

PRINCIPLES FOR THE FORMATION OF SPACES ALONG WALKING TRAILS IN FOREST LANDSCAPES

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Abstract

Some conditions and opportunities for improving the aesthetic qualities of forest landscapes and strengthen their visual effect are the focus of discussion in this paper. The panoramic views and attractive landscape fragments and landscape paintings are often main focus in the construction of trails for hiking, cycling, mountain biking and horse riding. Most of them use the existing pedestrian routes that do not always provide landscape attractiveness. The aim of study is to define principles for the formation of spaces along the tourist trails considering to increase the emotional influence of forest landscapes. The result of the analysis shows the great importance of vegetation as a primary component of the visual space and the importance of ably trails tracing for the visual perception of forest landscapes. The article discusses the application of the principles of landscape architecture for environmental friendliness, logical paths, optimal visual quality and landscape influence on tourists. Particular attention was paid to the role of eco-trails as a prerequisite for creating unique landscape attractions, enhance cognitive nature of outdoor recreation and suggesting respect to nature by tourists.

Key words: forest landscapes, panoramic views, pedestrian routes, perceptions, recreation, visual quality.

Introduction

The main objective of this study is to define some principles of forest landscape design the implementation of which would improve aesthetic qualities and visual attractiveness of forest landscapes. Although it is not possible to choose absolutely objective measure of aesthetic assessment, there are many theoretical formulations for indicators and criteria for this. The article has attempted a pragmatic approach on forest landscape design. The research objects are selected from different parts of Bulgaria, and are preferred territories with high tourist poten-

tial. It is very well known that most tourists gather and keep their attention for a long time in places with long panoramic views towards vast territories. This usually happens at these points of the walking trails where they pass through ridges, protruding parts of the slopes or edges of rock slopes, and due to the sharp displacement, a wide view is revealed to areas located away from the observer. In almost all other cases, tree vegetation in forest landscapes obstructs visibility and tourists see only nearby. In these cases, the small detail in the landscape is important – it could be a tree or a rock piece, a mountain stream, etc. In this logic, the present study

focuses on relief and tree vegetation as the most significant factors in generating visual landscape attractiveness. The use of these two factors is at the heart of the general principles defined in the end of the present study. Therefore, the methods of natural survey and landscape inventory have been used jointly in this study.

Material and Methods

Open spaces along walking trails provide best opportunities for visual perceptions of tourists and modeling of forest landscapes. Therefore, the field of surveillance is the most spacious and gives a good choice of perspective. Since each level of monitoring we have a different horizon and a different distance to viewable objects. This determines as important different plans in space examined in great detail in Bell (2004).

It is very difficult to summarize and systematize all scientific views on the issue of forest landscape perceptions and especially of scenic beauty.

Several models of scenic quality have been researched and investigated (e.g., Gurkova 2016, Stoycheva 2016). They are based on combining parts of reconstructive methods, park perspective, spatial composition and painting techniques of imagery. They can make design process much easier and the resulting landscape "picture" – applicable to planning process, respective to forest landscape design. Simple and effective guidelines for forest landscape design are published in Kosarevskiy (1977). Although visual complexity and aesthetic quality are stretchable concepts, the whole picture of a perfect landscape comes from the well-thought out and successful park design drawing and is responsible for the

subsequent realization in real space. That is why the landscape planning itself, as a pictorial space, is essential for the panoramic views recovery. The theoretical considerations regarding problems studied in this paper was influenced by similar publications in ecology, especially in Anonimous (2000) and in van Oosten et al. (2014), which proposed that increasing ecological diversity is correlated with increasing stability, and hence with environmental quality. Other researchers (Forestry Commission 2011, Watts and Tolland 2005) have explicitly linked these two ideas, proposing that ecologically stable, i.e., healthy, landscapes are intrinsically beautiful. This paper takes into account scenic quality aspects that have been examined so far and tries to implement them in landscape design.

It is always difficult and very relative to postulate the principles of aesthetic qualities of landscapes and, in particular, forest landscapes. It is even more difficult to typify human perceptions of landscape attractiveness. Whether or not, research is being done in this direction by Lovell and Johnston (2009), SAEFL (2003) and many others.

Results and Discussion

It is very difficult to summarize all visual situations that predispose to stop the movement and static observation. Given previous research on the subject we can subtract some general principles or requirements for forest landscape design along walking trails. These requirements generally relate to the design decision of volume-spatial composition of the vegetation and to a less extent – to the formation of trails.

