

Construction Strategy of Landscape Engineering in a Real Estate Exhibition Area

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Abstract: Taking the garden construction of a real estate exhibition area as an example, this paper introduces the construction sequence and construction strategy of various landscape elements, especially a solution when the working face is insufficient and the construction period is urgent, resulting in cross construction, hoping to bring some inspiration to relevant practitioners. Of course, the strategy to solve the problem will also vary according to the situation, and this case cannot be directly applied. I hope relevant practitioners can gradually supplement and optimize this article in their future work.

1. Introduction

Real estate landscape engineering is generally divided into two stages: exhibition area landscape engineering and handover area landscape engineering, and the exhibition area landscape engineering is the most important. Garden is the last process in all processes, such as civil engineering, water and electricity, integrated pipe network, etc. In the case that the previous process is delayed and the completion date is locked, the progress control of garden engineering is extremely critical. Not only can it not be delayed, but sometimes the delayed construction period needs to be rushed back, which requires the simultaneous construction of garden engineering and garden construction engineering. In the case of limited working face, cross engineering is inevitable. How to avoid cross-construction, or how to reduce the harm of cross-construction when it is unavoidable, is the main research direction of this paper.

2. Related terms

2.1 Landscape project

The landscape engineering referred to in this article includes green chemical engineering and landscape construction engineering.

2.2 Greening project

The greening project in this paper refers to planting projects related to greening, such as planting projects of trees, shrubs, ground cover flowers, lawns, aquatic plants, etc.

2.3 Garden construction project

The garden construction project in this paper refers to the civil engineering, structure, water and electricity, garden road and other projects related to the garden, such as roads, pavements, landscape pavilions, water fountains, short sculptures, garden water supply and drainage and other projects.

2.4 Exhibition area

Real estate developers demarcate an area before the opening, and carry out garden landscape construction in advance to show the quality of real estate.

3. Overview of the scene

This case is a garden construction project of a real estate exhibition area. The exhibition area is

rectangular, and the middle area is an artificial lake, accounting for about half of the whole exhibition area. Four hydrophilic platforms and eight waterside tree ponds are connected around the artificial lake, and the garden road around the revetment is arranged around the lake at arm's length. The lake is equipped with children's play area, dotted water system, landscape wall, sculpture and characteristic landscape lights. The greening project mainly includes the planting of trees, shrubs, ground cover flowers and lawns.

4. Construction overview

4.1 Earthwork backfilling

Because the design elevation of the construction drawing is two meters higher than the actual elevation, the earthwork backfilling construction is carried out first. In order to avoid the late settlement as much as possible, the earthwork backfill in the artificial lake area must be rolled by layers. According to the requirements of the specification, the standard of layered rolling should be layered rolling every 200-300mm for backfill earthwork, but considering the time and economy, what we finally achieved is to choose a vibrating roller with a specification of 20 tons and roll it every 500 mm.

4.2 Artificial lake structure construction

The work after earthwork backfilling is the reinforced concrete revetment construction of artificial lake and the bottom structure construction of artificial lake. Although we have carried out layered compaction of backfill soil in the early stage, the settlement problem cannot be avoided. In order to avoid uneven settlement caused by local weak soil or insufficient rolling, which will lead to cracking at the bottom of the lake, we added $\phi 12@150$ double-layer bidirectional steel bars to the 200-thick plain concrete structure layer. It should be noted that the necessary water and electricity bushings should be embedded in the structure before pouring concrete.

4.3 Landscape pavilion construction

The most time-consuming building in the exhibition area is the landscape pavilion. Although the area of Scenic pavilion Pavilion is not large, the construction period is close to two months, but it involves the majors of pile foundation, structure, water and electricity, exterior decoration, interior decoration, etc., so the construction should be synchronized with the artificial lake structure after earthwork backfilling, so as not to affect the total construction period. When constructing a pavilion or a landscape wall on the backfill soil with a height of two meters, we must pay attention to avoid the settlement problem and extend the foundation downward to the undisturbed original soil layer.

4.4 Garden water supply and drainage construction

After the completion of earthwork backfilling, the water supply and drainage construction of the garden can be carried out according to the principle of underground first and then on the ground. It should be noted that the buried depth of the garden water supply pipe should be below the local frozen soil layer to avoid the frozen storage pipeline that has not been emptied in winter. During the construction of garden drainage pipe, it should be noted that the elevation of the top surface of the rain outlet should be at a low level, and the slope of the pipeline should not be too slow, otherwise it is not conducive to drainage.

4.5 Green cross construction

After the completion of underground water supply and drainage, the above-ground construction can be carried out, that is, the hydrophilic platform pavement by the lake, the tree pond near the water, the garden road pavement and the greening project construction. However, due to the urgent construction period, it needs to be constructed in parallel with the greening project, so there is a cross-construction problem of greening and paving. There are about 30 backbone trees with diameter of 20-30 cm in the whole exhibition area, which constitute the greening skeleton of the exhibition area. Because of the heavy weight of large trees, it is necessary to use cranes when

planting, but the crane itself has a greater weight. If it is pressed against the pavement and garden road under synchronous construction, it will definitely crush the road and interfere with the garden construction. It is a technical problem how to solve the intersection of landscape architecture and landscape architecture under the tight time. After many discussions, we came up with a solution in a short time: under the condition of ensuring sufficient structure of the artificial lake, we temporarily paved a construction passage to the artificial lake, let the crane enter the artificial lake for hoisting operation and plant backbone trees. We choose a crane with a specification of 25 tons, so that the crane's arm span can be longer, which can basically cover all the green areas around the artificial lake, thus avoiding the cross construction of backbone trees and garden roads. Because the preparation time of the crane is long, the efficiency is low when working in a different place. In order to save time, we use a backhoe excavator instead of the crane for greening and planting. In the area where there is no garden road around the artificial lake, the seedlings are transported by dragging with a small excavator with small weight; In the area where the garden road or pavement must be overwhelmed, the seedlings are transported by two-wheeled carts with negligible self-weight; Small shrubs and ground cover flowers are transported manually. With this scheme, the garden road is basically unaffected by the greening construction, which not only solves the cross construction, but also ensures the construction period.

