

TRENDS IN LANDSCAPE, AGRICULTURE, FOREST AND NATURAL SCIENCE

EDITED BY

Murat Zencirkiran

Trends in Landscape, Agriculture, Forest and Natural Science

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PREFACE

The history of science is the history of humanity, the history of civilization, and the history of development. To establish a connection between what came first and what followed is necessary to build our today and our tomorrow.

If we want to talk about today's trends, we have to connect our past knowledge to today's research and findings. Indeed, setting trends—particularly in science—requires lots of dedication. Just using a technical perspective is not enough, and researchers have to remain in possession of every aspect of life and every level of thinking. The trends in landscape, agriculture, forestry, and natural science center on responsibility because these topics are directly involved in human life and our future.

Our fifty contributors are not only experts in their fields, but also they have experience of working in a multidisciplinary manner. This multidisciplinary view is essential to building our future, both safely and sustainably. For a sustainable world, landscape, agriculture, forestry and environmental sciences play a significant role. However, the preservation of our planet is not enough in this era. We have to heal and improve it for our future followers. As described in an Indian proverb, "we borrowed this World from them".

In this book, as an editor, I have tried to collect different data sets in various disciplines. We hope that we can achieve a holistic approach to our studies in landscape, agriculture, forestry, and natural sciences. *Trends in Landscape, Agriculture, Forestry, and Natural Science* is not only for the experts in these fields, but it also provides a good source for people who want to learn about these topics. This book includes research, studies, and current trends in all of these areas. Our book includes twenty-five chapters prepared by fifty different contributors. We are grateful to them for their invaluable help and expertise. Without them, this book would not have reached its purpose.

THE EDITOR

CHAPTER THIRTEEN

LANDSCAPE DESIGN FOR SUSTAINABLE HISTORICAL PLACES

AYSUN CELIK CANGA AND
FUSUN ERDURAN NEMUTLU

Introduction

The remains of the structures and places belonging to the people that lived in the past constitute historical places. It is necessary for a place to be ancient, reflect a particular historical period, and to have artistic features to be regarded as historical. Historical places are not the only the indicators of a society's cultural richness but they are the most critical component of the cultural landscape. Spaces with a diverse cultural landscape function as mirrors reflecting the social development, creativity, and spiritual richness of humankind; they also form part of our common identity (Celik and Erduran Nemutlu, 2018). Therefore, landscape design in historical places is one of the most important subjects with regard to the quality of urban landscape design.

Historical places indicate the creativity of their societies with characteristics such as their excellent general view; their compositions, which are abundant in different styles and forms; curving streets that offer surprises for visitors; and their meticulous craftsmanship. These environments hide details of an ancient society's social and economic structures. Historic urban spaces may be considered to be outdoor museums that indicate how people used to live in the past in today's world where living conditions, traditions, and construction techniques change rapidly (Ahunbay, 2004). Historical places interact with the existing urban development process and are influenced by problems, such as population growth, urbanization, environmental degradation, natural disasters, climate change, increasing inequality, and poverty; this means that sustainability

has become impossible.

Historical places form the most lively and attractive parts of cities. Therefore, it is necessary that they regain their lost visual and aesthetic harmony. Managing the conservation of historical places as living environments is a complex issue. Urban planning in city centers with the purpose of maintenance has to be the outcome of cooperation between different fields of specialization, such as urban planning, with varying significance depending on conditions that include architecture; restoration; art history; archeology; landscape planning; transportation engineering; social sciences; ethnology; urban economics; statistics; environmental sciences; and infrastructure engineering (Tuncer, 1986). Societies can reflect their identity to the extent that they can preserve their historical and cultural values and combine them with contemporary lifestyles. The way to prevent these values from disappearing is to revive historical environments through necessary functional changes and involve these them in community life.

