UNIVERSITY OF LIFE SCIENCES "KING MIHAI I"
FROM TIMISOARA
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IN APPLIED LIFE SCIENCES"
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ARCHICAD EDUCATION VERSION

RETHINKING THE FOREST. NEW LANDSCAPE DESIGN PERSPECTIVES REGARDING THE CONNECTIVITY OF THE DEALUL MINEI AREA, BAIA SPRIE

University of Agricultural Sciences and Veterinary Medicine
Faculty of Horticulture and Rural Development
Universitatea de Științe Agricole și Medicină Veterinară, Cluj-Napoca
Facultatea de Horticultură și Afaceri în Dezvoltare Rurală

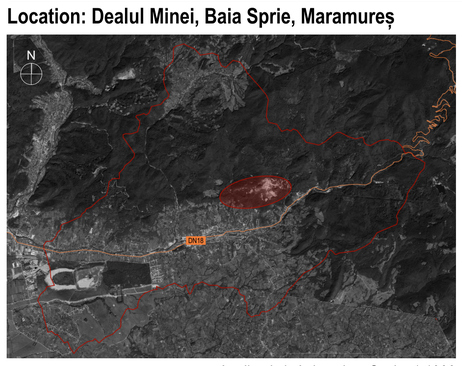
Authors

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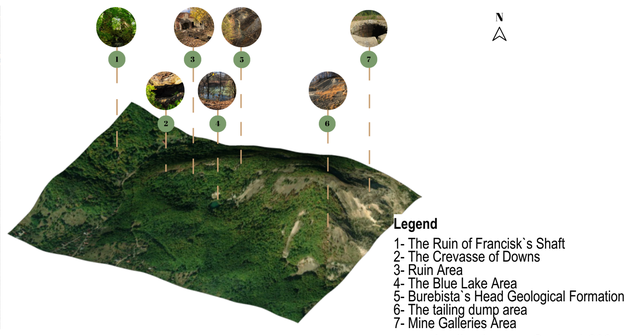
Scientific coordinator Sef. lucr. Dr. Sonia Bodea

Master of science:
The design, arrangement and maintenance of green spaces, 2023

Location: Dealul Minei, Baia Sprie, Maramureș



Analized site's location. Scale: 1:1000



Analized areas. Scale: 1:300

ABSTRACT

The health and well-being of urban population is influenced by many factors, from the hustle of the city to the negative effects of pollution. More and more cities are facing a common set of problems developed on the basis of activities that are increasingly harmful to the environment. Green spaces on the perimeter of cities are not enough to combat or fade the effects of pollution. That is precisely why urban forests bring huge benefits in terms of improving air quality, reducing noise and atmospheric pollution or restoring the well-being and health of the inhabitants.
The design concept aims to open the mining site to the city, considering its potential for the development of a park and buildings compatible with tourism, culture and research. The project fixes the deficiencies found following the analysis of the existing situation and provides a harmonious, interactive and appropriate framework for relaxation and contemplation, allows the active involvement in all proposed activities of all age groups.

INTRODUCTION

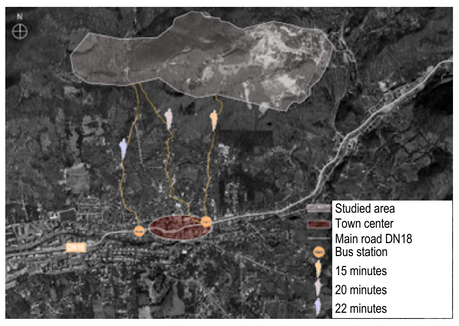
Every living organism on Earth benefits from the advantages of forests, be it humans, animals or plants. Just as the air is filtered with the help of these ecosystems, the same benefit is given to surface or groundwater. The larger the forested areas, the healthier the entire planet. Thus, forests successfully contribute to reducing pollution and supporting biodiversity [1].
The forest-park concept is forward-looking, dynamic and focused on strengthening the resilience of landscapes and on innovative ideas to further adjust and optimize ecosystem goods and services as societal needs change or new challenges arise [2].Within the concept, planning focuses on the landscape as a whole, not on individual sites, so ecological, social and economic priorities can be balanced [3].
The mining industry has significant influences on the environment, manifested during all stages of the technological production process [4]. Besides the changes that mining brings to the air and waters, this practice leads to irreversible changes in the relief [5]. Degraded lands have the potential for restoration and reintegration into public use through diverse methods and for various purposes [6]. As part of the rehabilitation process, former mining sites could be transformed into tourist destinations, showcasing their historical significance [7].



