

East Park, Cluj-Napoca Design Competition

Annex 2.6. Maximum cost of investment and design services

1. ESTIMATED COST OF INVESTMENT

A comparative study for similar investments is required to estimate the maximum investment cost. As outlined in the East Park *Competition Brief*, the chosen investments should include:

- arranging a protection strip around the nature reserve;
- arranging paths and walkways to visit the nature reserve;
- arrangement of small and medium-sized pedestrian areas (alleys, platforms);
- arranging some areas of drivable areas, of which some are permanent (shared space) or occasional (supply, firefighters);
- hydrotechnical works to stabilize the level of water mirrors in the dry season, for the preservation of the humid habitat of the wild flora and fauna;
- rigorous collection of rainwater and its transfer to storage tanks and municipal networks;
- realization of an adjustable irrigation system of all cultivated planted areas;
- implementation of an adequate lighting system, which allows night crossing and discourages delinquency; an adjustable lighting system is to be preferred due to lower energy consumption, in correlation with the actual visiting of the park;
- the provision of urban furniture that allows the disinterested respite in the park space (terraces, benches, chairs, sunbeds, bicycle rack, etc.);
- the provision of large planted areas;
- arrangement of water-covered areas: Lake 3, Becaş creek bed;
- drinking water supply of playgrounds and sports fields;
- the existence of temporary or permanent constructions with light structures (kiosks, stalls, stage for events) that can support the development of various seasonal activities (fairs, shows);
- equipping the park with toilets.

Given Romania's membership, both politically and in terms of cultural aspirations in the European Union, this comparative study began by documenting 11 relevant examples from Europe, presenting interventions on a wide variety of areas (from 0.3 to 110 ha), but with many similarities in terms of scope and nature of interventions. The main source of documentation is the site dedicated to exterior design: www.landezine.com

“Parcul Feroviarilor” (*Railwaymen Park*) of Cluj-Napoca is added thereto, an arrangement that will be made following a recent architectural competition (the project was completed in 2019), a relevant example by its location (Cluj-Napoca) and the level of complexity of the planned intervention.

Examples of similar urban development were chosen, as recent as possible (after 2010):

	NAME	COUNTRY	YEAR	EUR	AREA (SQM)	EUR/SQM
1	Rochetaillée banks of the Saone Lyon http://landezine.com/index.php/2016/09/rochetaille-banks-of-the-saone-by-in-situ/	Franța	2016	5.200.000	60.000	86,67
2	Auteuil Race Course Park, Paris http://landezine.com/index.php/2015/05/auteuil-race-course-park-by-pena-paysages/	Franța	2013	17.500.000	120.000	145,83
3	Thalie Park http://landezine.com/index.php/2015/02/thalie-park-by-urbicus/	Franța	2013	5.800.000	76.000	76,32
4	Vallon Park, Lyon http://landezine.com/index.php/2014/12/vallon-park-nature-as-a-tool-of-urban-renewal/	Franța	2014	6.300.000	122.000	51,64
5	Urban Development Eutin 2016+ http://landezine.com/index.php/2017/02/urban-development-eutin-2016-by-a24-landschaft/	Germania	2017	7.000.000	95.000	73,68

6	Park Killesberg http://landezine.com/index.php/2015/11/park-killesberg-development-towards-an-urban-environment/	Germania	2014	7.500.000	100.000	75,00
7	Queen Elizabeth Olympic Park http://landezine.com/index.php/2016/07/queen-elizabeth-olympic-park-by-hargreaves-associates/	UK	2012	277.200.000	1.100.000	252,00
8	Parcul Feroviarilor, Cluj-Napoca https://www.oar.archi.ro/concursuri/proiect/parcul-feroviar-cluj-napoca/468	România	2019	9.860.000	54.000	182,59
MEDIE VALORI DE INVESTITIE						117,97

None of the cases cited as a reference contains the area of natural habitat present on the studied territory, which is intended to become the East Park of Cluj-Napoca. This aspect is making this arrangement project unique and difficult to compare, which is also due to the specificity of the estimated investment costs.

The reference examples have been chosen to contain as many of the equipment as planned for the public garden project.

	REMADE PAVING	URBAN FURNITURE	CONSTRUCTIONS	WATER INSTALLATIONS	VEGETATION	LIGHTING
1	X	Benches, sculptures	-	Fountains, playground	Trees, shrubs, lawn	interactive
2	X	Benches, sculptures, sunbeds	Covered space	Fountains, sports fields, water mirrors	Trees, shrubs, lawn	adjustable
3	X	Benches	-	Water mirrors	Trees, shrubs, lawn	normal
4	X	Benches	-	Playground	Trees, shrubs, lawn	normal
5	X	Benches	Terraces, covered space	Water mirrors	Trees, shrubs, lawn	normal

6	X	Benches	Pavilion, stage, toilets	Fountains, playground	Trees, shrubs, lawn	normal
7	X	Benches	Gangways, covered spaces	Water mirrors, playground	Trees, shrubs, lawn	adjustable
8	X	Benches	Gangways, terraces, platforms	Water mirrors	Trees, shrubs, lawn	adjustable

To make this comparison more relevant, we chose not to consider arrangements of up to 30,000 sqm. The average value of investment per square meter, although lower, does not differ significantly from the cases above.