4.6 Artificial lake facing construction

To solve the problem of engineering intersection, it is necessary to immediately clear the temporary ramp in the artificial lake and pay close attention to the remaining work in the artificial lake, such as placing landscape stones, paving the top of the revetment, sticking cultural stones on the pool wall and installing underwater fountains at the bottom of the lake.

4.7 Paving and garden road construction

At the same time as the greening project, the paving project is carried out. During pavement construction, it is necessary to distinguish between the area where good cars travel and the area where people travel, and the road structure of the carriageway is thicker than that of the people. Before the construction of pavement surface, the comparison of material samples should be done well. If natural granite plates are used, it should be noted that the color difference between plates should not be too large, and the thickness of plates should be controlled within 2 mm of the specified thickness. Before paving in a large area, it is necessary to make a trial paving, that is, to make a certain area of paving samples first, and then to pave in a large area according to this standard after the flatness, color difference and paving form are all accepted. Whether it is the planting sequence of greening or the construction sequence of paving, it is from far to near and backward, otherwise it will easily block its own construction channel.

4.8 Construction of children's recreation area

Children's play area is a special paving area. It should be noted that the manufacturer of play facilities should be contacted in advance, and the concrete base should be poured after the embedded parts of play facilities are installed. The surface layer of amusement area is generally EPDM colored rubber. During construction, it is necessary to ensure the drying and paving thickness of the base, and it is not allowed to be constructed in rainy days.

4.9 Water system monomer construction

After the pavement construction, the landscape monomer construction above can be carried out. If it is a large-volume monomer such as fountain water system, the monomer construction should be carried out first, and then the pavement construction should be carried out, so as to avoid crushing the pavement by mechanical equipment during construction. The point water system in this case exhibition area is a double-layer water bowl fountain, and the bottom of the pool is required to be made on site. During the construction, it is necessary to pay attention to the correct position and structural size of the embedded hydropower pipeline. When doing waterproof construction, special attention should be paid to the waterproof treatment of the interface position when the pipeline

passes through the structure. There are two ways to waterproof the pool, waterproof coiled material or waterproof coating. When waterproofing membrane is applied, it should meet the requirements of additional layer treatment with overlapping width and yin-yang angle; When applying waterproof coating, it is generally necessary to brush the coating for three times, mainly after the last coating has dried, and then proceed to the next coating construction. After the waterproof construction is completed, a 24-hour closed water test should be carried out immediately to test the waterproof effect. If there is water leakage, it is necessary to find out the leakage point and solve it. Otherwise, the leakage after the pool is built will not be worth the loss. In addition, it is necessary to use low-alkali cement in the construction to avoid the maintenance difficulty caused by the return of alkali to the pool in the later period. The water bowl on the upper floor of the fountain needs to be prefabricated by the manufacturer, and it is necessary to contact the manufacturer before the construction, and the prefabricated construction period should be included in the total construction period management. Other characteristic lamps, sculptures and decorative materials should also be prefabricated in advance.

4.10 Installation and construction of lamps, monitoring and broadcasting system

The end of the project is the installation of lamps. The threading construction of lamps should be completed after the planting of trees and shrubs and before the planting of ground cover lawn. Don't bury the cable directly in the ground, but wear it into the protective sleeve, otherwise it is not conducive to later maintenance and replacement. After the protective sleeve is laid, the wires and cables should be inserted before the lamps are installed in the site, so as to avoid cable loss. For some characteristic lamps with large self-weight, the foundation depth should be ensured and lightning protection and grounding should be done well. If there is a monitoring system and a broadcasting system in the park, the related embedding work should be carried out simultaneously with the embedding of lamps.

4.11 Beautification and decoration

After the main project is completed, popular science signs can be hung on trees and shrubs, warning signs can be set at the water's edge, guide signs can be set at intersections, and instruction signs can be set in children's play areas. Finally, the manhole covers used in the park should be decorated and beautified. If the manhole is located on the pavement, try to use the invisible manhole cover combined with the pavement. If it is located in green space, you can use ductile iron manhole cover and cover it with artificial simulated lawn for beautification. If necessary, you can also use a special beautiful manhole cover printed with the project LOGO.

5. Conclusion

Landscape engineering is not only as simple as green planting, it basically involves all majors of engineering. First of all, don't make a mistake in the construction order. For example, the process arrangement in this paper is: earthwork backfilling construction→parallel construction of Scenic pavilion and artificial lake→garden water supply and drainage construction→parallel construction of paving and greening→landscape monomer construction→lamp installation, and the construction is carried out in the order from bottom to top and from far to far. However, the process is not the same, and it needs to be analyzed in detail. Secondly, we should master the quality control points of each process. This requires practitioners to have long-term experience accumulation, such as construction on backfill soil, and how to avoid the harm caused by settlement. Finally, when the construction period is tight and it is necessary to grab the construction period, cross-construction is common. This paper only provides a way of thinking. In the face of other specific situations, how to properly handle them, relevant practitioners need to be flexible.

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