

Researches concerning landscape planning of the banks of the river Timis in Lugoj, Timis County

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Abstract At the order of the Lugoj Municipality City Hall, it was requested the arrangement of the land located on the left Timis River bank, from Lugoj, in the neighborhood of the open air public swimming pool Park and of Plopilor street, at 200 m from downtown, and from the Iron Bridge, aiming to continue the extensive process of modernization and arrangement of the green spaces from the municipality, represented by works of seeding of more than 100 trees on the Timis River bank, in order to consolidate the banks' resistance.

Key words

landscape, marine site, bank, urban framework

A theme approached by the head of the executive refers to the organization of the auction for the arrangement of two suspended terraces, one right next to the Traian Grozăvescu Municipal Theater, and the other instead of the former public toilettes on the right bank of Timis River, next to Compact Terrace. Therefore, for that purpose, we chose to design a terrace in the right of the Traian Grozăvescu Municipal Theatre.

Material and Method

In designing green spaces, it is necessary to harmonize the established functions with the site's characteristics. The general framework in which the land designed for arrangement is located, for example: urban site, rural site, marine site, hilly site, site on the lace shore, site between high traffic streets, determines very different situations with direct implications in designing parks, gardens and other categories of green spaces.

The site which I proposed for arrangement is one situated on the banks of the Timis River inside Lugoj Municipality, located in the urban framework. The urban framework is generally closed, limited, it does not benefit of natural external perspectives. Therefore, for the arrangement of the urban parks and gardens, the landscaping interest must be created with precisely the respective composition. The presence in the neighborhood of the densely built spaces of the town shall impose creation of some relations of harmonization and functional integration with them. The neighborhood conditions the internal organization of the green spaces. All the conditions generated by the emplacement of the land must be well known with the purpose to use in a creative manner all positive features and of diminishing or eliminating the negative aspects. The first documentary certification of the Lugoj Citadelle appears at the end of the 13th century, in a document kept in the Budapest archives, from which

results that the King of Hungary, Ladislau the 4th (1272 - 1290) arrived with his army at Lugoj. In a diploma dated August 22nd, 1376, signed by Sigismund of Luxemburg, it is shown that the Lugoj Citadelle was donated to the great Lords Ladislau and Ștefan Loszoczy.

There shall be eliminated the trees that hinder the new arrangement (construction of alleys, of the constructive elements, etc.) and those that are aged. The scrubs shall be seeded throughout the entire park.

The number of the new scrubs is small. There were chosen decorative species with flowers, seeded in important areas.

The slopes of the embankments dried because of the wind and sun exposure are fit for scrubs seeding. There must be chosen the scrubs that develop well in the respective region, that grow fast and form dense bushes and have very well developed roots. Certain species of acacia and osiers are recommended. Seeding bushes on the slopes has also decorating purposes.

Consolidation with wattles is used when the bank or the slope is permanently under water and is made as wattles layers, jointing fascines, or wattle rolls filled with stones.

The wattles layers serve to the simplest consolidation of the slopes and banks. The wattles are arranged on the biggest slope direction or under an angle of 45 ° (slope that must be in the current direction). The thin ends are set upwards, covering the above layer with 1/3 of the length. The wattles are fixed with wattle ropes, set at 0,5... 1,0 m. The ropes are set on soil with pegs with clamps with a length of about 1,00 m.

The thickness of the wattle and ropes layer is recommended to range between 0,15...0,20 m.

The consolidation works are necessary to stabilize the course of the Timis River as at the floods of 2005 the Timiș River that makes the land following to be

arranged was subject to multiple erosions, the flooding causing damages.

The execution of these works shall be made by certified construction specialists.

According to the plans of the constructor or of the architect, all the architectural elements are constructed as provided by the project: steps, ramp, pergolas, alternative layers. The trash bins are added.

Execution of the alleys

In the arrangement, there are proposed: three types of alleys: -asphalted alleys –bricked alleys –natural; stone alleys.