Images from the site

MATERIAL AND METHOD

This touristic forest is recognized at European level thanks to the Blue Lake, being a natural monument. Following an in situ analysis we discovered the high potential of this area related to vegetation and several zones that have an important value.
The existing trail consists of natural pathways, sometimes difficult to cross due to the slope and the topography of the area. The data's collected was carried out by visual analysis of all component detected in the area. The route is not clearly defined making it difficult to pass, being also in a forest area, and it is easy to get lost. The studied area is not very accessible, it is possible only by forest roads, as it is densely overgrown with vegetation. The time to walk the distance between the city center and the limit of the site is no more than 22 minutes.



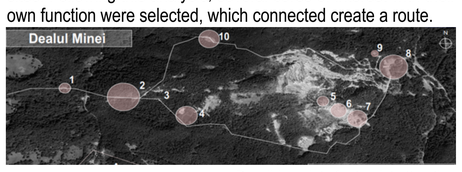
Site connectivity at macro scale. Scale: 1:500

During the walk in the forest, the vegetation was observed and evaluated. There were identified several forest tree species, some even protected for their multiple benefits. In the overall composition of the forest, beech predominates 70%, together with spruce 6%, *Quercus petraea* and oak (*Quercus robur*) 8%, hornbeam (*Carpinus betulus*) 6%, birch (*Betula pendula*) 2%, edible chestnut (*Castanea sativa*) 1%, various hard (*Alnus glutinosa, Ulmus glabra*) 3%, *Taxus baccata, Pinus sylvestris* 3%, *Tilia tomentosa* 1% [2]. Protected species in this area include Douglas-fir (*Pseudotsuga menziesii*) and chestnut [13].



Species:*Quercus petraea*,*Betula pendula*,*Ulmus glabra*,*Pinus sylvestris*

A lot of positive aspects were observed, especially from a visual point of view regarding the focal points and spectacular perspectives of the place. A few ruins of the former mine are subtly visible, that create valuable focal points. Also, thanks to the hilly topography, from the high points you can admire delightful views, both of the city, the forest, and of the mining sites. Following this analysis, several cores of interest with their own function were selected, which connected create a route.



Possible points for tourist attraction



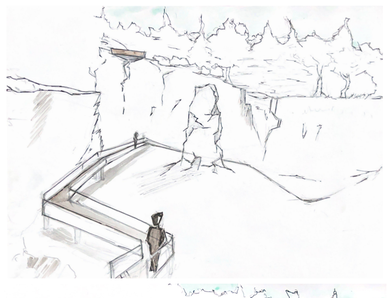
Views, perspectives and points of interest

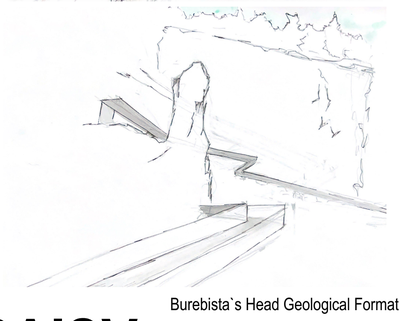
The Blue Lake Area

The lake is the core on which the entire project is focused, being the area with the greatest openness and at the same time the most malleable in terms of the diversity of activities. It is proposed to build two platforms, one for observation, located at a higher height, and the other is a water access point (Fig. 8). The natural platform next to the lake is designed as a place for dining and relaxation, and a children's park has been designed nearby. Also, a pavilion for sitting and observing will be built on the flat surface at the top of the lake. All the furniture elements are made of wood and ecological materials.

Burebista`s Head Geological Formation

The design of this area involves the construction of an interactive route along the geological formation. The route will be constructed of metal grating and glass railings precisely to be able to look through it for a different experience. However, the interesting part of this landscape design is that the track follows the shape of the rocks. Furthermore, the new route leads the tourist to the base of the geological formation, and then to the highest part of the precipice.

