

# Study on the Maintenance and Management of Landscaping Plants

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**Abstract:** With the urbanization of China, people are paying more and more attention to the beauty of their cities. Therefore, landscaping construction has become an important part of the city construction. And it also plays an active role in protecting our environment relying on its role in beautifying the environment. To strengthen the city construction, it is necessary to pay attention to landscaping construction, and relevant departments shall take effective management measures to promote the maintenance and management of landscaping plants to ensure the effective construction of gardens.

**Key words:** landscaping; maintenance and management; management measures;

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At present, with the rapid development of landscaping industry in China, the number of landscaping projects is gradually increased. However, there are still various problems in the actual construction of the landscaping projects at this stage, for example, low level of personnel's professional maintenance, imperfection in relevant laws and regulations. Thus, in order to improve the construction efficiency of landscaping projects, it is necessary for relevant government and staff to place more emphasis on the maintenance and management of landscaping plants so as to ensure the health growing of the landscaping plants. To effectively promote the maintenance and management of landscaping plants and make full use of its role and value, it is necessary to further strengthen the maintenance and management of landscaping plants so as to help the healthy development of landscaping industry<sup>[1]</sup>.

## 1. Problems existing in the maintenance and management of landscaping plants

### 1.1 Lack of personnel with professional skills

Firstly, you will find landscaping personnel anywhere, whether in the square of a new countryside, or in a city park. These personnel usually have little knowledge about the maintenance and management of the landscaping plants and are lack of basic professional skills and quality. Their work usually confines to basic work like pruning branches, irrigation and pesticide spraying, and there remain variety of shortcoming in their work, especially in technique work like topographical reform and garden design. So it is impossible for them to create a collection of garden landscaping which combined the aesthetic value with ecological value.

In addition, "migrant workers" with less scientific maintenance skills are unable to carry out fine maintenance for the plants, which will not only lead to problems of low survival rate and frequent plant diseases, but also bring other hazards like land acidification, salinization, and soil erosion.

### 1.2 Insufficient awareness in protecting the landscaping plants

Firstly, many cities fail to advance their publicity for protecting the landscaping plants after landscaping. This situation is mainly caused by the insufficient awareness of the public. Quite a few of the citizens trample the lawn and

throw rubbishes into gardens. Moreover, in the countryside, it is likely that some farmers cut down the trees in gardens as fuel woods, which is a very serious damage to the garden.

Secondly, influenced by the proposal to construct a characteristic city, many cities are placing excess emphasis on economic interests and neglecting the protection to the original vegetation. They blindly construct gardens with Suzhou gardening style and create a maple forest corridor. Thus there appeared problems of unreasonable plant configuration inharmonious with the development of the city, which not only caused economic losses but also damage to the environment.

### **3.1 Imperfection of relevant laws and regulations**

The imperfection of the laws and regulations for the maintenance and management of landscaping plants will lead to a series of problems. For example, it will lead to loopholes in industry standards and technical regulations so that some construction units will make use of these loopholes to excessively pursue the economic interests and ignore ecological interests. Meanwhile, it will cause blind competitions in the market and paralyze the market.

Since there are no relevant laws and regulations, it is impossible for the government to move forward micro-control policy to manage the market. And there are no relevant laws and regulations to guild the work of relevant departments. Thus there appear problems like formality in work, laziness in management and protection and connivance for malignant events. All these problems greatly affected the normal implementation of the maintenance and management for landscaping plants and were harmful to our environment.

### **1.4 Imperfection of relevant management system**

Since there are no institutional restrictions and guarantee in garden construction and there is no clear greening management system, government at all levels fail to effectively exercise government functions, which leads to “face-saving project” in some construction units with short guarantee period, low practicability, causing a waste of human and material resources.

Secondly, there is no transparent, open and fair index for garden construction so that some businesses have the opportunity to carry on false marketing and disturb the market order. In a word, the lack of management system is liable to affect daily work, which is unfavorable for relevant personnel to actively participate in the construction and development of landscaping work.

## **2. Significance of the maintenance and management for garden landscaping plants.**

The maintenance and management for garden landscaping plants lively embodies the implementation of the socialism sustainable development.

### **2.1 The effect of garden landscaping plants on environment**

Garden construction not only provides a good place for the visitors to have a break and entertain themselves, but also has a positive effect on constructing a balanced ecosystem.

