

# A LANDSCAPING APPROACH OF THE PROJECT: RESTAURATION AND REABILITHATION OF ARCALIA ARBORETUM

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**Abstract.** In the last decades, the restoration and rehabilitation works for Romanian historical monuments took a quite great dimension. On the other side, approaching the historical landscape requires a close-up view of the whole issues regarding re-construction of those sites, and their reinstatement in the present context. For the Arcalia Arboretum, a team of landscapers took the task of restoration all vegetation elements. First, an inventory was made for all trees and shrubs, late in the year 2014. This inventory was compared with a former inventory, back in '70, the best preserved from the past. All the rehabilitation proposals aimed both dendrological and maintenance aspects.

**Keywords:** arboretum, rehabilitation, historical landscape.

## INTRODUCTION

The architectural and landscape ensemble known as „The Bethlen Castle and The Arcalia Arboretum” has existed for over 150 years and at the present day, according to the list of historical sites and monuments belonging to Bistrița-Năsăud County, it is declared to be a historical monument with the no. BN-II-a-A-0614. The existent bibliography does not provide any exact data about the year when the arboretum was founded. Based on the descriptions included in *Arokalji énekek*<sup>1</sup> poetry volume, it can be concluded that at the middle of the XVIII century the arboretum existed, but the buildings and the garden were much older. In 1801 the forest above the castle was turned into an English garden. The mark of the roads, the alleys and the plantation can still be recognized. During the XIX century a number of exotic and aboriginal species were planted in the arboretum and new alleys and patches were implemented.

Nowadays, the arboretum covers an area of almost 16 hectares and it still contains a sinuous alley system, mostly on the old layouts, which establishes promenade possibilities through forest areas, plantations and meadows. All along the promenade path are located samples of trees and shrubs with a unique ornamental and dendrological value. Unfortunately, the low level of maintenance during the last decades leads to a strong degradation, mostly among the wooded areas. Extended areas which were once for promenade, with decorative or topiary vegetation, are now a wildwood of spontaneous species. The ensemble from Arcalia benefits from a particular situation, meaning that even though it does not cover a very large surface comparing to other arboretums in our

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<sup>1</sup> Iklandi, Gy. L., *Arokalji énekek* (Songs from Arcalia). Kolosváron, 1811

country<sup>2</sup>, the castle, the adjacent gardens and the arboretum are a landscape unit of great value.

## MATERIAL AND METHODS

According to the possessed data, received from U.B.B.<sup>3</sup>, we can estimate that at the beginning of the XX century, the arboretum had over 200 dendrological species in its own plantation, with almost 3.700 samples of trees and shrubs (Fig. 1), as it follows:

- approx. 80 species of deciduous trees;
- approx. 70 species of deciduous shrubs;
- approx. 15 species of evergreen trees;
- 2 species of evergreen shrubs;
- approx. 20 species of perennial flowers;
- over 15 species of annual flowers;
- approx. 7 species of ornamental grasses;
- an unknown number of spontaneous and sub-spontaneous species gathered most probably from the local flora.

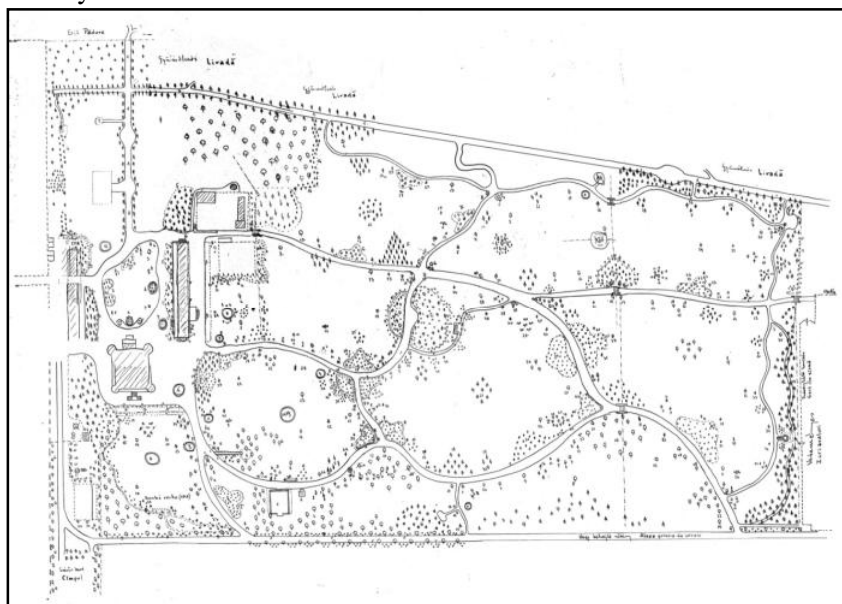


Fig. 1. The general landscaping plan of Arcalia Arboretum, dated approx. 1970-75 (image source: original, re-assembled, according to the sketches from U.B.B. Cluj)

