Planning and Design of Shifang Lvtaikang Agricultural Ecological Park

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Abstract: Agricultural Ecological Park is the trend of modern agricultural development. The design is based on the theme of natural, ecological, green and health, it introduces the planning and design of new comprehensive agricultural farms such as entrance area of Shifang Lvtaikang Agricultural Ecological Park, the recycling green ecological environment animal husbandry area, organic vegetable growing area, ecological fruit forest area, agricultural science education practice base, private customization base and so on. The aim is to provide reference for the planning and design of other ecological farms of the same type.

1. Introduction

The agricultural ecological park is the trend and direction of modern agricultural development [1]. Relying on the original environment, ecology and other elements of the park, the park land and production capacity can be used efficiently to achieve greater benefits [2-4]. The planning and design of the Shifang Lvtaikang Agricultural Ecological Park has played a leading role in creating a new type of comprehensive agricultural farm.

2. Project background and conditions

Shifang Lvtaikang Agricultural Ecological Park Project is located in Shigu Town, Shifang City, Sichuan Province, 15 kilometers away from the county seat. The park has a land area of about 82.37 acres and a total investment of 8 million. It is intended to be a new comprehensive agricultural farm integrating modern leisure, sightseeing, experience and consumption with the theme of natural, green, environmental protection and health.The project is based on the “one axis, two networks, three districts, two bases“ master plan, which mainly includes the recycling green ecological environment animal husbandry area, organic vegeTable growing area, happy farm demonstration area, ecological pig base, native chicken propagation field, agricultural popular science education practice center and so on.

3. Planning principles

The principle of ecology, the basic principle of creating a quiet, suiTable and natural production and living environment without destroying the local natural environment [5].

The principle of economy, making full use of local materials, reducing the cost of materials and saving costs in the agricultural sightseeing system, including greenhouse seedling, nursery display and so on [6].

Participatory principle, improve tourists' active participation and experience, and personally experience the process of all kinds of plant production and cultivation in the park [7 -10].

The principle of diversity, focusing on the horticultural plant planting industry, while enhancing production efficiency, provides tourists with a variety of ways to participate in the experience in order to enhance the competitiveness of the park [11 - 15].

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4. Park planning and design

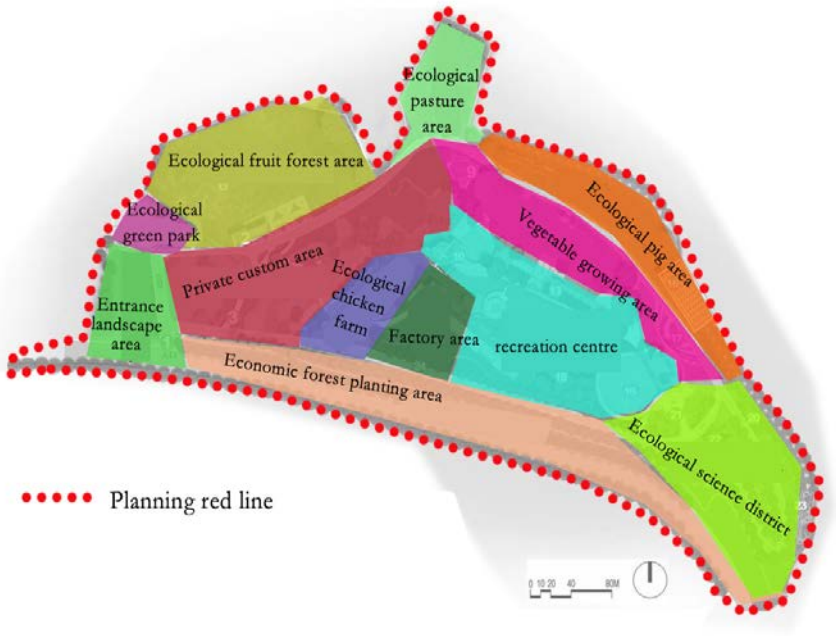

Figure 1 Park planning red line chart

4.1. Entrance area

4.1.1 Road requirements

Taking Yingbin Avenue as the planning and positioning requirement, the road is 8.5 meters wide and the drainage ditch is 0.5 meters. The design requirement is that the middle road is planned to be 5 meters wide. The green belt with a width of 1.5 meters is set on both sides. The green belt is cut off by road teeth and planted blue. Flower buds and ginkgo are the street trees, which are mainly used for flower and shade in spring and summer, and for street trees in autumn and winter.

