlet of the clear, the basin area of 0.3 km2, serious damage in having channel 99.Of these, 60 are north of the Yellow River and 39 are south of it.The total length of the main ditch basin is 745.11km, and the total water area of the basin is 2 041.46 km2[5].Due to complex topography condition, lanzhou existing having groove most area of less, slope surface and bottom surface form of irregular shape, ditch sedimentation is serious, flood discharge section is small, szanda coherence is not unobstructed, due to sedimentation, szanda bottom elevation above the nozzle, prone to flood flow backward. Some areas of the drainage ditch has been covered, forming some facilities for urban construction, seriously affecting the discharge capacity of the drainage ditch. According to the regional characteristics of lanzhou city, these drainage ditches have obviously become the basis of the layout of flood control and drainage in lanzhou city. The layout and direction of these drainage channels should be respected and the phenomenon of encroachment and destruction should be eradicated.

In the reconstruction of the drainage ditch, some unnecessary facilities should be dismantled, the land should be widened, the protection green area should be expanded, and the direction of the drainage ditch should be extended. Choose the city's main location having ditch, combined with the surrounding green space, park road, natural infiltration of pavement construction of underground recycled small perched water systems can provide water for the surrounding green space; According to the direction of the drainage ditch, the water storage function of the drainage ditch is increased, the underground pump house and the mountain greening sprinkler irrigation system are constructed, and the water storage in the rainy period is utilized, and the water pumping adjustment after the rain is carried out for the mountain greening irrigation. The reasonable reconstruction of the drainage ditch will reduce the probability of urban waterlogging, maintain the security of the city, and build the green ecological corridor of the city by constructing the landscape, so as to promote the sustainable development of the city.

3.2 Integration of landscape

Lanzhou is an ancient cultural city with a long history. It is an important cultural town on the Silk Road and has rich historical and cultural heritage. In the Ming dynasty, southern drum car manufacturing technology was introduced into the northwest region, and a large water truck began to stand on the Yellow River in lanzhou, gansu province.Ming jiajing jinshi, lanzhou people continue using his chances of an official in the south, meet local made of bamboo TongChe, can use the force of the water, the lower river streams, irrigation field to high places, for he touches is very big. Therefore, I decided to build a water truck to solve the problem of low water level and high land height in lanzhou, and the land along the bank was suffering from drought but could not be irrigated [6].At the end of qing dynasty, there were more than 150 water trucks. With the development of industrial and agricultural construction, farmland irrigation in lanzhou replaced by electric power tools, all in one year, records the lanzhou people's work and production history of bright wisdom growth, almost all was light.In the qing dynasty, ye li's poem "gansu zhuzhi ci" also had a poem about lanzhou waterwheel, which said: the water wheel rotates from cycle to cycle, the snow turns over the silver nine axis limit[7].

Nowadays, lanzhou waterwheel park is built near zhongshanqiao, just to allow Chinese and foreign tourists to enjoy the unique charm of lanzhou landscape. Water wheel as a cultural treasure in lanzhou, lanzhou people can fully reflect the unadorned beauty life values, and show the spiritual civilization construction of the city, but the unbalanced development of regional economy, let lanzhou many people have forgotten this precious cultural heritage, should take advantage of these historical and cultural heritage will be the more rich, more bright Yellow River style line.

In addition to the Yellow River on both sides of the green, numerous north-south having ditch, also build the style line of the Yellow River ecological water corridor, at the same time in the regulation and governance of the waterwheel is blended in among them, can not only create more rich style line of the Yellow River landscape, but also in lanzhou waterwheel spirit heritage.

4. Afforestation of north and south mountains

Lanzhou has a special geographical, geomorphologic and climate. Although it is near the mountains and rivers, it is dry and rainy all year round, with little natural vegetation, mainly weeds and shrubs. Especially in winter, a dry yellow scene has seriously affected the image of the city.To further improve the current ecological environment of lanzhou, it is necessary to increase the city's greening work, create a green ecological environment for mountain and forest, and give full play to the multiple benefits of mountain and forest. However, the emphasis of afforestation should be placed on the two mountains in north and south, and on the basis of following the natural mountain greening, the landscape theory should be fully applied to give full play to their ecological benefits.

4.1 Selection of tree species

Two mountains in the north and south of the choice of tree species, mainly using native tree species. While protecting the existing vegetation, evergreen plants can be selected for artificial planting, as well as plant landscapes that can highlight urban image, topography and local characteristics in mountain planning. A mixed landscape forest can make lanzhou a real green forest.

4.2 Construction of water-saving landscaping

Water-saving garden green space is the scientific analysis of the urban environment conditions, using the most efficient investment and technical measures and construction can maintain the late maintenance management of the minimum cost of resource consumption and investment, and long-term and continue to gain maximum ecological, landscape, social services and other comprehensive function of green space [8].

The mountain greening system mainly USES the water vehicle irrigation technology to transport the water storage from the drainage ditch to the water collection system at the top of the mountain,

so as to solve the greening project of north and south mountains. The system for collecting water seepage irrigation was built at the top of the two mountains in the north and the south, and the pumping stations under the two mountains were constructed at the mountainside. The rainwater in the reservoir is transported to the top of the seepage irrigation collection system by the water truck built in the drainage ditch under the mountain through the water pump. This kind of rainwater harvesting project can achieve the efficiency of water resource recycling when it is used for mountain green sprinkler irrigation.