As a general rule may be indicated

the necessity of compliance of the design solution with natural conditions. Accordance with the most significant landscape components (relief, rock formations, lakes, rivers, streams, vegetation, etc.) always is a leading factor that ensures an adequate design solution.

Complying a rate in accent saturation is very important aesthetic rule in forest landscape design. Each recreational environment requires a correct accent dosage. This is particularly important in forest landscapes, to preserve their natural appearance and charm.

Another important condition for a positive artistic and emotional effect in forest environment is the proper proportioning of main highlights.

Regarding the planned structure of the trails on the first place we must be careful that they should not be like axes of symmetry in open spaces. Viewed in plan, they have to pass closer to a periphery of meadows and forest's border and not in the middle of the open spaces.

The peripheries of forest massifs and tree groups themselves have to be designed by schemes that provide dynamic stirred outlines. Global indentation in the shape of the periphery of forest massifs provides comfortable seating "boxes" for the deployment of recreational facilities. Small finely indentation of forest edge knurling in turn gives them a natural environmental friendly appearance.

In terms of landscape diversity and attractiveness it is very desirable for tourist trails to pass through glades, meadows and other open spaces. When tourists come out of closed spaces in wood massifs and enter in the open meadows and lawns, trails would be traced in a way that allow a full overview of landscape "paintings" into smaller lawns or provide a smooth and gradual change of nature

scenic views during the transition from one to another part of the larger lawns. For larger meadows it is normal to create internal secondary paths inside them, too. They allow tourists a continuous stay in open sunny space and support a dynamic rotation of sights and assist for static observation of attractive landscapes. Generally these internal trails have to follow the peripheral parts of the lawn as occasionally may enter through the trees in the surrounding forest stands and again go to the open spaces forming a closed circular route. With a view to preserve the integrity of grasslands, it is not appropriate for these lanes to cross the lawn in the middle unless there is a special compositional design goal. The main route is not suitable to traverse through the middle of the open spaces and should not be an axis of symmetry in them. Within each open space it would be traced so as to reveal merits of the landscape to tourists.

A right balance between open and closed spaces creates valuable and attractive dynamics of volume-spatial composition and creates the expression of views (Fig. 1). The massifs of trees and shrubs build peculiar green "walls" that limit the open spaces and separate them to close-up (30–100 m) and deep or distant (300–400 m) perspective views.

A great pursuit of every designer is creating multilayered landscape views. These views are biggest "prize" for tourists after many time transitions. The creation and maintenance need proper stewardship of forest vegetation, which provokes the eyes to focus but also close the beautiful panoramic views.

When settling forest landscapes as recreation environment it is very important to position correctly points of accents. The example in Figure 2 shows properly defined place in the bend of a river as a

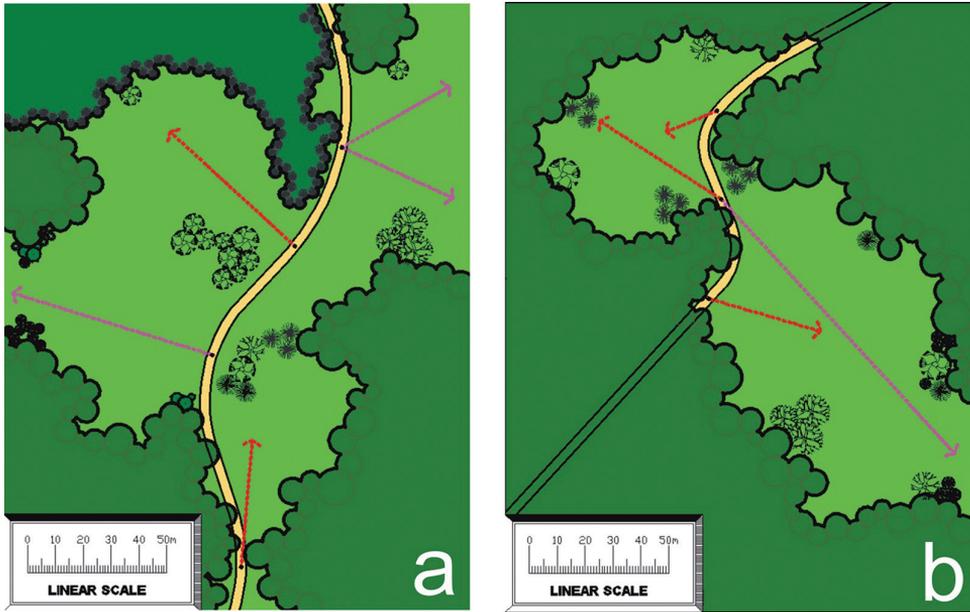


Fig. 1. Dynamics of perception of landscape views: a – slow alternation of close and deep perspective views; b – quick attention “switching” from close to deep perspective views.