Figure 2 entrance renderings

4.1.2 Slope greening

The green slope of the entrance slope is designed as a double-slope landscape. The slope is turf or cement hardened. The upper part of the slope is a strong white birch forest. It has great influence on the slope soil and can be considered for removal. According to the terrain slope, the perennial perennial flowers such as iris, peony are combined with the lawn for landscape greening.

4.1.3 Parking plan planning

The left side of the entrance gate is the parking lot planning site. The current vegetation coverage on the site requires a large area to remove excess vegetation. The parking lot adopts lawn bricks for ecological parking lot construction, the center of the bricks is made of resistant grasses, such as tall

fescue, which can absorb harmful exhaust gas such as automobiles, and has the ecological benefits of reducing temperature and reducing dust.

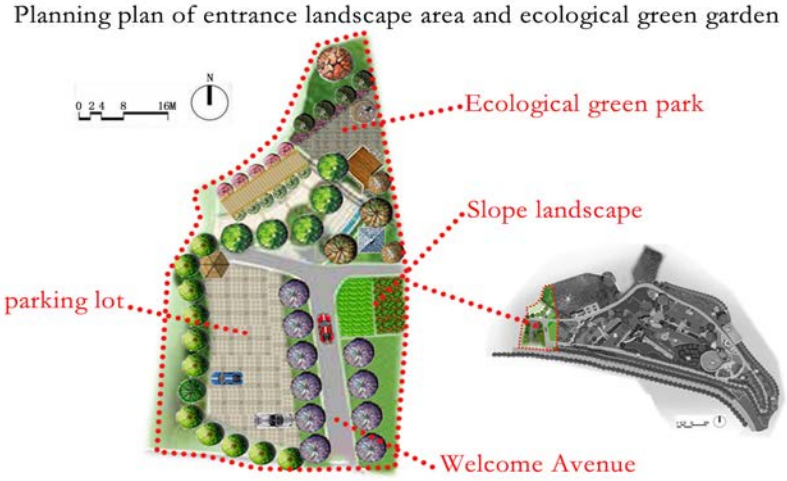

Figure 3 Entrance Planning Plan

4.2 Ecological green park

The site is located on the left side of the entrance and has an area of about 1.65 acres. It is a closed slope and it is intended to be built as a single-cycle ecological green space. There is a paper mill which has large pollution behind thin site. The edge of the site can be planted with large trees. And considering the pollution characteristics of the paper mill, the corresponding tree species can be considered for planting. We can choose strong shading ability trees,which can also absorb toxic gas, such as arbor, osmanthus, and leaf mites.

4.3 Main roads of the park

The main road of the park is a circular park trunk road with a width of 4 meters and a 0.5 m drainage ditch. The passing track is set within a certain distance of the main road to facilitate vehicle access. Considering the production function of the park, special production and transportation car parking area can be recommended.

4.4 Ecological fruit forest area

The site is located on the right side of the ecological green park. The area is about 4.94 acres. The fruit is planted with high yield. It is planted in accordance with market demand and local climate. The site is relatively flat and suiTable for planting such as grapes, figs and strawberries.

Figure 4 Park parking renderings

Figure 5 Ecological fruit forest area renderings

4.5 Private custom area

The private custom-made area is located directly opposite the fruit forest road, with an area of about 8.24 acres. It is positioned as a small family farm to form a unitized site layout, creating a recreational environment. Form a certain private space, the left side of the custom zone is close to the park trunk road and can be set up with an office area of about 0.33 acres, which is convenient for management.

Figure 6 private custom area renderings

4.6 Ecological chicken farm

At present, the site has a large area of birch forest as the surface vegetation. Considering all reservations, the site only needs to set certain management facilities and fence partitions.

Figure 7 Ecological chicken farm renderings

4.7 Plant construction area

This atea will be set up with three workshops, the main industries of this site is fertilizer and food processing, with an area of 4.50 acres. The building should reflect the ecological element as much as possible. The factory compartment is a landscape-building area. Consider mixing and matching the flowers.

Figure 8 plant construction area renderings

Figure 9 Leisure Center renderings

4.8 Leisure center

The site is located on the right side of the building construction land. The building is built in the style of glass house. The ecological kitchen is set in the house. Trees and shrubs are planted around the house. Because of the large area under the forest, you can consider setting up recreational activities under the forest, such as barbecue and camping. Leisure and entertainment can also promote parent-child interaction.

