Green Space development project of Dumbrăvița Lake and Green Forest Timișoara

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Abstract Timișoara has for the moment a surface of 16 square meters of green space per capita and till 2013 it is considered that it will become 26 square meters. As a solution, has been suggested the creation of green spaces both inside the city (by designing ecological parks, alveolus, park reconstruction and construction) and in the neighbourhood, (planting a new forest in the North as well as reforestation of the Green Forest area. Considering all those mentioned above, we have concluded that Dumbrăvița Lake, that is situated in the immediate vicinity of Green Forest and in this moment is in a deplorable condition, needs in the near future a sustainable arrangement. This would transform into a nice and pleasant green place for the inhabitants of the city and for visitors.

Key words green space, lake, sustainable arrangement

The forest fund in the Dumbrăvița lake vicinity is situated in the West Depression, precisely in Timiș-Lugoj depression and in the direction of Timișoara-Lipova main road.

In the existing oldest mapping documents (map laid down by Claudii Erey, 1723-1725 and Griselini’s map - 1776) one can find that in the area of Green Forest were old woods that extended over the limit of today Dumbrăvița village.

On another map from the beginning of 19th century, in Green Forest area, can be seen a large hunting forest.

Written documents exist that during the Turkish domination, until 1711 there was already a hunting forest in this area.

It is possible that in this particular area, near the town, a forest existed always. This forest area either natural or artificially created had a main hunting function. In addition, we mention that in the Green Forest may be found natural and artificial stands. The age of the oldest trees is between 200-250 years.

Green Forest used to be a property of Timisoara town, and later in history became a state forest.

In the moment of its creation, the forest had hunting as a principal purpose and function. It was used also as a recreation area. This is the reason why the compartment lines were large in order to be used by hunters and beaters. Besides, the present location of the Forestry High School was mentioned in the documents as a hunting castle.

In Green Forest there were coppice stands and composite coppice fellings. New species were introduced such as: the red oak / Quercus rubra; horse chestnut / Aesculus hippocastanum; black nut tree / Juglans nigra.

As a result of the treatments methods applied in the past, most of the stands are even-aged.

In some of the stands with composite coppice fellings there are oaks and ashes that existed before. The young stand component is typical for the plain mixed hardwood forest with species like: field maple, tartar maple, ash.

Many stands are artificial obtained with intermediate crops.

In Green Forest with its 737 ha, the closed compartment lines shall be reopened, and swarding will disappear. This shall be done for esthetic purposes, but also in order to create more free space for the forest. Hunting purposes were also considered, thus facilitating the possibility to observe wild animals.

Also, some boar hunting stands are intended to be built as well as some hunting constructions (observatory blinds and feeders). These are necessary for hunting and to present the species of the forest. This way of getting nearer to nature and observing it is getting more and more usual in many parts of the world, and hopefully it will become common in our country too.

In order to avoid chaotic tourism, some camping places are intended to be built near Dumbrăvița Lake, where the main construction is going to be placed.

Recreational tourism is intended to be made in an organized way, since otherwise the habitat of wildlife would be disturbed all the time and animals
would leave the region in favour of more peaceful places.

In addition, in order to supply the supplementary food required by animals of this area, some agricultural fields shall be rendered to the forest administration. The administrators of the hunting fund will start the necessary works for these areas.

The lake in Dumbrăviţa (fig. 2 and 3) was created after the building of the dam in the years 1970 – 1975 for reducing the high flood of Behela rivulet which overflows in Bega Channel. The rivulet gets water overflowing from the Giarmata barrage lake and the water from rainfalls of slopes.

From the beginning to the present moment, the lake was populated with cyprinids and other local species more times for the practice of recreational-sportive fishing.

The water surface is about 20 hectares. For the water evacuation there is a barrage type installation placed towards the interior of the lake with connection points to the dam.

In 2008 years the lake basin was cleaned and the active vegetation specific to the area was removed.