In present days, according to the inventory made at the end of 2014, on the arboretum territory there were only approx. 100 species left in the collection, with approx. 3.500 samples (Fig. 2), as it follows:

<sup>2</sup> The Simeria Arboretum: approx. 70 ha, The Bazoș Arboretum, jud. Timis: approx. 60 ha, The Hemeiuș Arboretum, jud. Bacău: approx. 50 ha, The „Dr. ing. Ion Vlad” Arboretum from Alba Iulia: approx. 20 ha, etc.

<sup>3</sup> The „Babes-Bolyai” University from Cluj-Napoca administration released to the authors a copy of a document emitted in 1971-73, document which figures a planting scheme and a list of species, including the approximate plantation data.

- 50 species of deciduous trees (1.530 samples);
- 20 species of deciduous shrubs (approx. 1.250 samples);
- 20 species of evergreen trees (680 samples);
- 5 species of evergreen shrubs (10 samples);
- 3 species of perennial flowers (under 10 samples);
- an unknown number of annual flowers species.

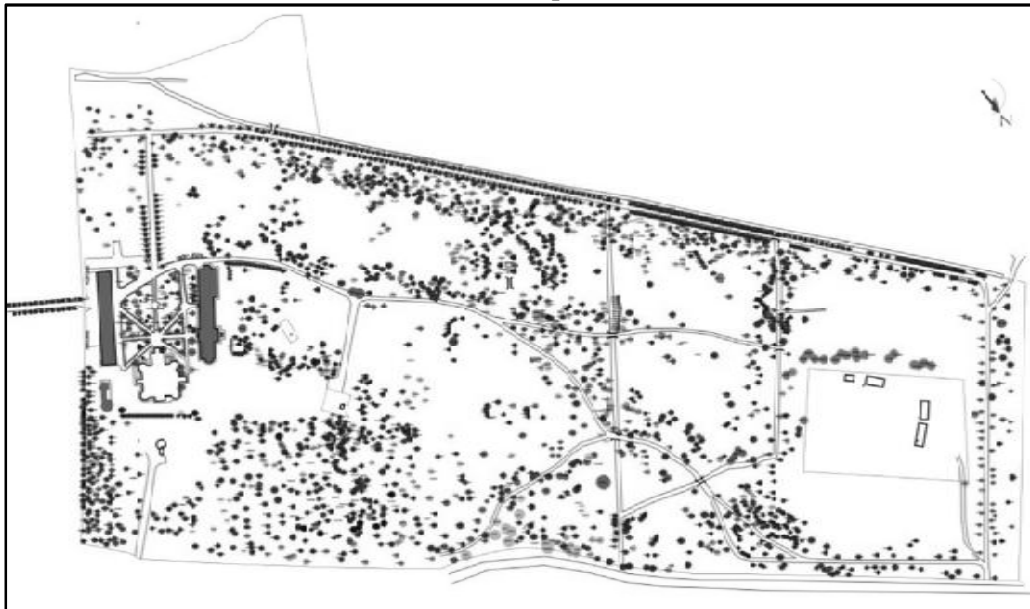


Fig. 2. The dispersion of trees and shrubs on the actual territory of Arcalia Arboretum (image source: original, according to the data from the inventory performed in 2014)

Comparing the two plans, it can be noticed the differences between the array of species from the '70's (over 200) in relation to only 100 species left in 2014. Starting from the definition of the term *arboretum*<sup>4</sup>, it can be affirmed that the Arcalia site fulfilled the function of an arboretum at a higher level 4-5 decades ago than now, meaning that in the last four decades, from the number of species among the arboretum remain only half<sup>5</sup>.

Most of the valuable dendrological collection is located in the small courtyard surrounded by three main buildings (Bethlen castle and the other two buildings), while in the rest of the Arboretum are only sporadic samples of trees with botanical or biological importance (for example: *Quercus imbricaria*, *Q. palustris*, *Liriodendron tulipifera*, *Taxodium distichum*, *Sorbus torminalis*, *Abies balsamea*).

<sup>4</sup> „tree plantation in which are conserved some aboriginal species or where the species originates from different fito-geographical areas of the globe are acclimatized. In the arboretum structure are included both forest trees, and fructiferous and ornamental ones”, acc. V. Sonea, *The Small Horticulture Encyclopedia*, Encyclopedia and Scientific Ed., 1983, p. 55.

