

Land Revitalization of unused areas in to the form of children playground

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Abstract:

Change of unused land is currently actual issues. The purpose of the revitalization of all unused part is the increase in the quality of life of the population, modernization and attractiveness of public space. The contribution is focused on a proposal from the revitalization of unused and obsolete area in to the form of a playground that is for the local population very attractive. Will be build up a place for recreation - leisure time sports activities during the whole year. Place which be unlimited of number of users and loosely available to the general public. The preparation of 3D visualization requires using various processing methods and procedures. Application is from the field of surveying and geographical information systems.

Keywords: unused area, surveying, GIS, playground

Introduction

Playgrounds playing nowadays indispensable role in child rearing. For children all ages play an important function of educational and provide a meaningful opportunity to fill their free time [1]. Play represents an opportunity to develop physical condition of children, improve physical coordination and overall physical development, to promote their mental development, stimulate their creativity, imagination and creativity. They are prevention of socio-pathological phenomena (ramble, destruction of property, vandalism, drug awareness). Playgrounds are also an important place for rest and relaxation also for the parents and grandparents of these children [2]. As the present records daily progressing in the development of IT, offers space for their use in the revitalization of unused space right into the form of children's playground. Processing the selected theme of contribution is based on topographic focus area in the street Svätoplukova in Kosice and subsequent processing of the resulting visualization. For post-processing of spatial information was used obtaining for visualizing the development of this area in the selected graphic programs. As the current trends in collecting spatial information using modern surveying methods, the chosen method of collecting was RTK method [3,4]. In the field of visualization and revitalize the areas were selected the following software products such as:

- ✓ ArcView 9.3
- ✓ Kokeš v.
- ✓ ArchiCAD v.13

Planimetric measurements made at a general level determining the relative position of different objects constituting the measurement component of the final output (construction objects, communications, waters, overhead and underground lines, land boundaries and cultures, etc.) [5].

Subject to measurement in mapping are:

- Cadastral boundaries, property and land types.
- Buildings and other civil structures permanently to the ground.
- Railways, highways, roads.
- Water bodies and streams.
- Underground facilities, distribution networks and infrastructure [6].

In order to obtain of spatial information was chosen planimetric measurement of the selected area.

Methodology and the subject of processing

In processing that themes of contribution were used several processing methods and procedures. Their select was appropriated for prerequisites of attaining the main objective of the contribution resulting from the name. The methods used were selected from addiction on:

- ✓ area character,
- ✓ purpose of measuring,

For the selected geodetic methods used for part of the position of the spatial focus of the selected spare parts requiring the use of adequate apparatus and devices that measure could be implemented.

Reconnaissance area represented an important step in making up the documentation planimetric measurements for processing purposes. The objective terrain survey was the definition of the area and determines the current state of vegetation and technical elements.

The task of surveying in the processing of topographic surveying was the focus of all necessary requirements which have been subject to further processing. For the process itself geodetic survey was applied the polar method for determining points. In terms of this work was that the choice of the methods such as most effective. Consisted of determine the position of the polar coordinates. Next process stage which was the measurement process of planimetry by using universal surveying station Leica TCR305. The main subjects of the measurement were the individual elements constituting the area of interest.

General information

Revitalization proposal aims at modifying unused urban vegetation in a selected part of Kosice - Old Town (yard in front of residential areas on the street Svätoplukova No. 18, 14, 10). Street Svätoplukova No. 18, 14, 10 is a residential area and thus it must be held that the deformation of unused vegetation idea would take especially families with little children. Therefore, the greatest emphasis will be taken on the safety and attractiveness of the proposed objects of the future children playground. Proposal for a new playground will be an example that we can all influence how the space will look around us. Currently going the process of changing of overall design unused urban green into final form for the realization for the construction of children playground.

Initial state

Space:

Yard of Svätoplukova street No. 18 and No. 14 is an area of approximately 21.4 x 37 m, near the residential part of the building complex.



Figure 1 Presentation of the area
Source: <https://maps.google.sk>



Figure 2 Characteristics of the area by using GIS
Source: <https://maps.google.sk>

Current Status:

Grassed a relatively flat surface, yard is not fenced. In the street is from construction the lack of quality and safe playgrounds. For children are not available fully functional sandboxes and other facilities for leisure time. Unused area is covered with grassland and is partially maintained. Its servicing is fully dependent on the amount of financial resources allocated to manage it. The unused area surrounding apartment complexes are not protected against dogs and cats.