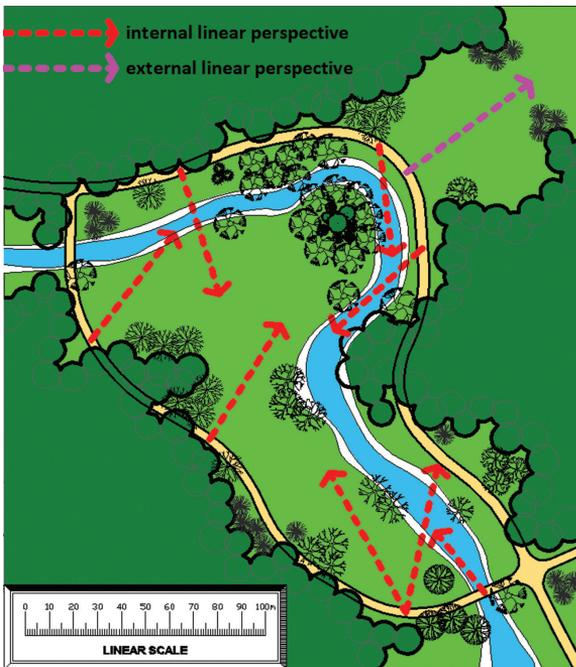


Fig. 2. Landscape design project of a space along a walking trail parallel to a stream.

focus on composition. There are several secondary accent groups of trees and several internal linear perspectives along the promenade are also designed.

These favourable aesthetic effects are also achieved in the spatial design of the coastal promenade in Figure 3. There are even deep and external linear perspectives to the opposite shores of the water area.

Among all landscape components, woody vegetation plays to greatest extent the strongest role in shaping the visual perspective views. These views are internal when the visibility is within the meadow or external when the visibility goes beyond the open space where the observer is.

Figure 4 illustrates how the vegetation determines the depth of

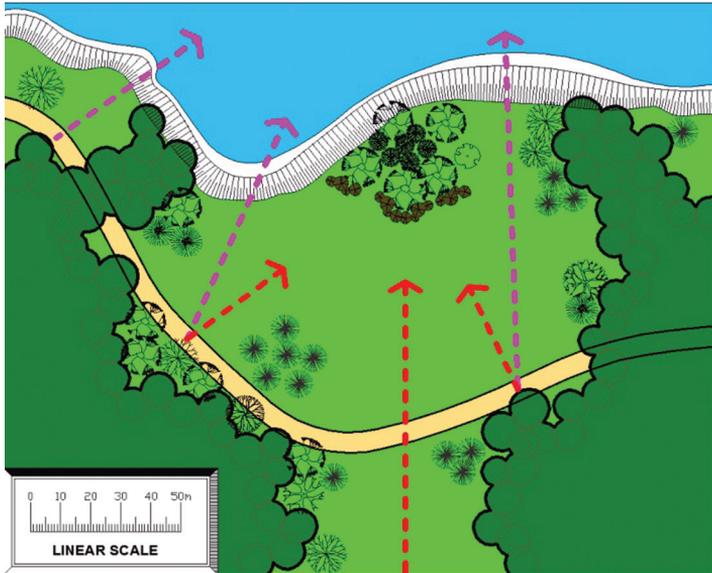


Fig. 3. Landscape design project for space planning along a coastal walking trail near the shore of a water area.

the view and serves as a barrier to short perspectives or as wings for external perspectives. Even greater is the impact of vegetation in shaping the visual frames, which exhibit perspective views.

As shown in Figure 5, visual frames can be on both sides of landscape views, but in some cases these frames can be of the three and even of the four sides of the natural picture. It may even represent an openwork screen that transmits the eyes of the observer beyond.

Conclusions

Artistic process during landscape planning requires creating spectacular views until we get the whole picture of a recreational forest landscape. Unlike urban environment where we have to comply strictly with the architectural framework, in forest areas we have to make much less

intervention and to take into account main environmental features. In order to make the design project more realistic and to ensure its subsequent implementation in real space it is advisable to use existing tree groups and massifs, which immediately or after a partial reconstruction could assume the functions of the relevant part of the perspective view.