Now Dumbrăviţa Lake is populated with the following fish species:
- cyprinids: carp, gold fish, flounder;
- rapacious: catfish, pike, zander, perch.

Other few species have got in the lake from Giarmata barrage lake (ablets, rudds).

**Materials and Methods**

For arranging the green area near Dumbrăviţa Lake (fig. 1) the following operations took place on a surface of 30.89 hectares:
- the soil was dug up from the bottom of the lake in order to deepen it, and with the resulted material in the middle an island was made; in order to keep the shape the lake, the banks have been consolidated;
- the island was connected to the banks of the lake with the help of two wooden bridges;
- on the arranged surface grass was planted.

This contained a combination of species with thin shred and tread resistant (Festuca rubra comutate, Poa pratensis, Lolium perene, Festuca ovina duriscula), which are proper for the shadowy places and the sunny ones also. The seeding requirement is 1 kg for 30 square meters;
- two tiny parks were built on one side and the other of the island. As a distinctive element, on each of them was created a combination of Silver-fir and Douglas-fir that can the found also in one of the plots of Green Forest.

One of the tiny parks has as central ornament a pavilion while the other has a statue. The access way to these places is a footpath made of wood plates that originate from the main alley.

- on one side and other of the lake, there are four tiny houses consisting each in a living-room, kitchen, bedroom, a tiny terrace, entirely made of wood. Efforts were made to create a place that is as much as possible ecological.

The tiny houses can be rented by people who come for fishing or just for recreation.
- a wooden restaurant will be built on the dam.

The restaurant offers a special view to the lake;
- the access way starts from Timişoara – Lipova road and it was asphalted. On both sides of this road, poplars and birches were introduced, as well as some lamp-posts. The road ends with a round-lown, in the middle of which an artesian fountain was installed. On its left a parking lot was built, the other one being underneath the restaurant.
- In the immediate proximity of the restaurant, there is a grill surrounded by six rustic wooden tables.
- The lake was surrounded by a sinuous rock alley, traced in natural style. This was chosen because of the simple and rustic aspect of the restaurant. On its margins, there are banks, garbage cans and lighting poles;
- Concerning the vegetation, on the banks of the lake two species of willows were planted (Salix babilonica and Salix caprea) that fit very well near the water and the lakes;
- Also, a tiny park was arranged on the island. In the middle of this park there is also a willow, surrounded with some exotic species rarely seen in this area.
- The two parks facing one another are made of a Silver-fir and Douglas-fir association;
- On the left and right of the restaurant, there are some floral arrangements containing exotic species; in winter, these will be protected against low temperatures;
- Choosing and associating the species was done according to the criteria of landscape architecture; some well adapted local species were introduced, that make a link between the species of Green Forest and other exotic species.

The species used are the following:

1. Trees and shrubs – Salix caprea, Salix babilonica, Abies alba, Pseudotzuga menziesii, Betula pendula, Populus alba, Juniperus communis, Dracena indivisa rosa, Phormium tenax variegata, Cycas revoluta, Juniperus stricta, Ilex silver queen, Thuja occidentalis.

2. Flower species – Gypsophila paniculata, Hakonechloa macra, Stachys byzantine.

Greensward species – Festuca rubra commutate, Poa pratensis, Lolium perene, Festuca ovina duriscula.
**Conclusions**

In the studied area the following activities can be developed:

- The lake was arranged for fishing; this action is allowed in daytime for a long period of the year with the condition to rent a house;
- A variety of fish species can be found (carp, gold fish, flounder, rapacious: catfish, pike, zander, perch, etc.)
- It is possible to eat at the restaurant, and the lake offers a wonderful view and landscape;
- People can walk or ride a bicycle around the lake or in the areas arranged nearby the forest;
- People can come for a picnic or grill;
- People can observe and make photos with the animals that populate the habitat.

**References**

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![Fig.1: The general plan of the area](image-url)
Fig. 2: View of end of the lake

Fig. 3: View of the dam