Residential area and its surroundings show a growing number of young families with small children who would welcome higher quality, safer and richer equipped playgrounds. The mere implementation of the new field will help to develop social relationships and interactions between people. Realized geodetic measurements were the defined area that will be subject to further processing and visualization. In the territory concerned were determined coordinates of important points, which shows a brief overview of Table 1.

Point	Y	X	Z
1	262463.274	1238953.249	206.315
2	262443.752	1238923.057	206.565
3	262444.736	1238923.614	206.645
4	262445.014	1238924.227	206.640
5	262447.070	1238927.133	206.634
6	262439.106	1238925.945	206.699
7	262425.386	1238934.749	206.681
8	262424.638	1238935.239	206.616
9	262445.805	1238965.588	206.491

Table 1 Coordinates of measuring of unused area

Graphic processing of obtained spatial information presents Figure 3.

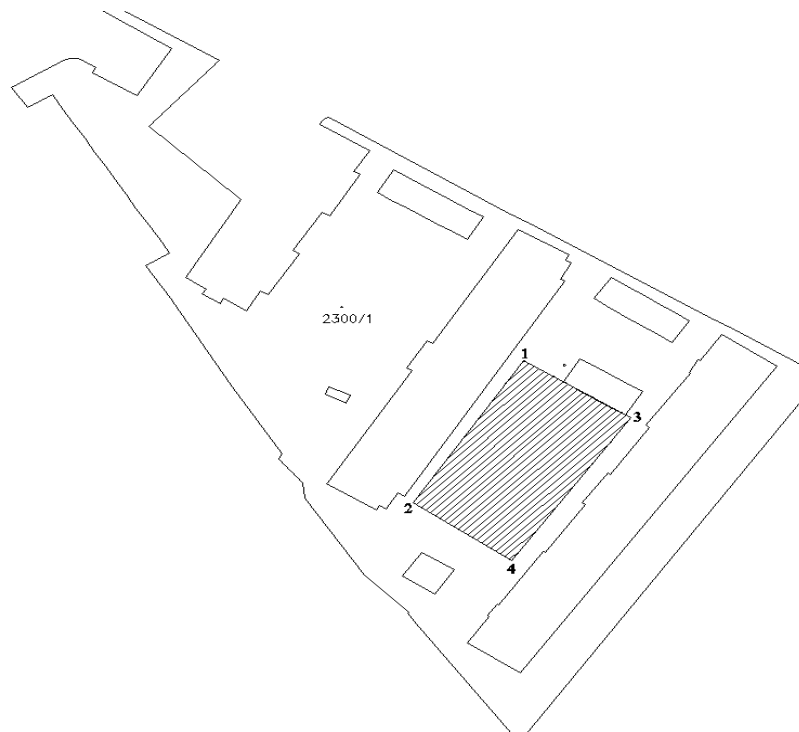


Figure 3 Situational sketch of area

The Green is located on plot No. 2300/1 with a total area 7887 m². Revitalization proposal is based on planimetric focus and is presenting in the following 2D dimensions. To the processing the proposal was applied software environment ArchiCAD v.13. Overview is presented in Figure 4