Water cost is an important economic expenditure in daily garden maintenance, which increases financial expenditure. The construction of water-saving garden green space can not only save water, but also reduce the use of tap water. At the same time, the establishment of a rainwater collection and utilization of water system, not only can effectively reduce the soil and water loss caused by surface runoff mountain, also can prevent the artificial irrigation water, uneven, inadequate or excessive, not in time to the mountain vegetation died.

The concept of lanzhou sponge city A sponge city, is a city to be able to adapt to environmental changes and respond to natural disasters has flexibility, like a sponge absorbing water permeable reservoir water when it rains, the rainwater release to take advantage of its subsistence when necessary. Permeability, hysteresis,, net, use, storage and other measures, by means of source reduction, means of transmission, the end of the sequence, halfway to minimize the impact on the ecological environment, 70% of rainwater in situ given goal[9].

In recent years, the heavy rain in lanzhou has caused a lot of water to accumulate in many ground sections, which has led to many vehicles soaking in water and caused great inconvenience to residents' normal travel and life. In some places, roads have collapsed and even created "sea holes". Lanzhou is a great shortage of the produced water, and uneven distribution, the city water resources per capita is only 742 cubic meters, far below the national average, about 327 mm, annual average rainfall evaporation is 1500 mm, and rainfall has the characteristics of short-term focus again. The construction of sponge city land is of great significance to such a city which is dry and prone to water accumulation due to heavy rain.

5. The concept of Lanzhou Sponge City in Three Parts

On the basis of sponge properties of city construction, can be effective control of surface runoff of lanzhou, lanzhou city has a special terrain, can draw lessons from the successful cases of sponge urban construction methods, such as ways to slow the progress of the urban green space slope, to effectively extend the distance of the surface runoff flows, can effectively reduce surface runoff on slope surface erosion, surface water infiltration, reduce runoff formation [10].

In the building of the city, the area of the road to take up in traditional urban area has a large proportion, can reach 10% 25%, building used by traditional road pavement material quality is not up to standard, is the main factor causing rain penetration ability. Shop is in the process of the landscape, can use the permeable pavement, on the one hand, effectively increase the penetration of rain, on the other hand, use the permeable concrete step by step instead of the residential area, park roads, parking lots of pavement material, make the rain of osmotic quantity increase gradually, gradually reduce the surface runoff, and at the same time, the rain infiltrate into underground flow into the underground reservoir, complete the stored procedure, and then on into the waterways and replenish groundwater water purification, water pollution degree was greatly reduce [11].

Improve the water storage function of the drainage ditch to regulate and store the rainstorm runoff. Respect the layout and direction of the drainage ditch, eliminate sewage pollution, regularly dredge the bottom of the ditch to ensure that there is no water standing in the bottom of the ditch and that the flood or rain water can pass through in time.At the same time, a large ecological park will be built in the surrounding area. Through the connection of buried pipes, rainwater will be channeled into the stagnant water equipment of the surrounding park, forming a small stagnant water wetland. Mountain rainwater collection system is established, irrigation technology will having mills ditch to transport to the top of the mountain and water catchment system, extend the time of the rain into the Yellow River, not only can effectively solve the problem of rainwater

infiltration, can effectively purify rain, provide water to the surrounding landscape.

6. The Significance of the Construction of a Green Ecosystem in Lanzhou Drainage Ditch Water Landscape

With the development of lanzhou city in recent years and evolution, the deepening of the urban ecological civilization construction, the construction of landscape culture and the connotation has been greatly enriched and expanded, the landscape culture construction has been the subject of lanzhou normalized in the construction of ecological civilization. On having ditch, however, to build a waterwheel, on the one hand, water wheel side is the lining of the historical and cultural landscape heritage, at the same time, and to make history cultural heritage, enrich the landscape of the Yellow River style line administrative levels.On the other hand having groove on the construction of a water wheel can strengthen water transport management, improve the utilization of water resources, reduce the waste of water resources, water saving technology is used to analyse the city mountain irrigation, presents a kind of special mountain greening patterns.

The construction concept of sponge city can be used to reduce the probability of waterlogging in lanzhou through the absorption and utilization of rainwater in the integrated construction of flood drainage ditch.At the same time, the ecological water corridor and the historical and cultural heritage for the integration of ecological landscape, the beautification of the Yellow River on both sides, and can better improve the two mountain mountain greening environment, constitute the ecological culture of the city, also can bring new development to the city space.

7. Conclusion

Green ecosystem not only has very important ecological function, but also is closely related to lanzhou's environmental quality and people's life quality. For people living in lanzhou, the ecological garden scenery of "mountains in the city, cities in the water, people in the garden and mountains and waters blend" is the "livable" environment that people have been yearning for. Therefore, the construction of a green ecosystem integrating the water landscape of lanzhou drainage ditch will inject new vitality into the development of lanzhou city, an ancient city for thousands of years.

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