

# A Brief Analysis of the Sustainable Landscape Design Based on *Natural Law*

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## Abstract:

Greater importance is attached to the “sustainability” of environment as the relationship between environment and mankind is witnessing a gradual tension. Nature is the fundamental for any human activities. Only with the design idea of sustainable development can we cope with the problem from the contemporary environmental issue which is conducive to establish a splendid hometown together. Philosophies from Taoism - *Nature Law and Govern Without Interference* - which enlighten us to be with nature and take advantages of the alternative powers of nature so that a sustainable self-regenerative landscape design can be shown. The passage shall discuss the sustainable landscape design in 3 different perspectives: Existing shortcoming of landscape in modern cities, Regard the landscape design in a Taoist view and How to design a sustainable landscape.

## Keywords:

Landscape Design, Sustainability, Nature Law, Govern Without Intervention, Regeneration

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## 1. Introduction

Being stressed by the shortage of environmental resources, everybody has realized the significance of sustainability. It becomes urgent to develop sustainability of landscape. However, since lack of sustainable concept in design, it's difficult for the landscape to keep generating and evolving for long time. In order to realize sustainable landscape design, the author conducts a series of analysis. This paper discusses the sustainability of landscape design in a progressive way. The first step is to find out the problems existing in the current stage of landscape design in China. The second step is to find inspiring cases to carry out sustainable landscape design, which is a process of thinking. The third step is to combine thinking with practice to make the sustainable landscape design feasible.

## 2. The Current Shortcomings of Landscape in China

### 2.1. Negligence of the Protection of Environment

This phenomenon is frequently seen in the modern landscape design. Under the pressure of population expansion, urban design requires more land resources than before. A great many designers come up with the idea of “filling up the lake”(Figure 1). That is to fill up a water area which converts a originally natural lake resource into a solid ground for construction. This kind of approach destroys the man-earth relationship and influences the sustainability of the ecosystem. In the meantime, the level of difficulties of the maintaining works subsequent to this unstable design is also increasing day by day, which is incapable of fulfilling the concept of sustainable landscape. Therefore, this way is consuming natural resources and unfriendly to the nature, In addition to this kind of landscape design, there are designers in the design of landscape do not consider the environmental restrictions, will hinder the design of all the beautiful landscape, are "removed" off. This is an act of destroying the environment, so how can we rely on such a design to repair the natural environment?



Figure 1. Filling up the lake.

Figure comes from Internet

## 2.2. Regardless of the Natural Pattern of Ecological Environment Development

Nature is the fundamental and background for any anthropic activities. [1] Yet much landscape design lacks the concept about humoring nature when dealing with the relationship between nature and mankind. Some of the floral landmarks regarded as the part of the regional culture in urban and surrounding areas are likely to be abandoned during the progress of the landscape design. The designers, who believe the so called art value, choose the plants which are the rare species but impossible to grow there for cultivation. This is a way of designing in which the loss outweighs the gain. Not only will it destroy the growth habit of plants, but also affect the stability of the local ecosystem. What the environment plants rely on is immanent law which is just the law of natural growth.

## 2.3. Lack of Concept about Sustainable Development

Sustainability, a progress or status that could be maintained permanently, is exactly what most urban landscape design lacks. Vast majority of designs indulge themselves superlatively with a straightforward destination of accomplishing the missions rather than solving the problems by the roots. For example, in order to make a forest they plant and to add some watery effects they make a waterscape and so on. Due to the neglect of “the concerning whether or not the landscape will maintain permanent development”, it’s not possible for this kind of designed landscape to be regenerative on its own and the landscape will gradually come to an end. Then the cycle makes the condition resilient dissipating manpower and costs as well as the environmental

resources. Merely labeling their design as “sustainable” while authentically of no consequence to it, they are entitatively taking away from the environmental resources continuously and forestalling the ecological organic system from evolution process.

### 3. Regard the Landscape Design in a Taoist View

#### 3.1. Nature Law [3]

Nature, a mutually living and promoting organic ensemble, has its own “Tao” (way) of survival which is never vulnerable. Once the laws of survival alternated to what they aren’t, it will leave the ecosystem catastrophically messy. And that’s when harmonious landscape is gone. Laws of nature (Figure 2), kind of like “Big fish swallow the little ones who swallow the even less...”, exist as a form of circular food chain. A concept that one relies on another is also integral to another mutually as a way to live with harmony together. However, the circular chain is exactly what the landscape design needs, requiring people to take into account. Then the factitious landscape can be natural as well as following the laws of natural growth, subsequently forming a type of life trajectory in chain survival development. Along with this natural development of life trajectory to achieve sustainable landscape design.