	NAME	COUNTRY	YEAR	EUR	AREA (SQM)	EUR/SQM
1	Park in Badalona http://landezine.com/index.php/2017/06/park-in-badalona-spain-by-peristoral-arquitectes/	Spania	2017	286.500	3.000	95,50
2	Wormholt Park, Londra http://landezine.com/index.php/2017/05/wormholt-park-by-levitt-bernstein/	UK	2016	1.500.000	30.000	50,00
3	Urban Ramp, Paris http://landezine.com/index.php/2019/05/urban-ramp-by-espace-libre/	Franta	2017	3.700.000	17.000	217,65
4	Teleki Square http://landezine.com/index.php/2015/03/teleki-square-by-ujirany-landscape-architect/	Ungaria	2014	456.000	14.000	32,57
MEDIE VALORI DE INVESTITIE						98,93

The average value of the similar investments analysed reaches **117.8 eur/sqm**, under the conditions of comparable areas and similar endowments, specific to public gardens. It should also be noted that, most likely, these values must be interpreted in the light

of the economic differences between North and South, respectively East and West, within the European Union. Thus, the closest example is “Parcul Feroviarilor” (*Railwaymen Park*) of Cluj-Napoca, with an estimate **182.6 eur/sqm**.

The result is the investment costs located in the range between a minimum of **117.8 eur/sqm** and a maximum of **182.6 eur/sqm** provided for an arrangement containing all the equipment described at the beginning of this study. The maximum investment cost estimate should be related to these values, without adding more than 10% to the value constituting the upper limit of the range. The estimated value of the investment costs (**129.3 euro/sqm**) will be the calculation basis for the design fee.

The area proposed for the arrangement of the East Park is 45.50 ha. For the 455,500 sqm proposed for arrangement:

- **estimated investment cost:** **129.3 euro/sqm, respectively 58,843,000 EUR**
(approx. 58.84 million euros)
- **maximum investment cost estimate:** **200.0 euro/sqm, respectively 91,000,000 EUR**
(approx. 91.00 million euros)
- **average investment value:** **150.0 euro/sqm, respectively 68,250,000.0 EUR**
(approx. 68.25 million euros)

The design fee should be added to the investment costs, as well as the cost of related studies for the investment: **ecological study, dendrological study, geotechnical investigation (15 drillings), project for the urban public utility systems that cross the site – improvements and deviations etc., traffic studies, archaeological studies, management study, PUZ**. The latter could be estimated at 0.5% of the investment value through preliminary, generic offers.

For safety reasons, these figures had to be compared with some investments conducted in Romania. The Cluj-Napoca Railwaymen Park project is a relevant example in this regard, trying to recover the level of attention and quality that the arrangement of a public park should contain, as well as the need for good maintenance over time. Even if the initial investment is higher, it is aid off by using it over a longer period of time.

The estimated investment costs for the entire intervention area of this project are described in the following table:

	DENUMIRE	S (HA)	CARACTERISTICI	EUR/MP	EUR
A.1	Protected biotope area	2,41	Requires minimal arrangements	50	1.205.000,00
A.2	Protected biotope area – semi-humid forest area	2,54	Requires landscape rehabilitation	70	1.778.000,00
A.3	Aquatic biotope area	1,82	Minimal interventions	50	910.000,00
A	A.1 + A.2 + A.3 =	6,77		57,5	3.892.750,00
B	Public garden area	20,36	Specific public garden landscaping	170	34.612.000,00
C.1	Biotope protection area	4,08	Requires technical and landscaping arrangements	120	4.896.000,00
C.2	Landscape restructuring area, access and biotope protection	3,71	Requires dendrological rehabilitation, technical and landscaping arrangements	130	4.823.000,00
C	C.1 + C.2 =	7,79		124,7	9.714.130,00
D.1	Lake 3 area – Arrangeable water mirror	3,42	Recreational boating	60	2.052.000,00
D.2	Protected water mirror	1,09	Minimal interventions	20	218.000,00
D.3	Non-arrangeable protected bank	0,75	Minimal interventions	20	150.000,00
D.4	Arrangeable bank	0,46	Specific public garden landscaping	170	782.000,00
D	D.1 + D.2 + D.3 + D.4 =	5,72		55,9	3.197.480,00

E	Transit area and access to Lake 3 and Public Garden	1,35	Specific public garden landscaping	170	2.295.000,00
F	Existing park	0,83	Landscape rehabilitation interventions	120	996.000,00
G	Area of running water – channels and collecting gutters	1,35	Requires rehabilitation and hydrotechnical arrangements to ensure the water level in the biotope	200	2.700.000,00
H	Area of (running and still) water mirror	1,13	Minimal interventions	20	226.000,00
	Area of (running and still) water mirror	6,97		45,1	3.143.470,00
I	Constructions with light structures	0,2	Various programs	600	1.200.000,00
TOTAL		45,5		129,30	58.833.360,00