<sup>5</sup> In an article from 1965, the authors A.T. Szabo and O. Zăpârțan affirm that „Botanically speaking the park presents modest abundance. After a summary determination, performed in 1964, were identified 104 trees and shrubs species and varieties. [...] there were numbered and anchored on the park's map 1374 trees whose diameter exceeded 10 cm. („Arcalia Arboretum” from the publication „Botanical contributions”, p.107-113)

## RESULTS AND DISCUSSIONS

The restoration proposal of Bethlen Castle landscape ensemble, is correlated with the premise from which it begins the process in discussion. According to THE FLORENCE CHARTA, „a historic garden is an architectural and horticultural composition of interest to the public from the historical or artistic point of view, as such, it is to be considered as a monument”<sup>6</sup>. According to the art. 16 from the same Florence Charta, „restoration work must respect the successive stages of evolution of the garden concerned. In principle, **no one period should be given precedence over any other**, except in exceptional cases where the degree of damage or destruction affecting certain parts of a garden may be such that it is decided to reconstruct it on the basis of the traces that survive or of unimpeachable documentary evidence. Such reconstruction work might be undertaken more particularly on the parts of the garden nearest to the building it contains in order to bring out their significance in the design”.

The Bethlen castle’s „patio” faces a unique problem. At this moment, it appears to be a space „suffocated” by trees and shrubs whose growth was lost out of control in the last decades. For sure, in the past the situation was completely different, fact that is certificated, on one hand, by the studied plans, and on the other hand, by the historical pictures of the site in. In a 15 years old aerial image, it can be observed that the „thickness” level of the courtyard was significantly smaller (Fig. 3).



Fig. 3. Aerial image of Bethlen Castle’s courtyard, approx. year 2000 (source: Georg Gerster, [www.siebenbuerger.de/ortschaften/kallesdorf](http://www.siebenbuerger.de/ortschaften/kallesdorf))

In the image can be observed that, at that time, there were samples of evergreen trees only on the E and W sides of the courtyard (the cluster of pine spruces from the N-E of the castle does not exist anymore), and the dimensions of the remaining samples of trees and shrubs were much smaller than the actual spread. Nowadays, the visual space is

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<sup>6</sup> The Florence Charta, 1981, Art.1.

obscured, making it almost impossible to visualize, at the same time, all the three main buildings.

In the diagram below (Fig. 4) it can be noticed the way how this courtyard was modified, from the initial state at the beginning of the XX century until the 80's, and further, the existing thickness level of the vegetation.

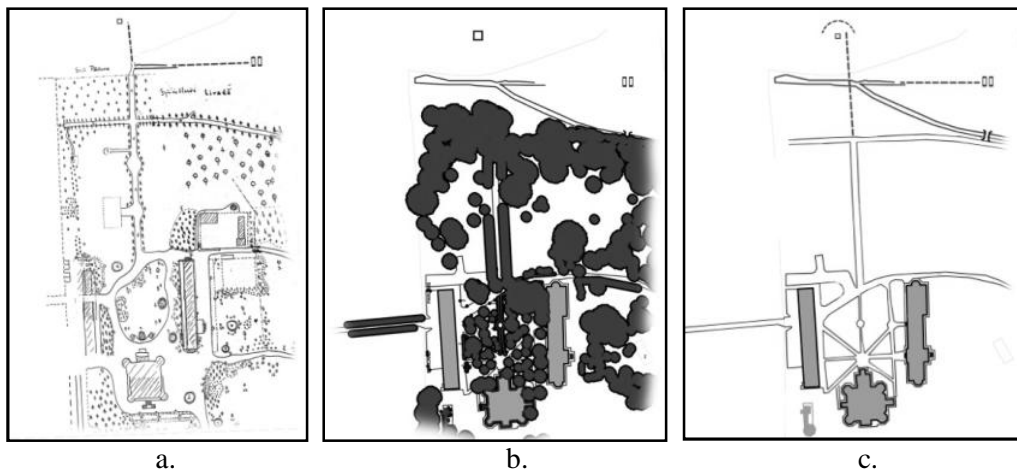


Fig. 4. a. The courtyard in the '70, with relations towards Bethlen monument and tombs; b. The courtyard this days, to be noticed the vegetation's thickness; c. One possible design for the alleys, re-establishing the connection with the monument and the tombs. (image source: original)

For the designed situation, it is proposed to remove most of the trees from the courtyard, in order to come back to an „airy” level which can permit the full visualization of the space. The need of removing the vegetation from the castle's courtyard is also obvious from the analysis of the section below (Fig. 5).