Figure 2. Diagram of ecosystem.

(Figure comes from Pinterest)

“Landscape serves as a capsule holding a variety of natural progress which supports the existence and succession of life. It is also a synthesis of beings constantly in the alternation of growth and decline...” [4] Therefore, we are obliged to keep to these rules of natural alternation and conduct factitious regenerative design with the power of natural law. And make the ecosystem regenerative after the landscape is contrived appropriately. That is to say, “From growth to decline and after declining”, this natural growth process is what landscape designers need to study and apply in landscape design. Only under this natural growth law can landscape sustainability be realized. The law of natural growth is the wealth that nature bestows on us. We should apply it rationally to create a more harmonious environment between human and nature.

#### 3.2. Governing Without Interference [5]

“Without interference” is the quintessence of Taoism. It’s not literally without anything or interference. Take the process of landscape design for instance, “without interference” proposes not to interfere too much with natural landscapes and to show nature landscape itself as much as possible. The design can be more likely to obey the laws of nature while depending on it. This concept of contriving landscape is overtly illustrated in the “Japanese Rock Garden” (Figure 3) which respects the essential form of nature, never decorates with too many redundant elements, and concentrates on exhibiting the entitative features of stones and arbor. Being particular about integrating oneself as well as activities into nature to form mutual promotion which links nature and mankind together, it also makes the organic ensemble developed together. That is how to realize the sustainability of ecosystem.



*Figure 3. Japanese Rock Garden Landscape.*

*(Figure comes from Pinterest)*

Compared with urban landscape, rural landscape is perfect to illustrate the concept of “without interference”. Landscape is in a condition of “original ecology “leaving out redundant ornaments and paying more attention to the self-regeneration progress of floral landscape. This kind of “without interference” landscape is close to the natural environment and shows clearly a spirit about people getting along well with nature, which can direct us to set up a consciousness to protect our environment and admirably boost the sustainable development of landscape.

Through these two examples of "Without interference" landscape design, we find that "wuwei" design can create a more harmonious coexistence of human and nature environment. In the design, do not lay stress on too much adornment sex, put the beauty of nature however greatly change; reflect the landscape characteristic below a kind of natural state. Designers should apply this design idea of "*Nature Law*" and consider more environmental factors of plants' self-growth. Let the landscape first self-growth do not do too much intervention, in the growth has formed a complete natural growth process, in the adjustment, of course, the design or to consider the "Tao law of nature". In this way, not only the designed landscape has its ornamental value, but also can make the landscape design with sustainability.

#### **4. Conducting a Sustainable Urban Landscape Design**

“Sustainable development has got to be simultaneously satisfying the needs of contemporary era and not interfering offspring’s of us.” [6] This sentence describes the sustainability of resource environment. But to the urban landscape design, what is sustainability? According to the author, the sustainability of the urban landscape design relies on the sustainability of the landscape itself. In the progress of urban

landscape design, it is a priority to consider the laws of natural alternation and humoring the nature. Secondly, the self-regeneration and replenishment capability is what should be taken into consideration. Finally, it is about the maintaining work of the landscape which ensures that better sustainability is realized out from the design.

#### ***4.1. Following the Laws of Nature Based on Local Conditions***

In the late 60s of last century, McHarg [7] put forward the landscape programming idea of “design humoring nature”.

To realize the sustainability of landscape design, the prime mission is to protect environment and follow the laws of nature. There is a Chinese saying goes “Orange is orange in Huainan and trifoliate in Huaibei”, the meaning of which is that oranges born in Huainan area are delicious oranges, while transplant them to Huaibei area, another sour and bitter kind of fruit (less in size from the origin) is born instead. [8] The sentence impeccably illustrates the regional difference of the growing environment for landscape. To the sustainability of landscape design, we have to consider the regional conditions of the local environment in advance. And it is only possible for us to promote the sustainable development of the urban landscape under the circumstance when we are adequate enough to suit measures to local conditions. In the meantime, during the progress of designing, we are obliged to interfere natural landscape as little as possible in order to preserve more priceless heritages those are nature left for us. By then we can make the design more sustainable using the power of natural alternation and subsequently people will get along well with nature with harmony.

