

LANDSCAPE-ARCHITECTURAL DESIGN IN THE RECREATION AREA NOVÁ DUCHONKA

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Abstract

The recreation area Nová Duchonka represents a significant tourist potential. The large area of 17 hectares is located in the birch-pine forest with open area around the water reservoir. In the socialist era, Nová Duchonka was one of the most popular locations for recreation in Czechoslovakia with quite wide range of visitors. The goal of the landscape-architectural solutions was to adapt the natural potential to current needs and use, as well as to trends that will contribute to the regional development of the territory. Landscaping includes various measures that aim to preserve and improve the natural environment with the support of biodiversity and at the same time create an attractive and functional environment for visitors. The article deals with various landscape solutions, attitudes and design work with an emphasis on recreation, created by students at the Institute of Landscape Architecture from SPU in Nitra. From the point of view of the research by design approach, the paper defines key principles of design that students applied in their design solutions.

Keywords: recreation, landscape architecture, environmental education, biodiversity

Introduction

Man adds the face of a cultural landscape to natural conditions. In historical development, he left a different legacy of his influence, depending on social and cultural development in the context of the boundaries of knowledge, technical maturity and the organization of life (Otahel' et al., 2008, Tóth, Feriancová, 2019). First of all, we need to know the recreation landscape as a natural wealth and cultural heritage well so that we can continue to use and develop it for the next generations (Fornal-Pienak; Bihuňová, 2022, Bechera et al., 2022). In this sense, the concept of sustainability is based mainly on the harmonious use of natural resources and the development of the country. The forest, as the most important part of natural ecosystems, provides a wide range of possibilities and offers for recreational use within ecosystem services (Hrdoušek et al., 2014, Tóth et al., 2018, Supuka et al., 2019, Čibík et al., 2022). Many parts of the forest landscape were anthropogenically modified for the needs of recreation, which improved the availability and performance of recreational activities, but also the complex of information, accommodation, refreshment, cultural and experiential services (Pichlerová, 2007, Bell et al., 2009, Fialová, 2010, Čibík et al., 2022). Dominant elements in the recreational landscape are also water bodies. Modifying their surroundings and making them technically accessible for recreation, and at the same time protecting them in terms of rare locations and biotopes without damaging them, are among the great challenges in landscape design (Supuka, 2013, Čakovská et al., 2019, Kuczman et al., 2022). The spectrum of all recreational activities and services used, especially of a social nature, fundamentally affects and shapes the landscape's resilience (Bihuňová et al., 2021, Kuczman et al., 2024.).

Materials and methods

The development of the concept of a landscape-architectural solution in the Nová Duchonka recreation area was a practical assignment for students of the Landscape Design Studio course at the Institute of Landscape Architecture FZKI, Slovak Agricultural University in Nitra. The request for the revitalization of the area in question was a mandate from the management of the Nová Duchonka recreation area administrators, the Nitra tourism organization and representatives of the municipality of Prašice, to which the recreation area belongs. The village of Prašice is located in the Topoľčian district, which is part of the Nitra region. The favorable climatic conditions of the Považské Inovec mountain range and the water reservoir itself in the birch-pine grove make the Duchonka recreation area attractive for summer holidays by the water, with a rich offer of hiking and cycling. for mushrooms, fishing, water sports and summer fun. rich sports and cultural activities (PHSR, 2022). The dominant feature of the recreation area

and the main attraction for vacationers is the water reservoir, which is located in the northwestern edge of the village. Its volume depends on the inflow of surface water, mainly from the Železnica stream, which maintains its level (Prašice, 2023). The origin of the name Duchonka probably dates back to the Middle Ages and is related to the iron processing metallurgy that was discovered. At least four blast furnaces for iron smelting were built here in the 9th century, along with a system of water reservoirs, cascades and supply channels. The first earthworks began in 1961, when they built an asphalt road from Topoľčany through Prašice to Duchonka. The recreation area belonged to one of the largest autocampings in Czechoslovakia with an area of 20 ha (Camping Nová Duchonka, 2021).

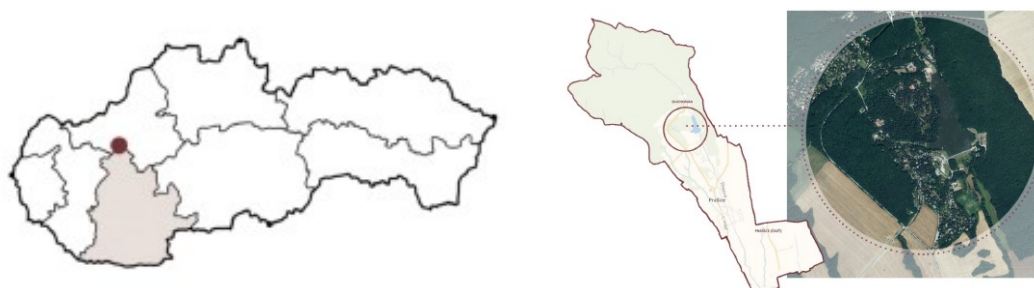


Fig 1: Localization of the addressed territory within the Slovak Republic and the addressed territory within the c.ú. Prašice.