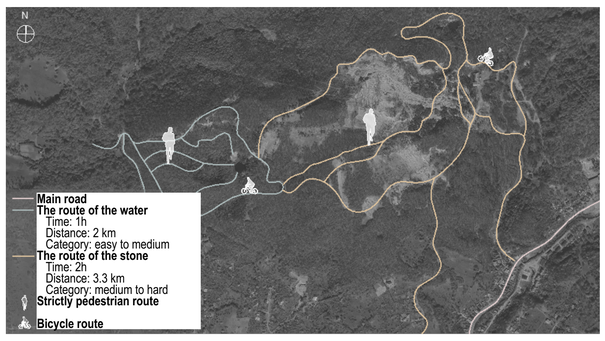




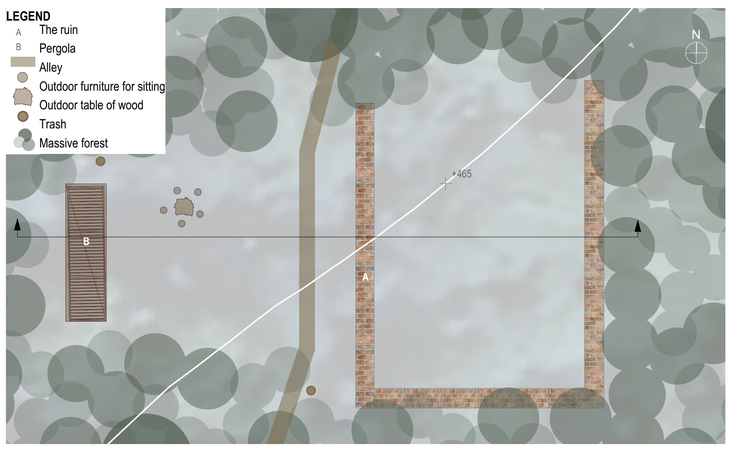
Burebista`s Head Geological Formation

RESULTS AND DISCUSSION

Following the visual analysis, seven areas were selected to create a new touristic attraction points, which are going to be focused on people and the history of the place. These zones are characterized by distinct particularities in terms of the distinct topography, vegetation and the objectives with tourist potential identified.



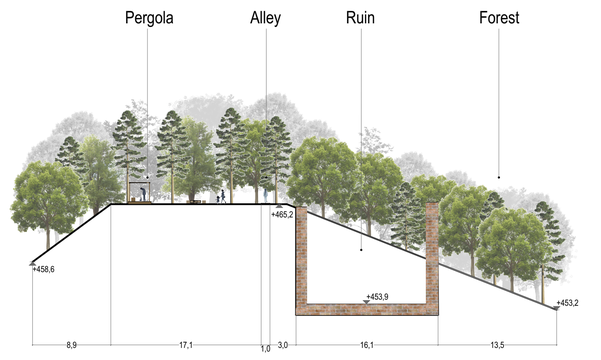
New routes plan. Scale: 1:300



The Ruin of Francisk`s Shaft design plan. Scale: 1: 800

The Ruin of Francisk`s Shaft

Unique historical and architectural construction is highlighted by using a seating area. The platform proposed is located at the same level as the height of the ruin, and in order to be able to descend next to the ruin, an wooden alley was proposed.



The Ruin of Francisk`s Shaft plan section. Scale: 1: 800



The Ruin of Francisck's Shaft - sitting area



The Ruin of Francisk`s Shaft - large perspective



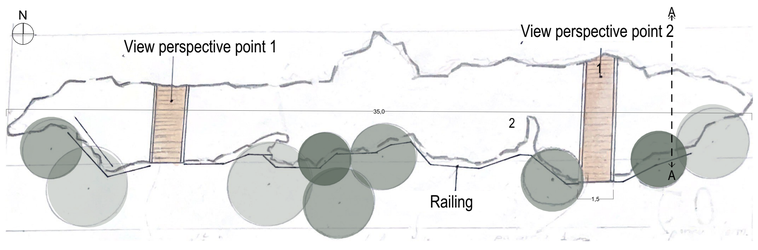
The Ruin of Francisk`s Shaft - Pergola perspective



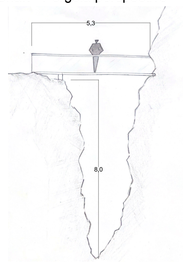
The Ruin of Francisk`s Shaft - perspective

The Crevasse of Downs

As part of the landscaping project, it is proposed to secure the area through architectural design elements with the aim of giving the space a new function, namely a unique observation point. The new design involves the placement of two bridges across the width of the crevasse, which aim to create a perspective on the fascinating view. Bridges and chasm edges will be secured with safety glass railings. The structure of the bridge is made of wood to harmonize with the surroundings.