Green vegetation can absorb carbon dioxide and dust in the air and is helpful to clean the air. In cities, it can reduce noise pollution, regulate humidity and temperature and alleviate greenhouse effect. In the northwest areas, it plays an important role in wind breaking and sand fixing. In addition, in the coastal areas, the mangrove landscape can also help to protect the coastline.

By making full use of the original natural landscape and reducing the destruction for original animal habitat, we can reasonably arrange our garden architectures and construct a natural garden like Guest-welcoming Pine (Yingkesong) in Huangshan Mountain. And this is also a good way to preserve soil and fix sand as well as reduce debris flow and landslide.

## **2.2 The effect of garden landscaping plants on human**

The beautiful environment created by garden landscaping plants is beneficial for human beings. For example, it will bring delightful views for visitors and relax them both physically and mentally. In addition, it will alleviate our fatigue on work and study when visiting in the garden. More importantly, it is good for our health to breathe some fresh air.

On the other hand, constructing garden landscaping has great economic advantages. For example, it can produce employment positions, and promote the vigorous development of tourism industry. It can also increase the incomes of the residents and stimulate consumer demand and drive the economic development in local areas. All these will help to improve the life quality of the residents and create a better life.

## **3. Maintenance and management for garden landscaping plants**

### **3.1 Deploying a modern scientific management system**

Firstly, it shall develop a kind of software to systemically manage garden landscaping plants, which can archive and classify the landscaping plants and collect relevant data. By this software, we can analyze relevant data and carry out unified management and maintenance for the landscaping plants. Meanwhile, we can simulate plant growth and monitor the plant growing environment in real time by taking advantage of multimedia technology.

Secondly, it shall popularize modern cultivating technique on landscaping plants and realize mechanized production to reduce labor cost, so as to maximize the scale benefits. Then it is necessary to organize an elaborate maintenance team with professional skills that can carry out scientific and reasonable construction plan for garden landscaping according to local conditions and different situations. Last but not the least, it is of great importance to improve the survival rate and vitality of garden plants and strive to achieve a sustainable development on the garden landscaping through the professional team of scientific conservation.

### **3.2 Prevention for plant disease and insect pests**

It shall strictly adhere to a comprehensive control prevention principle by taking prevention as prior in preventing plant disease and insect pests.

#### **3.2.1 Biological prevention and control**

Biological prevention and control is a kind of prevention method, which makes use of the natural enemies of some insects harmful to the growing of the plants through a comprehensive understanding of the growing characteristics of the vegetation and microorganism as well as its probable cause for plant disease and insect pests and then carries out a set of effective prevention and control measure. For example, in the United States, *Bacillus thuringiensis* is used to control gypsy moths, which is a good example of defeating an insect by another insect.

#### **3.2.2 Physical prevention and control**

Physical prevention and control is another prevention method, which uses the most simple tools and means to prevent and control the insects, especially various physical factors like light, electricity and heat. The most primitive and simple method is to clean and prune the diseased parts of a plant by hand. Other method is to destroy the growing environment of the insects and defeat them by covering a thin film on the soil to adjust the temperature and humidity of the soil. In addition, there is another method to trap and kill the insects by installing insecticidal lamps with various light colors in the garden, which can not only protect the plants but also look beautiful.

#### **3.2.3 Chemical prevention and control**

Chemical prevention and control is effective in controlling and preventing garden plant diseases and pests and can improve the survival rate of plants. But the residual toxic and harmful substances will badly affect the growing environment of plants. What's more, unreasonable use of chemical agents will also lead to the death of plants. Therefore, it shall use chemical agents scientifically and rationally to achieve our final goal while ensuring the healthy growth of plants.

### **3.3 Management for the soil, fertilizer and water.**

#### **3.3.1 Management for the soil**

Soil is the material basis for plant, which provides moisture, nutrients and temperature in the growing process of the plant. And the quality of the soil has an important effect on plant growing.

After the completion of the garden construction, the construction waste should be dealt in time. And it is necessary to create a good soil environment for the plant by adding some soil to the area with infertile soil and fertilizing the area at the foot of a tree. Meanwhile, it is necessary to loosen water and fertilize the soil in time to improve soil fertility and growing resistance of the plant.