In this case, some essential principles, combining parts of park perspective methods and spatial composition can make design process much meaningful and the resulting natural landscape more picturesque and attractive. Such principles must be sufficiently simple, fast and effective to provide an aesthetic forest landscape design.

As a result of the comparison of different objects, the following basic landscape modelling requirements for the formation of spaces along walking trails in forest landscapes can be derived:

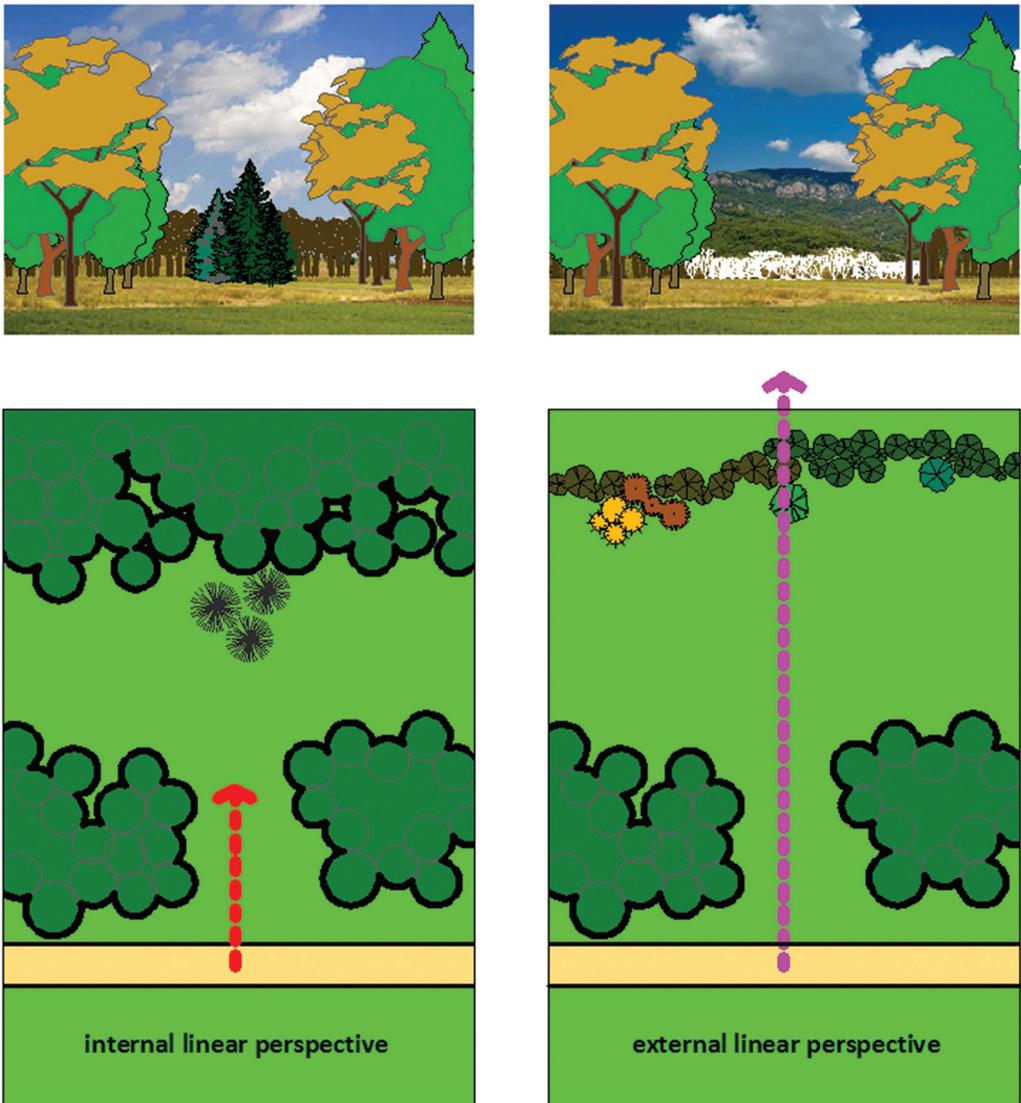


Fig. 4. Internal and external linear perspectives.

- consistency with natural conditions;
- creating maximum internal and external linear perspectives;
- maintain a measure of saturation with accents;
- correctly align the main accents;
- alleys are not axes of symmetry in

open spaces (forest meadows);

- perimeters of tree arrays and tree groups themselves should be constructed according to schemes that provide dynamic agility.