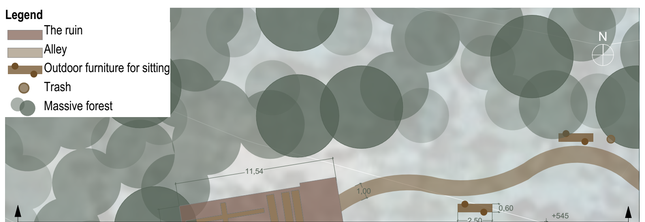
The Crevasse of Downs design plan. Scale 1:800



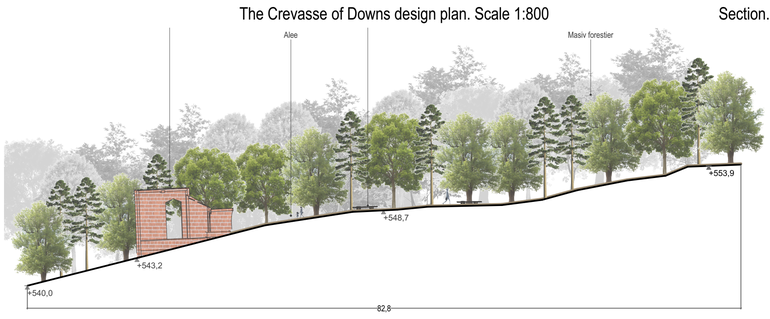
Section. Scale 1:600



The Crevasse of Downs perspective



Ruin Area - Historic Art Gallery design plan. Scale 1:800



Ruin Area - Historic Art Gallery plan section. Scale 1:800

Ruin Area - Historic Art Gallery

This area housed an important place in the history of mining, becomes an art gallery with images from the town's past. It is intended to preserve the ruin in order not to destroy a part of history, but to restore its functionality. Thus, tourists can better understand the cultural roots of the place and learn interesting things. Two wooden benches will be placed along the alley.



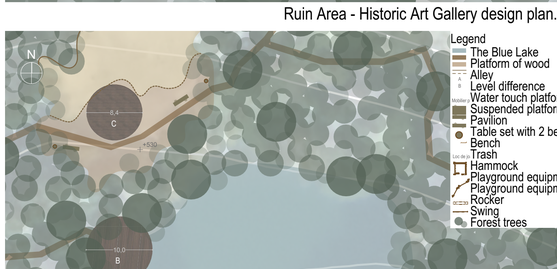
Ruin Area - Historic Art Gallery sunset view



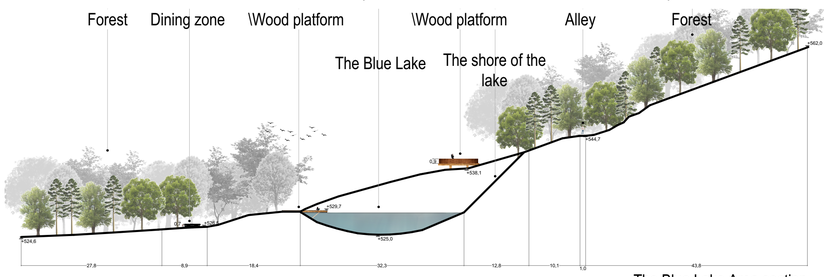
Ruin Area - Historic Art Gallery



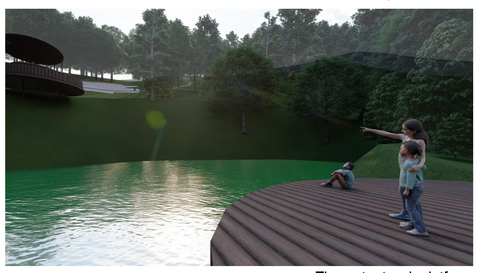
Ruin Area - Historic Art Gallery outside view