Respectively:

AREAS	SQM	RON WITH VAT RON/SQM	RON/SQM	EURO/SQM	2020.05.05 – RON
A	67,700	331.09	278.23	57.5	18,836,171.0
B	203,600	978.87	822.58	170.0	167,477,288.,0
C	77,900	718.03	603.39	124.7	47,004,081.0
D	57,200	321.88	270.48	55.9	15,471,456.0
E	13,500	978.87	822.58	170.0	11,104,830.0
F	8,300	690.97	580.64	120.0	4,819,312.0

G	13,500	1,151.61	967.74	200.0	13,064,490.0
H	11,300	115.16	96.77	20.0	1,093,501.0
I	2,000	3,454.83	2,903.22	600.0	5,806,440.0
	455,000		625.66	129.3	284,677,569.0

We can draw a conclusion from the comparison with similar examples that the areas, which are intended to be arranged minimally (water mirrors) can be considered at an estimated investment value of **20 euro/sqm**. An additional cost arises only from the need to arrange hydrotechnical installations capable of maintaining constant humidity of the natural reserve area, which is vital for the preservation of the biotope.

Areas with arrangements specific for public parks (with tree planting, lawn, alleys, public lighting system, street furniture, equipment of all kinds, etc.) can be considered at an estimated investment value of **170 euro/sqm**, while the strip of green spaces with special arrangements, designed to create the protection area of the precious biotope, will cost around **125 euro/sqm**.

The areas with hydrotechnical installations, permanent or temporary constructions made of light structures and those occupied with sports fields will be arranged with costs ranging between **200-600 euro/sqm**.

The average cost resulting from these differences amounting to **129.3 euro/sqm** is also confirmed by the inclusion in the value range between the average investment required for the arrangement and equipment of a public park, of approximately **117.8 euro/sqm**, and the execution cost of the Railwaymen Park in Cluj-Napoca of **182.6 euro/sqm**. The costs for this project are estimated at **58.84 million euros**.

2. ESTIMATED COST OF THE DESIGN SERVICES

The calculation of the design value will be made according to the MLPAT Tariff Schedule (Order 11N/1994). The arrangement objective falls into Group III - Landscaping and would have the design value of **4% of the estimated investment value**, according to Table annex 6.15.A., respectively **1.906.513,20 EUR without VAT**. The value of studies related to design must be added to this value (Zonal Urban Plan, geotechnical investigation, historical study, ecological study, environmental study etc.)

By comparison, the Order of Architects regulates the value of the basic tariff, according to the REFERENCE FEES approved by the National Conference of OAR of 30-31 May 2005. Thus, according to this guide, the arrangement could fall into Class I (Table 1-2) simple problem, low design requirements - landscaping). For an investment value exceeding 30,000,000 euros (Table 3), as in our case, the value of the architectural design should be around **2.2%** of the investment value, respectively **1.048.583 EUR without VAT**. This value should also include the design of street furniture, other easily removable structures (kiosks, stalls, stage events).

In order to translate in the value of the design fee the qualitative and conceptual distance from “green spaces” to “landscaping”, an average percentage between the two mentioned above is taken into account, namely **2,4%** of the investment value, respectively **1.200.000 without VAT**. The quality surplus should be reflected in the contribution of the following specialties:

- design of the road, drivable and pedestrian system with intermittent road access (supply, firefighters);
- design for rainwater collection and storing (sanitary engineering);
- design of a system for regulating the level of standing water on site (hydrotechnical engineering);
- night lighting design, including lighting calculations (electrical engineers);
- expertise / design of underground (structures/sanitary/electrical/irrigation) constructions;
- landscape design specifying all the components of the vegetation to be planted;
- urban design (park orientation signage)

For the zonal urban plan (PUZ) generic offers were requested:

	EUR	10 % ERROR
ZONAL URBAN PLAN	100.000,0 without VAT	10.000,0

The following studies, not related to the investment itself, will not be included in this calculation:

- design of urban networks that cross the site (improvements, diversions, etc.);
- traffic studies, necessary at the city level;
- archaeological studies and discharge.

Financial calculations do not include:

- technical assistance, more than the Determining Phases and Reception of works
- site management (quality control of works)
- *project management* (tender organization, organization of execution processes).

The proposed value of the prizes, relative to the estimated value of the design costs is as follows:

- Second prize: **30,000.0 euro** without VAT
- Third prize: **15,000.0 euro** without VAT

The result of all these comparisons and calculations is as follows:

CATEGORY OF COSTS	MAXIMUM COST ESTIMATE EURO
PARK EAST DESIGN CONTRACT	1.200.000 without VAT
ZONAL URBAN PLAN	100.000,00 without VAT
TOTAL DESIGN VALUE	1.300.000 without VAT
PRIZES	45.000,00 without VAT

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