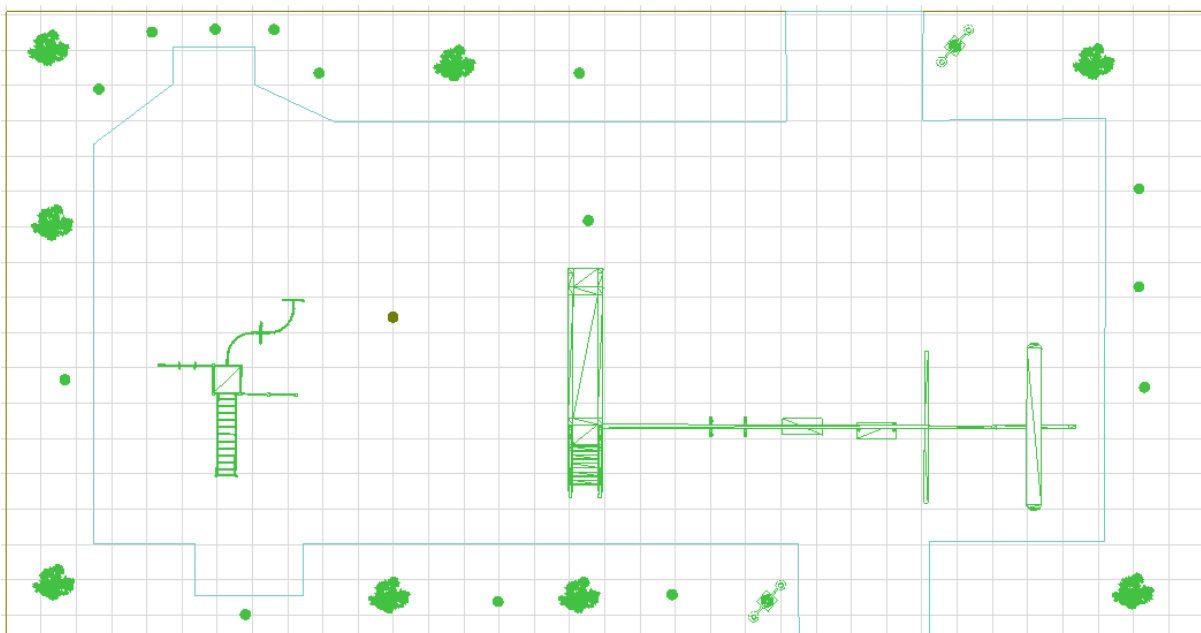


Figure 4 Proposal for a revitalization of the area

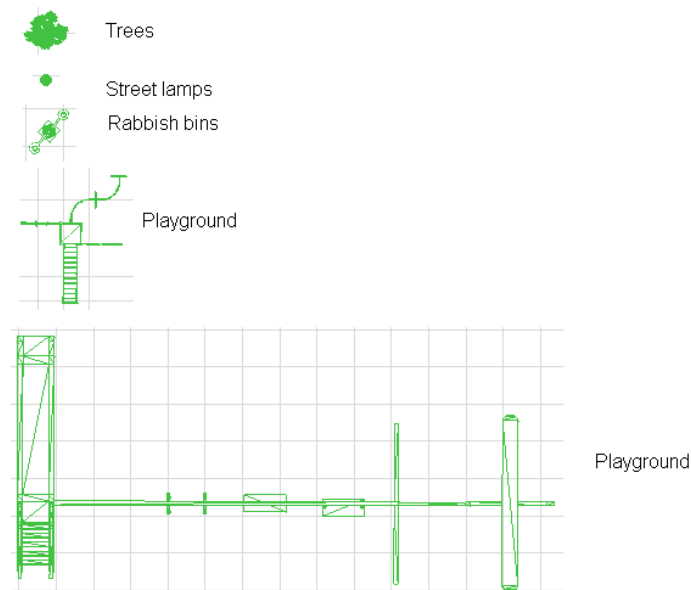


Figure 5 Legend of used objects

Up to now close to the residential houses have not been built suitable conditions for leisure young families with children in the form of a fully functional playgrounds. The actual space requires improving of the environment. The process of improving the environment can be implemented and benefit the local community, which is able to improve the condition of playground for example with voluntary work

Target group:

The primary target group - children from residential zones Svätoplukova street and surrounding area.

The secondary target group - the parents of these children and seniors

Proposed condition:

Revitalization proposal presents Figure 6 to 8.



Figure 6 3D Visualization - graphic draft of playground view 1



Figure 7 3D Visualization - graphic draft of playground view 2



Figure 8 3D Visualization - graphic draft of playground view 3

Conclusion

Study area and its immediate surroundings are characterized by intensive construction and so far in the area were not available spaces for relaxation children of early childhood. With this proposal the previously unused space will be useful. The basic principle and characteristics of the proposal was the restoration of old unused parts in to the form of a new playground. A frequent problem of towns and cities is the lack of space for relaxation and recreation use, and it is quite a large number of areas that are otherwise unusable. Many times it comes to unmaintained and derelict areas whose maintenance is burden for the government of cities and urban areas.

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