The Blue Lake Area design plan



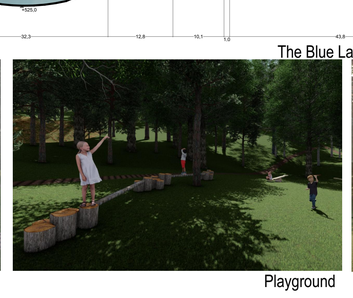
The Blue Lake Area section



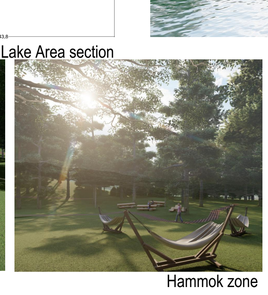
The water touch platform



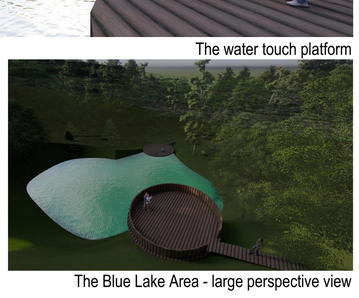
The dining area



Playground



Hammok zone



The Blue Lake Area - large perspective view

The Tailing Dump Area

The tailing dump area is characterized by an infertile soil, only a few spruce trees survive in this area. Following the observation field study, in this area the main objective is to renaturate the degraded land by sowing meadow species seedlings. In addition to the benefits that meadows have on degraded soils, they create a wonderful and colorful setting. The staggered flowering of the species is another aesthetic advantage. However, the area is surrounded by forest, and due to this, some structural wooden elements that amplify the sounds of nature will be place along the alley.



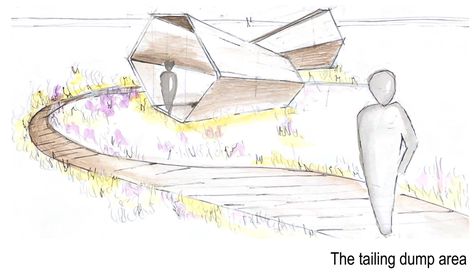


The tailing dump area render

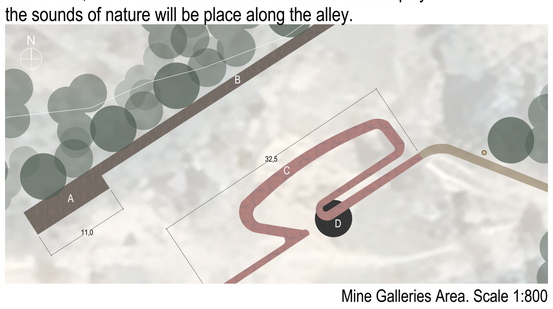
Structural wooden elements that amplify the sounds of nature



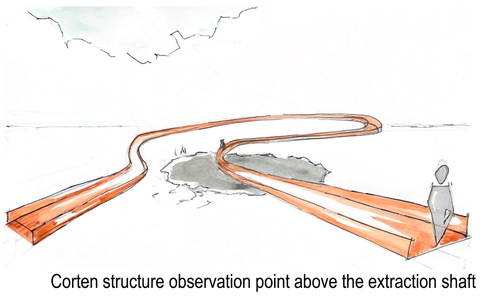
The tailing dump area section. Scale 1:800



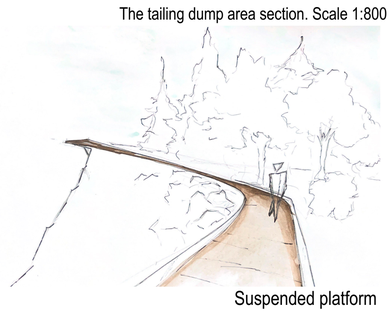
The tailing dump area



Mine Galleries Area. Scale 1:800



Corten structure observation point above the extraction shaft



Suspended platform

Mine Galleries Area. Currently the mine galleries and ore extraction shafts are closed to the public, because of the risk of serious accidents. Due to the history and cultural value of the entire mining area, the new layout aims to open it up to tourists. The project has as its first objective the safety of the users, and for this it is proposed to place a corten structure as an observation point above the extraction shaft. The main goal is to satisfy the curiosity of tourists and stop them from approaching extraction shaft without any safety. To add dynamism in this area, the new landscaping design involves the construction of a platform that follows the level curve and ends with another suspended platform, from where the view is surprising.

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