The asphalted alleys are made following the next steps:

- the outlining with props and ropes is made
- digging on the trajectory of the future alley is made.

The depth of the digging is about 40 cm.

- the soil is compacted
- a ballast layer is laid down, with a thickness

of 15 cm

- an asphalt layer is laid
- a white decorative pea gravel layer is set –it

is compacted.

The bricked alleys are made by following the next steps:

- the outlining with props and ropes is made
- digging on the trajectory of the future alley is made.

The depth of the digging is about 40 cm.

- the soil is compacted
- a supporting curb is mounted with the

purpose to prevent the profiles and sand to move

- a cinder or brush layer is laid out, with a thickness of 8-10 cm - 5 cm sand layer is laid down

- there are set the profiles after the chosen form, "connection at turn"

- the plates shall be compacted well with a hydraulic compactor in the sand layer until a plane surface is obtained

The natural stone alleys are made by following the next steps:

- the outlining with props and ropes is made

- digging on the trajectory of the future alley is made. The depth of the digging is about 40 cm.

- the soil is compacted
- 15 cm thick ballast layer shall be laid down
- a cement layer is cast
- a sand layer is laid down
- the decorative chopped stone pieces are

placed.

Execution of pergolas

- the 60 cm depth ditch is digged
- it is added a layer of tough material in order

to ensure a resistant

-the pillar is introduced perpendicularly on the digged ditch

-all around the area is placed a rough material in order to strongly anchor it on site

Obtained results

Table 1

Technical and economic calculations		
Surface	m ²	% of the total surface
Total surface	19.999,24	100
Built surface of which:		
- buildings;	0	0
- circulations;	4.262,25	21,31
- decorative constructions.	404,64	0,2
Effective green space surface	15 332,32	76,66
Surface for seeding maintenance	8 206,78	41,03
Grassed surface	7 125,54	35,62
Surface improved with vegetal soil in layer of 30 cm	7125,54	35,62

Table 2

List with seeding material

Category of seedling material	Species	Number of pieces	Price/ pcs. RON	Total price: (col.3 x 4) RON
Resinous trees - seedling plants - on packet	<i>Thuja occidentalis</i>	0 Total=0 4 Total=4	65	260 Total =260
Deciduous trees - seedling plants - on packet	<i>Catalpa bignonioides</i> <i>Liriodendron tulipifera</i> <i>Populus tremula</i> <i>Robinia pseudacacia</i> <i>Salix babylonica</i> <i>Salix matsudana tortuosa</i>	0 Total=0 1 3 6 8 14 1 Total = 33	250 150 185 175 170 195	250 450 1.110 1.400 2380 195 Total = 5.785
Resinous trees - seedling plants - on packet	<i>Buxus sempervirens</i> <i>Euonymus japonica</i>	0 Total=0 3 4 Total=7	80 90	240 360 Total=600
Deciduous trees - seedling plants - on packet	<i>Berberis thunbergii</i> <i>Chaenomeles japonica</i> <i>Cotoneaster horizontalis</i> <i>Forsythia suspensa</i> <i>Magnolia x soulangiana</i> <i>Syringa vulgaris</i> <i>Philadelphus coronarius</i>	0 Total=0 2 2 1 2 1 2 3 Total = 11	50 25 30 37 75 58 30	100 50 30 74 75 116 90 Total = 535
Lianas	<i>Parthenocissusquinquefolia</i> <i>Wisteria sinensis</i>	6 7 Total = 13	34 200	204 1400 Total = 1604
Evergreen flowering plants	<i>Dianthus deltooides</i> <i>Iris germanica</i> <i>Iris kaempferi</i> <i>Iris pseudocorus</i> <i>Paeonia suffruticosa</i> <i>Phlox drumondii</i> <i>Spartium junceum</i>	50 20 20 20 1 50 6 Total = 167	0,5 10 10 10 15 3 8	25 200 200 200 15 15 48 Total = 703
Biennale flowering plants	<i>Viola X wittrockiana</i>	100 Total = 100	2	200 Total = 200
Greensward - seed sacks (50 kg)	<i>Lolium perene</i> 30% <i>Festuca rubra rubra</i> 25% <i>Festuca rubra trichophylla</i> 25% <i>Festuca rubra commutata</i> 20%	4 Total = 4	1000	4000 Total = 4000
TOTAL			13.687 RON	