It is vital to utilize historical places with a conservatation approach to landscape architecture, so as to ensure the sustainability of these spaces that have survived until the present today and still bear the traces of past events. This is because historical and cultural spaceswill be abandoned and destroyed unless they are used. A historic event or an ancient culture can only be understood and interiorized if the physical environment reflects the era of that event. These spaces should be utilized by preserving their identities within contemporary living conditions. Beyond being a part of a specific practice, historical places should have designs that bring them character and enable them to reflect their cultural identity. This study determines the principles of landscape architecture design that use, preserve, and sustain historical places.

Landscape Design Elements, Design Principles, and the Designing Process

The primary objective of landscape design is to create physical strategies and forms that consider ecological, technical, and artistic criteria to ensure a sustainable exchange between human beings, their environment, and vegetal design (Dong, 2009). A design’s success is closely related to the designer's ability to use the elements given in Table 1 and the design principles given in Table 2 effectively (Akbulut, 2010). Designers should focus on the following terms: “elements, principles, and design”.

Table 1: Landscape Design Elements

Design Elements	Design Elements
Line	Color
Form	Emphasis
Scale	Light and Shade
Proximity	Alignment
Texture	Action

The objective of the design and the design site come into prominence in the formation of the work. The designer should start his/her design with a concept in accordance with the objective and design site. In this way, more clear and original designs will be created (Turan and Bayazit, 2010, Turan and Altas, 2003). The basic principles of the landscape design are used to connect the components used in the organization of the space. It is possible to use one or more of these principles when designing the space. It is essential to avoid annoying contrasts and exaggerations. None of the design components should be incompatible with another. The basic principles are listed in Table 2.

Table 2: Landscape Design Principles

Functionality	Hierarchy/Harmonization	Simplicity
Repetition	Emphasis	Unity and Composition
Compatibility	Order	
Contrast	Proportion	

A landscape architect should define the problem and the challenge's purpose, fulfill the design process, and have a sustainable approach (Yasar and Duzgunes, 2013). The design process should start with the identification of the site's existing natural and cultural landscape characteristics.

Landscape Design in Historical Places

The essential element that links the members of a society is their shared past. The most concrete examples are the place they live and their cultural values (Celik and Erduran Nemutlu, 2018). Historical places, which are organized according to human standards, are didactic and attractive. They offer environments that positively affect social relations and strengthen the

sense of unity among individuals (Ahunbay, 1996). Historical cities, historical monuments, and remains of ancient civilizations are symbols of national culture. Therefore, they constitute educational and cultural assets for the following generations. Cultural assets that ensure the historical persistence of the nations and reflect the aesthetical and architectural understanding of the era that they belong to have documental, historical, aesthetical, architectural, urban, and natural values (Ceylan, 2013). Historical places, which are the most critical components of both the cultural landscape and heritage, are not only didactic but also intriguing. These places are also crucial for tourism.

Historical places consist of structures and open space. Implementing only structural designs prevents the structure from integrating with its environment. Therefore, well-organized landscape design is required. The importance of landscape design in historical places are listed below:

- It ensures the establishment of a relationship between humans, the environment, and history.
- It ensures the integration of historical areas within the environment.
- It enables various recreational activities to be carried out by functioning as a park.
- It provides a space for the circulation system.
- It adds ecological value to a historical place and its environment.
- It offers an environment to sustain biodiversity.
- It adds aesthetical value to a historical place and its environment.
- It provides a historical place with a distinctive value.
- It adds economic value to a historical place.
- It contributes to social development among visitors.
- It provides visitors with a relaxing, comfortable, and peaceful environment.
- It improves a historical place's quality of life and its environment by providing fresh air.
- It gives meaning to the urban identity, while adding value to a historical place's identity.
- It is effective for a historical place's national and international recognition and, consequently, the country's image.
- It has positive effects on the space's image and appeal.
- It has a softening effect on the stiff view of the structures.

- It protects the historical place and its environment from various environmental problems, such as erosion, and soil/water/visual/ noise/light pollution.
- It contributes to the conservation of the natural and cultural landscape.