Two years in a row, the Duchonka recreation area won the "Golden Rose" award as the best car camp in Slovakia in 1986-1987. After the fall of the communist regime, subsidies from the state and about Duchonka stopped. The hotel also burned down, the ruins of which still stand in one of the most beautiful locations near the reservoir. These historical statistics and facts confirm the attractiveness and importance of space in the country, on which it is necessary to build and further develop them for the current needs and trends in agritourism. In 2020, a group of enthusiasts wanted to contribute to the "rebirth" of travel and tourism with their activities (Camping Nová Duchonka, 2021). A dendrological survey of the entrance part of the Nová Duchonka area was carried out, according to the arborist standard (Paganová et al., 2018 a.), which shows the predominance of the taxon *Pinus sylvestris* L., with an admixture of the following taxa: *Junglas regia* L., *Prunus avium* L. and *Betula pendula* Roth.. Other extensive areas of stands, with a total area of 6660 m², were mapped according to the methodology intended for mapping non-forest woody vegetation Supuka et al. (2013), where the greatest representation of the taxa *Swida alba* L. and *Salix alba* L. was found, the admixture consisted of the taxa *Crataegus laevigata* (Poir.) DC., *Populus alba* L., *Prunus spinosa* L. and *Rosa canina* L. Existing woods, which have been identified in terms of security threats need to be treated by an arborist for their preservation and further perspective in the space. From the point of view of the research by design approach, the aim of the paper is to define the key principles of design that students apply in their design solutions. The method consisted of two main parts: 1) analysis (broader relationships, historical, functional, spatial, landscape analysis, as well as woody vegetation mapping. 2) design (students worked in design groups, from which various design concepts arose, divided into functional zones of the recreation area Nová Duchonka (Kuczman et al., 2023).

Results

The result of the design process is various design concepts divided into functional zones, full of many creative ideas and solutions. Students presented design concepts in the recreation area Nová Duchonka with innovative but at the same time close to nature solutions. The proposals support the preservation of biodiversity and natural infiltration of water in the landscape. One of the main tasks was the design of a new, representative main entrance to the Nová Duchonka recreation area, which was selected at the opposite end of the area, with the aim of building a retaining parking lot for caravans 'Stehlplatz' for a higher capacity than it is currently, see Fig 2, marked functional zone number 1. The basic element of the new, proposed entrance is a massive wooden gate, which will serve as the main entrance to the recreation area, visualized in Fig. 3. The entrance gate will be supplemented with the logo of the recreation area Nová

Duchonka, with a supplemental orientation map of the area with additional information in the form of a QR code. Part of the entrance are proposed storage areas for bicycles and charging stations. Right next to the main entrance, a new, modern and ecological parking lot with trees has been built. The parking lot has two entrances. One is intended for caravans and buses. The second entrance to the parking lot is used primarily for passenger cars, parking for disabled people and motorcycles. The new parking lot offers 201 parking spaces for cars, 9 parking spaces for disabled people, 16 parking spaces for motorcycles and 18 parking spaces for caravans and buses. The newly built area is completed by the trees *Acer campestre*, *Pyrus calleryana* 'Chanticleer', *Pinus sylvestris*, *Pinus nigra*, a total of 66 trees. Trees in parking lots fulfill an important ecological and aesthetic function, at the same time they optically connect the newly built space to the landscape. Areas of flowering meadows on an area of 1700 m² and flower beds with various types of perennials on an area of 850 m², spring bulbs on an area of more than 520 m² and renovated grass areas on an area of 3180 m² take on a representative function, see Fig. 3 Beds of undergrowth support the biodiversity of the space, attract insects and other animals that are important for the ecosystem. In addition to aesthetic and ecological benefits, plants will also have a significant recreational and psychological effect.



Fig. 2: and Fig. 3: Visualization of the proposed new entrance area and visualization of the proposed parking area in front of 'Stehlplatz' (Kuczman, G., et al. 2023).

Other functional zones (Fig. 4) sensitively complete the existing spaces of the recreation area. Exceptional views are highlighted by an architectural element in functional zone 3 in the form of a view through a 'French window'. The completion of the space around the cabins with a view of the dominant water surface is marked in zone 4. The atmosphere of camping and fire pits is characterized by zone 5. In zone number 6 there are original species of orchids, which are designed in the project to protect against unwanted trampling by tourists in the form of an extended wooden walkway, which guides visitors through this exceptional natural space. In a more remote part of the area, in zone number 7, there are proposed cabins in the crowns of trees, supporting direct contact with nature. The Duchonka water reservoir is the biggest attraction of the space (zone no. 8), around which a number of interesting elements of small architecture are proposed, supporting relaxation as well as sports enjoyment in the space.