Table 3

List of construction materials

No.	Construction material	Quantity	Price/unit	Total price
1	Vegetal soil	35 t	500 RON/t	17500 RON
2	Organic dressing	15 t	1000 RON/t	15000 RON
3	Inorganic dressing	30 sacks de 50 kg	100 RON/sack	3000 RON
4	Greensward seeds	100 kg	10 RON/kg	1000 RON
5	Alleys (with foundation)	7405 sq.m	50 RON/mp	370250 RON
6	Trash bins	10	80 RON/pcs	800 RON
7	Wood benches	20	200 RON/pcs	4000 RON
8	Concrete benches	20	100 RON/pcs	2000RON
9	Circular benches	5	200 RON/pcs	1000 RON
10	Circular pergola	1	1500 RON/pcs	1500 RON
11	Rectangular pergolas	3	500 RON/pcs	1500 RON
12	River stone	0.5t	200 RON/t	100 RON/t
13	Steps	23 pcs	50 RON/pcs	1150 RON
14	Ramp	1	2000 RON/pcs	2000 RON/pcs
15	White gravel	0.5t	300 RON/t	150 RON/t
TOTAL			420 950 RON	

Table 4

List of executed works

No.	Product	Quantity / hours	Unit price / RON	Total price / RON
1.	Unqualified worker	3.000	7	21000
2.	Landscaping floricultist	10.000	20	200000
3.	Pavement specialist	65	9	585
TOTAL:			221 585 RON	

Table 5

Price chart

Work / Materials	Total price
Seedling material	13 687RON
Construction materials	420 950 RON
Executed works	221 585 RON
Total cost of the arrangement	656 222 RON
Percentage for designing	19 686 RON
Final cost of the arrangement	675 908 RON

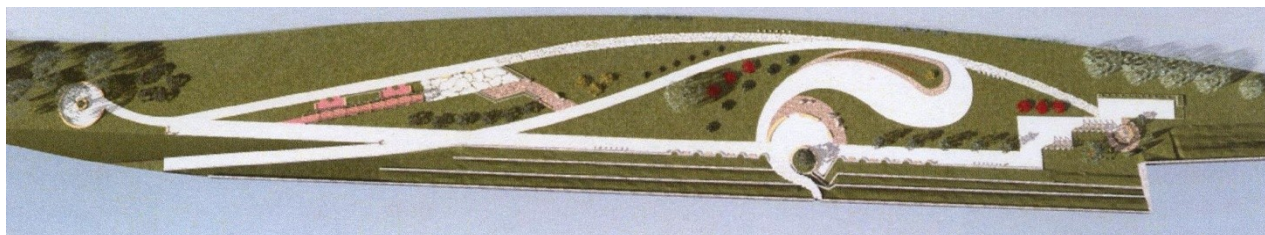


Fig. 1. General plan of arrangement



Fig. 2. Perspective 3D image



Fig.3. Perspective 3D image

Conclusions

The land surface taken for study does not exploit any of the important features of the site, therefore it may be deemed as being a vague space an undefined as being functional.

The attributes due to the potential of the land are presently insufficiently exploited, the insertion of a new arrangement adapted to the neighborhoods through a quality concept shall create an identity that shall exploit all the strengths of the site, with esthetics benefits, physical and mental health, as well as for the systematization of the area.

The way of arrangement proposed to follow the accomplishment of the following functions: social, decorative, sanitary and recreational.

References

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