Landscape Design Principles for Sustainable Historical Places

Landscape design practices are primarily related to the design site. Landscape designs based on contemporary criteria do not retain the historical texture. Therefore, both historical and contemporary values should be used together in these spaces. To ensure that all types of practices in the historical environment have a strengthening effect on its character, interdisciplinary cooperation is necessary. In this way, these specific spaces will gain an identity. Landscape design principles for sustainable historical places are as follows:

- ✓ The soul of the space should be retained within the design. The design should understand the era that the structure belongs to and should strengthen its character.
- ✓ Unity should be sustained. The structure, its environment, and the cultural characteristics it reflects should be preserved as a whole.
- ✓ The existing skyline of the historic structures should be preserved. Human standards should be considered during the reorganization.
- ✓ The constructional components should be compatible with the historical texture in terms of material, color, and texture. They should cost-effective and promote the ease of use.
- ✓ Street furniture, such as stalls, phone boots, pergolas, billboards, guide boards, bus stops, barriers, letter boxes, fountains, ponds, lighting equipment, sitting equipment, plant containers, flower beds, dustbins, flooring, fence elements, and artistic objects, should be compatible with the historical texture in terms of material, color, texture, and form; they should also have integrity with the general pattern and should not cause visual pollution. Every piece of equipment should be functional, aesthetical, comfortable, easily maintained, durable, and economical. The equipment should fit the facility's purpose and be accessible. Signs and guideboards should include international symbols. The flooring material should be comfortable and easy to walk on and compatible with the climate characteristics.

- ✓ Vegetal design should be carried out in a manner that is completely suitable for the functional characteristics of the space. It should also be compatible with the historical texture. Designs that emphasize, reveal, and enliven the historical texture rather than conceal it should be preferred. Species that symbolize the historical texture should be primarily preferred. Monumental trees, natural vegetation, old trees with limited adaptation ability, and endemic species should be preserved. Fragrant plants, plants with permanent color, and established plants should be used as much as possible. The vegetal elements should be compatible with the historical texture in terms of form, color, and pattern. However, the plants used should not harm the structure's surfaces. Care activities, such as disease and pest control, fertilization, and pruning, should be fulfilled regularly and on time.
- ✓ Water elements that are compatible with the historic structures should be preferred; if possible, historical fountains should be preserved and maintained.
- ✓ The equipped areas should be well organized.
- ✓ The total time visitors spend in the historical space should be considered.
- ✓ Economic opportunities should be considered.
- ✓ The legal framework should be considered.
- ✓ Technological developments should be considered.
- ✓ The design should be suitable for recreational activities.
- ✓ It should be safe and accessible.
- ✓ Regular maintenance activities should be carried.

Conclusion and Recommendations

The conservation of historical places and their integration with present-day conditions is an important form of cultural conservation. It is necessary to preserve and transfer its values to the next generation. Landscape design for historical, cultural, and natural environments should be carried in a multidimensional manner and its conservation plans should serve cultural, aesthetic, recreational, touristic, and economic purposes. It should also be focused on solving problems and enhancing existing opportunities. Sustainable design should be accepted. Here, it should conserve its physical and socio-cultural structures, with holistic conservation as its main objective. A realistic maintenance program developed concurrently with a design is of great importance for its protection. Therefore, maintenance opportunities should always be considered during the

landscape design process. Specialized staff should be employed and equipped with maintenance equipment. The users of the space should also be considered in the design process. The plans and designs should have principles, and the local identity should be reflected. For this reason, the planning and designing processes should have a multidisciplinary dimension, and staff should understand local characteristics (Celik, and Erduran Nemutlu, 2018).

In conclusion, landscape designs that prioritize scientific data should be used to preserve the environmental character; to provide accessibility, sustainability, and continuity; and to create functional, perceptible, aesthetical, original, safe, peaceful, and comfortable spaces. These types of data and sanctions should also be covered by the legislation related to the landscape design of the historical places.

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