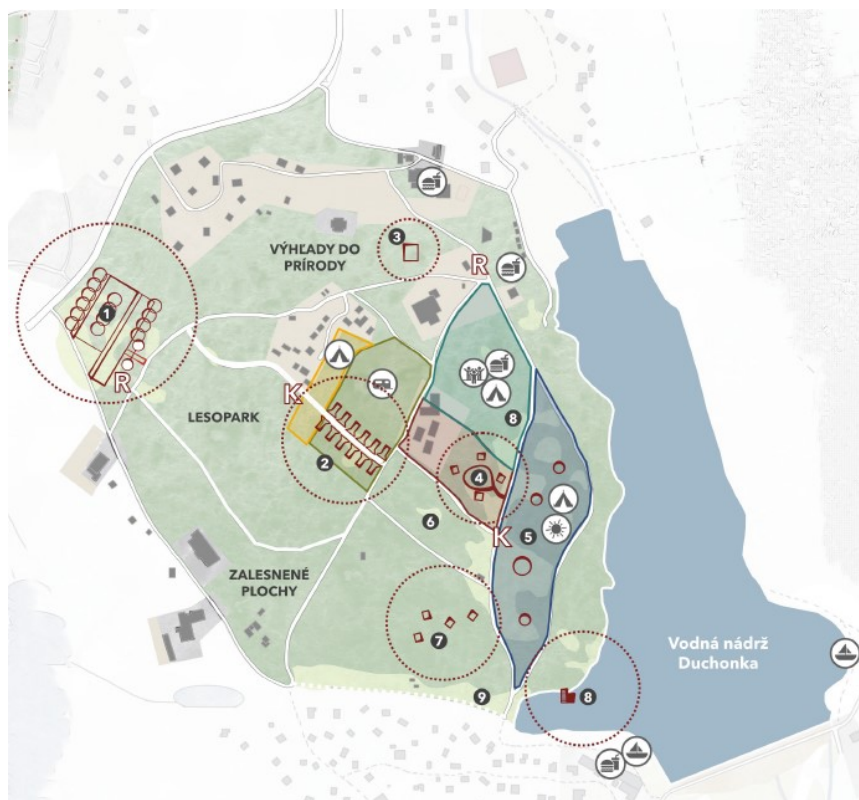


Fig 4: Situational plan of the proposed functional zones (Kuczman, G., et al. 2023) 1) new entrance 2) Stellplatz-areas 3) 'French window' 4) cabins with a view of the water, 5) fireplaces in the camping area, 6) orchids - educational trail, 7) cabin in the treetops, 8) joint activities.

An important part of the project is the tree protection plan against construction activity, which applies to revitalization and construction in the entire area. The protection zone of woody plants represents an intact zone, from which activities that potentially disrupt the integrity of wood as a living organism, namely its above-ground and underground organs and vital functions, are excluded. (Paganová et al., 2018 b.).

Conclusion

The presented landscape-architectural solutions point to the possibilities of restoring the recreational landscape space through solutions close to nature. The proposed elements in the individual functional zones offer various opportunities for recreation, with the aim of making the important space more attractive from the point of view of its long-term tradition. At the same time, however, it draws attention to the preservation of natural and cultural wealth in the region. The final landscape-architectural solutions were presented at a public meeting in the presence of the task assigner and concerned authorities as well as those interested and enthusiasts for the improvement of this important biotope in the country.

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Souhrn

Příspěvek představuje krajinně-architektonická řešení, která poukazují na možnosti obnovy významného rekreačního krajinného prostoru Nová Duchonka, které se nachází v Západoslovenském kraji. Požadavkem na revitalizaci pověřilo Slovenskou univerzitu v Nitre (ÚKA) samospráva obce Prašice, s vedením správců rekreačního areálu Nová Duchonka a Nitranskou organizací cestovního ruchu. Navrhované prostory areálu jsou členěny do

tematických funkčních zón, do kterého jsou dotvořeny prvky, za účelem zvýšení atraktivit rekreace. Použita jsou přírodě blízká řešení, s důrazem se zachováním původní bioty prostoru. Navrhované vegetační úpravy přispívají ke zvýšení biologické rozmanitosti a anfiltraci dešťové vody v krajině. Závěrečná krajinně-architektonická řešení se prezentovala na veřejném zasedání za přítomnosti zadavatele role a zájemců o zvelebení tohoto významného rekreačního stanoviště v zemi.

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