#### ***4.2. Providing the Landscape with an Environment in Which Self-Survival is Possible?***

In the natural ecosystem, animal and plant possess a magically natural ability to self-survive and self-replenish, which we have got to provide with an environment to survive and develop. In this way the individuals within are all connected together and a small ecosystem that may systematically develop for a long time is established. Sustainable landscape can be defined as landscape that has the ability to regenerate. As an ecosystem, it should be possible to constantly evolve and provide mankind with constant ecological service.” [9] The ability to regenerate for a floral landscape is of great importance to the sustainable landscape design. As what the American Society of Landscape Architects (ASLA) [10] proposed in *Landscape Architecture*” (LAM) [11] in 1993, “A healthy landscape needs constant regeneration. the sustainability goes with the regeneration of landscape. The rudimentary needs for people is satisfied based on a healthy landscape...”. Plants also need the environment to support in order to bring the regenerative ability into play.

#### ***4.3. Making the Landscape Capable of Maintaining Itself***

The maintaining works after landscape designing cannot be underestimated. Compared to artificial maintaining, floral landscape itself has a better maintaining ability and its self-replenishment can also promote the steady evolution of ecosystem. In nature world, the plants are profoundly skilled in self-replenishment. Such as the grafting of flowers and trees, the dying ones being grafted can grow again. The landscape design just needs to provide an environment in which the new lives can get “grafted”. In this way, different landscapes can mutually replenish each other and saved manpower resources as well as reducing the interference with the natural

environment, and it is helpful to make the ecosystem a whole organic one and realizing sustainability.

## 5. Conclusions

“The job of Landscape designers (Landscape constructors) is to help mankind, and let people, buildings, activities, society, and their lives get on well with each other together with the earth as well as its refulgent future. [12]

The implementation of the sustainability of landscape design, in the current era of fierce environmental problems, it is urgent, and to implement the sustainability, we should pay more attention to the landscape environment itself. Landscape architect is to build a bridge of harmonious coexistence between human and nature, so as to keep both sides in a balanced state. The purpose of the design is to create more beautiful, so the design in the first place stresses on the landscape "formal beauty", should now consider the environmental factors of natural growth, so that landscape design can achieve the "harmonious society" of the beautiful vision.

The revelation of Taoism makes us acquainted with an idea of *Nature Laws*, and *Governing without Interference* about the landscape design to humor the laws of natural growth, to leave the landscape able to self-regenerate and self-replenish. What we need to accomplish is to provide an appropriate environment for this power of nature in order to realize sustainability for the landscape design. But of course we have to protect the environment ahead of the construction of landscape. After all, nature is the fundamental of any anthropic activities. Protecting the environment is the same thing of protecting our own very hometown. As a consequence, we shall pay attention to the sustainability while the environmental resources are still in shortage at present.

## Conflicts of Interest

The author declares that there is no conflict of interest regarding the publication of this article.

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## References

- [1] Kongjian Yu; Dihua Li. Sustainable Landscape: Urban Environmental Landscape. *Urban Space Design*, 2007, 1, 7-12.
- [2] Fei Zhang. Exploration of Sustainable Design in Landscape. *Art Panorama*, 2018, 11, 80-83.

- [3] Haitao Wang, Haiyan Liu, Yuangu Duan. The Embodiment and Application of Taoist Cultural Thoughts in Modern Landscape Design. *ShanXi Architecture*, 2011, 26.
- [4] Chen Mu. Analysis of Taoism in Landscape Planning and Design. 2016, 2.
- [5] Zhonggui Shi; Lixia Huang. The Present Situation and Development of Urban Landscape Design in Contemporary China. *Guangdong Science & Technology*, 2013, 22, 219-220
- [6] Kongjian Yu, Dihua Li, Qingping Ji, Landscape and Urban Ecological Design: Concepts and Principles. *Journal of Chinese Landscape Architecture*, 2001, 06, 1-8.
- [7] Barry W. Stark; John O. Simmonds; Qiang Zhu; Kongjian Yu; Liling Huang; Landscape Design-Site Planning and Design Manual (Version 5), 2014, 7(2), 1-18, 129-130.
- [8] Eddy Van Der Maarel; Janet Franklin; Mingyu Yang; Xiaokun Ao. *Vegetation Ecology* (2ed). 2018, 1(2), Chapters 5-9.
- [9] Meg Calkins. *Sustainable Landscape Design-Site Design Methods, Strategies and Practices*. 2016, 5(1), Chapters 2, 4, 6,7.



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