Nevertheless, each design solution must have its own logic, whatever it is. For

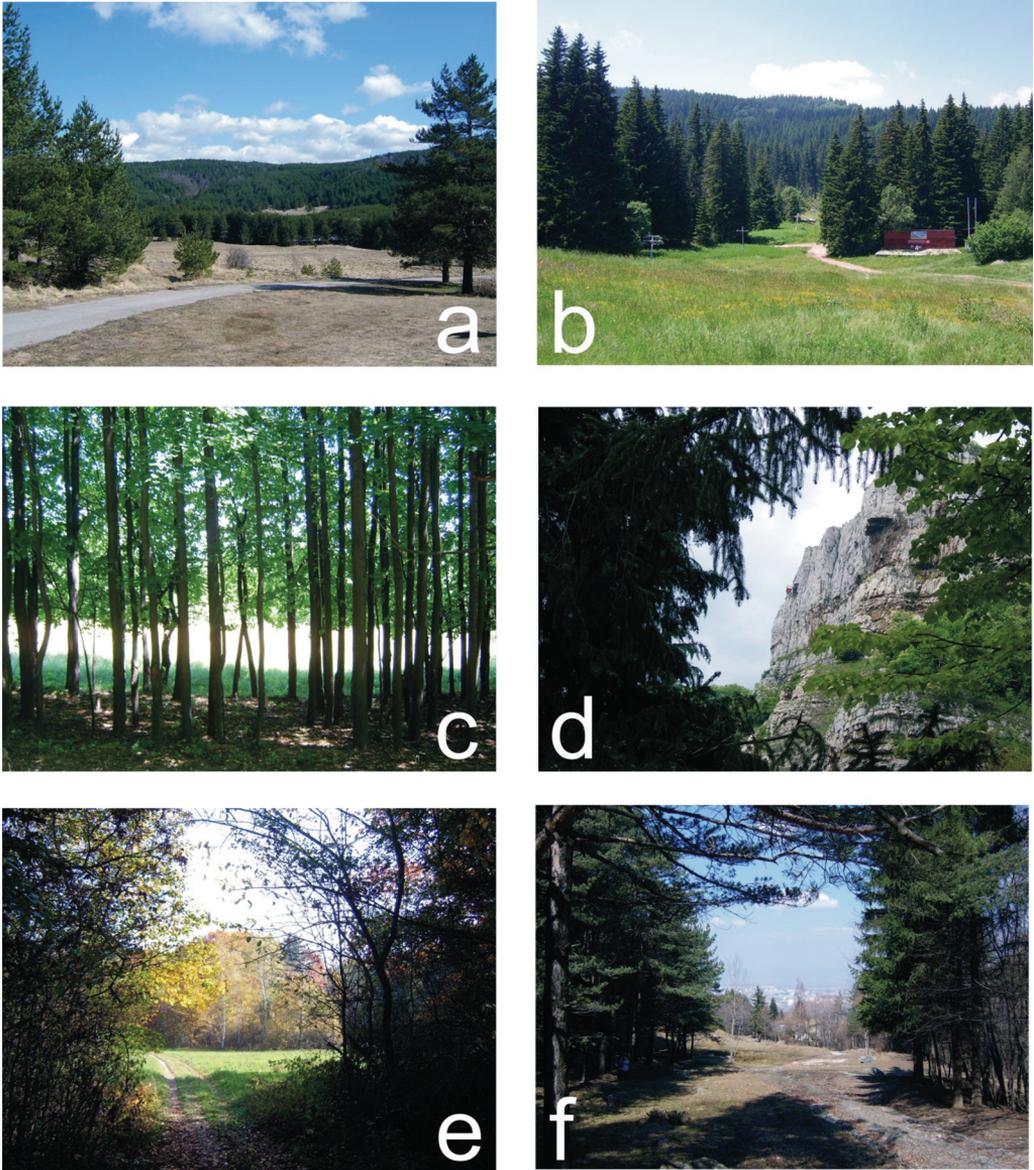


Fig. 5. Visual frames: a – wide visual frame to a landscape fragment without finishing accent; b – narrow visual frame; c – openwork barrier in front of the observer’s eye; d – visual frame from all sides; e – narrow visual frame side and top without finishing accent; f – narrow visual frame side and top with finishing accent.

most general reasons, in most cases, the logic is chosen to provide most panoramic landscape views (external linear pros-

pects). For internal perspectives, however, it would be better to bear in mind the last 4 of the listed above principles.

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