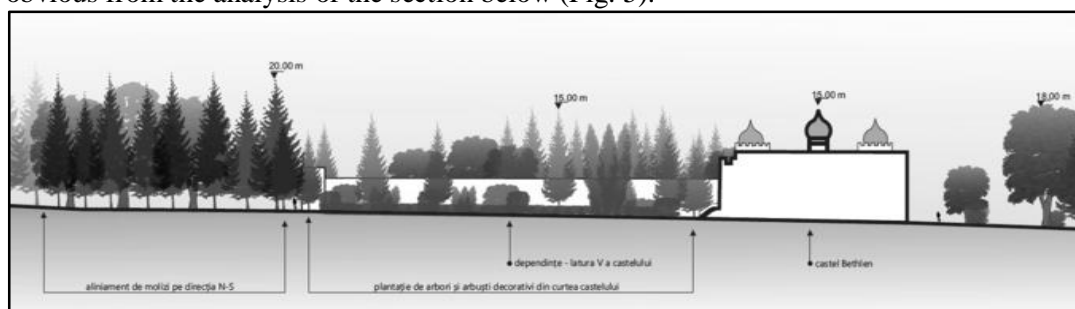


Fig. 5. Section through the N-S axis of the castle courtyard. To be noticed the actual spread of the trees, and the cover effect upon the buildings. (image source: original)

The re-design of the courtyard's green space will be made according to the functions of the proximity buildings, but it will also be provided with vegetation which will not grow over 100-120 cm height (flower patches, topiary art). Also, two paths with „historical” character are being suggested, like: re-establishing the axis which starts from the castle and goes up to the Bethlen monument, place where it can be implemented a

beautiful viewpoint on the site, and one path which leads us towards the two thumbs belonging to the Bethlen family, in the orchard.

During visits, it was noticed that in the evergreen sector from the north side of the Arboretum there is a large number of trees (centennial) bore down by wind, mostly on winter, on the background of very strong storms. On the north side of the Arboretum, more exactly on the NW<sup>7</sup>, there is an open field with no elements to absorb the wind force. That is the main reason why it is recommended to plant some windbreaks made of trees and shrubs (Fig. 6, a and b), on the blank fields situated at the north of the county road, which will have a „lift” effect above 15-20 m height upon the wind blast.

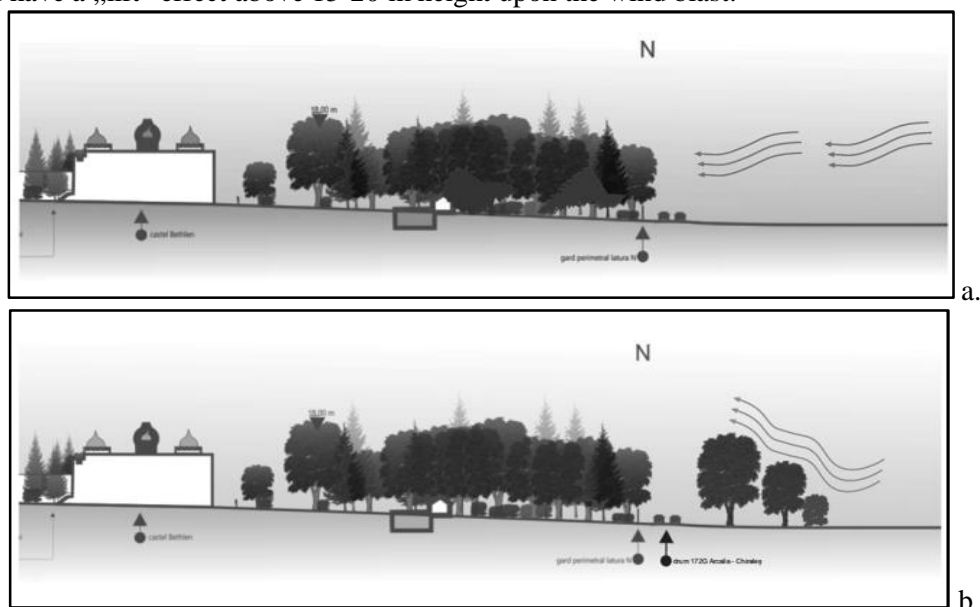


Fig. 8. a. Section through the N-S axis of the site, towards the N side. To be noticed that the wind strikes directly into the trees. b. The existence of a progressive windbreak could absorb a big part of the adverse effects of the wind.

(image source: original)

## CONCLUSIONS

The analysis of landscape condition among the Arcalia Arboretum restoration accentuates the importance of approaching historical aspects, on one side, and the utility ones, on the other side, both of them having as purpose the development and the enrichment of the ensemble.

The proposed actions, both on vegetation, and the site infrastructure, will take in consideration the landscapers' recommendation, summary related in the present article.

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<sup>7</sup> The main direction of the wind in this area is NW-SE

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