4.9 Science park

The Science Park is located on the right side of the leisure center and requires the design of the gate landscape. There are existing plum forests and apricot forests around the Science Park, which can be considered for preservation and transplanting into the Science Park. The Science Museum mainly has functions of display, publicity, education.It also develops agricultural plant science

knowledge, health care, product physical display for different groups of people, it is intended to be an agricultural science park base.

Figure10 Science Park renderings

4.10 Ecological pig farm

4.10.1 Pig trunk landscape planning

The current construction of the pig house is under construction. The overall building is set to three floors according to the slope. Each pig house is a unit with a spacing of 3 meters between each pigsty. The middle is planted with deworming, aromatic vegetation and flowers. Each unit pigsty is provided with a movable wooden landscape to facilitate the collection of pigsty excrement, while the isolated pigsty is placed at the above site.

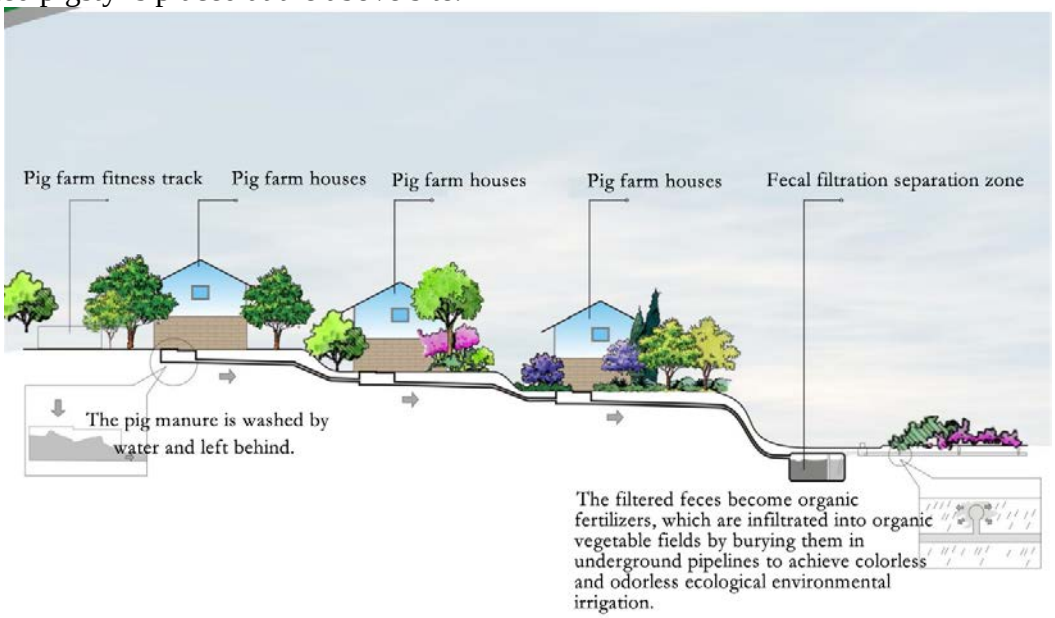

Figure 11 Ecological pigsty design

4.10.2 Pig runway

The pig's runway is located above the pigsty. It is a rectangular block with a relatively flat site. It is required to design a 3m wide runway. A vegetation belt with a width of 0.5m is designed on both sides of the runway. The fence is partitioned by trees and the trees are planted in the vegetation zone.

Figure 12 Pig Runway Rendering

Figure 13 ecological pig ring renderings

4.10.3 Pigsty management facility

The venue requires a monitoring room and a duty room as well as an entrance landscape, using remote infrared, video monitoring and other equipment to meet the management's comprehensive monitoring and management needs for pig breeding.

4.11 Pond water scenic area

The pond is relatively low-lying. The water diversion is mainly carried out by drilling wells. The surrounding trees can be planted with trees such as peach blossoms, cherry blossoms, and willows.It is convenient for fishermen to relax and enjoy shade.The edges of the pond can be cut off through the landscape.

Figure 14 pond water scenic area renderings

5. Conclusion

Eco-tourism agriculture is an international sunrise industry now, returning to nature and creating an idyllic ecological scenery. The Shifang Lvtaikang Agricultural Ecological Park has become a modern agricultural base integrating production, ecology, ornamental and leisure, and agricultural recycling industries. It is a model of a planning project combining agricultural and tourism.

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