#### **3.3.2 Management for fertilizer**

How to fertilize a tree is of great significance. The little trees shall be fertilized with liquid fertilizer in loosened soil while the big tree shall be evenly fertilized in the area under the tree canopy and keep dry. But the big trees exceed 3 years should not be fertilized in principle <sup>[2]</sup>. And the fertilizers differ from seasons, for example, nitrogen fertilizer in spring, little or no fertilizer in summer and phosphorus fertilizer in autumn. Generally, the ratio of nitrogen, phosphorus and potassium is 4:3:2. In addition, it shall not ignore the importance of microelements like iron and zinc in plant growing process. If the proportion of various elements is out of balance, there will also appear plant diseases.

#### **3.3.3 Management for water**

Water plays an important role in regulating temperature for plants. When at high temperature, leaves will evaporate water to dissipate heat and when at low temperature, water will help relieve heat loss. If a plant is overwatering, it may die from hypoxia, and if scarcely watered, it will wither. Therefore, it shall be watered moderately <sup>[3]</sup>.

### **3.4 Protection of famous and ancient trees in gardens**

Famous and ancient trees are very precious. So it is necessary to protect them in the construction of gardens. In addition, daily maintenance is also of great importance.

#### **3.4.1 Protection for the growing environment of the famous and ancient trees**

It shall timely remove and clean up the illegal buildings and garbage within the protection area of the famous and ancient trees. And it is necessary to timely take measures to solve problems like exposed root by covering soil or building slope walls. In addition, it shall cover green plants under the trees and effectively make use of plants to produce organic coverings to prevent visitors from trampling. At last, it shall build a protective fence that is as large as possible to match the shadow of the tree canopy.

#### **3.4.2 Protection for the body of the famous and ancient trees.**

It shall make a health check for the body of the tree, for example, filling the overlarge tree hole, customizing keels that prevent decay to reinforce and stabilize the tree. In addition, it is necessary to timely clip branches with potential safety hazard like dead branches, splitting branches and pendent branches to protect the safety of visitors' lives. In the end, it is necessary to install lightning protection equipment for the famous and ancient trees in the area with high frequency of lightning.

## **4. Management for landscaping plants**

### **4.1 Refining the garden landscaping plants**

It is necessary to increase the investment in landscaping maintenance. In detail, it shall strengthen the infrastructure construction, pave irrigation pipelines and improve the professional quality of the staff to promote the better growth of plants. Additionally, it is necessary to reasonably allocate the plants and choose the suitable soil for the plants. And it shall choose plants with obvious seasonal changes to increase the ornamental value of the park and constantly improve the aesthetic value. Therefore, it is necessary to establish appropriate landscaping according to local development. <sup>[4]</sup>

## 4.2 Improving the system design of landscaping

Firstly, it shall standardize landscaping management and establish a sound project management system. Secondly, it shall organize special institutions and personnel responsible for management and supervision. Thirdly, it shall establish a regulation system in line with the local situations combined with domestic and foreign standards and requirements on landscaping construction. In general, it is necessary to further improve the responsibility mechanism of garden landscaping and promote the cooperation among relevant departments to improve work efficiency by reasonably allocating functions and publicizing government affairs to make the exercise of the power more transparent.<sup>[5]</sup>

## 4.3 Improving the laws and regulations on the protection of landscaping plants

It shall improve relevant laws and regulations so that relevant departments can work in accordance with the laws to comprehensively promote law-based governance. And it shall restrain and regulate the residents' uncivilized behavior according to the law so as to improve residents' awareness in protecting landscaping plants. In a word, perfecting the relevant laws of landscape construction can not only control the malicious and blind competition between enterprises, but also save places for green land and cultivated land, thus achieving sustainable development.

## 5. Conclusion

It shall not only take ecological interests as priority, but also take public welfare into account in garden landscaping work. In addition, it shall improve the services of relevant departments and adhere to human-oriented principle to improve humanistic connotation in local regions and follow the pace of sustainable development. To sum up, it shall continuously improve the cultivation and maintenance technique for the landscaping plants and maintain the landscaping plants both scientifically and professionally to achieve its ecological interests. Additionally, it is necessary to pay more attention to the management for garden landscaping according to local conditions to ensure the successful achievement of such work both beneficial to our people and country, thus finally realizing the health and order development of landscaping industry.

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