THE ORGANIZATION OF THE GREEN CADASTRE IN THE RESITA MUNICIPALITY

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Abstract: *This scientific paper aims to detail the purpose of the Green Cadastre, its importance as well as the means by which the objectives of this project can be achieved. First of all, the Green Cadastre is an information system whose purpose is to analyze and store information and data related to green spaces located inside a locality, i.e. they must be in an urban area, not out of town (outside the locality). It aims to stop pollution in cities, remove ragweed, create new habitats for living things that live in trees, grass or water and of course to beautify cities. The importance of the Green Cadastre is related to the problem of pollution we face today, it has the consequences of destroying nature, such as forests, bodies of water and the air we breathe, this problem affects not only us but also animals whose habitats have been destroyed by it, the introduction and maintenance of the Green Cadastre in cities with and without green spaces can help in the fight against pollution. Some methods used by the Green Cadastre are the protection and conservation of green spaces, the expansion of green spaces by transforming neglected and damaged spaces into green areas, registering all trees in the area, proposing and implementing a set of measures to maintain a proper state of care and commitment for green spaces, obtaining data from topo-geodetic surveys and digitizing this data. The digitization process of the data pertaining to the green cadastre obtained after the topographic activities performed in the field, these activities are generally executed with the help of total stations and GPS devices. In the field part of this work, only a total Leica TCR 705 station was used, the method used for the topo-geodetic elevations is that of the supported polygonal course at the ends starting from a known station point. The digitization is done by importing the resulting data into AutoCad or DraftSight, the data is then divided into "layers" according to their category of use.*

Keywords*: Green Cadastre, Green Spaces, Surfaces, Pollution*

INTRODUCTION

The Green Cadastre is an information system used to record and highlight green spaces located in an urban area of a region, this system being used in many cities around our country.

The Green Cadastre has many uses, one of them being an aid in the purpose of protecting and conserving green spaces, they are necessary for maintaining the biodiversity in the localities they belong to, as well as identifying deficient or degraded areas and carrying out works with the purpose of expanding land areas that are occupied by vegetation, areas used for expansion must have be areas with an ecological potential, the green cadastre formulates and implements measures to bring the green space in a state appropriate to its functions but also maintaining this state, keeping in records of the total of activities dedicated to the management of local ecological funds, of all plantings and re-plantings, of tree cuttings, and last but not least the creation of a GIS database that records every green space and every tree species in the locality, their characteristics being elaborated in great detail. The green cadastre also aims to combat the spread of ragweed, this is a type of weed that reaches its pollination stage in early August and lasts until the end of October. Pollination is done in the air with the help of the wind, this can create an allergic reaction for a large number of people.

These uses help to beautify the city but also to reduce the degree of pollution in the area (figure 1).

Many other municipalities in Romania have taken the initiative of the "Green Cadastre", such as Arad, Brasov, Galati, Bistrita, Bucharest and many others.

Figure 1. The City of Resita

These towns have benefited immensely from such a project, in the ecological department as well as in maintaining a state of joy for the citizens living in these regions.

MATERIAL AND METHODS

The Leica 705 Total Station was used for the measurements. The computer specific programs (OpenOffice and Draftsight) were used to prepare the written documentation during the office work).

The Leica Geosystems TC(R) 705 is a simple electronic total station designed for topo-geodetic operations. It has a riding accuracy of 1 ”and a standard deviation of 5”, can work at temperatures between -200 C to +500 C, Visual field of 1030 '(26 m at 1 Km) with a minimum measuring distance of 1.7 m and a maximum measuring distance with round GPH1 prism of 3500 m.

The main functions of the device are: measuring horizontal and vertical angles, measuring distances, recording measured data and importing said data into an appropriate computer software.

OpenOffice is a computer software similar to other word-processing software, it specializes in spreadsheets, presentations and creating various databases for storing data. It is advantageous to utilize for its wide variety of language options and easy to use interface, and not to mention the fact that it is free to download.

DraftSight is a software used in architecture, engineering and construction work. You can edit or even create any DWG file with relative ease, the process will also be quick and efficient. It is very similar to other CAD software, making it easy to understand for other CAD users.

For the elaboration of the topographic works, a measurement was performed by the method of a polygonal course supported at the ends starting from the known station point S100 with orientation on the point S200 from the work with the CAD Nr. 31694-Resita from the RGI database, work done by Top. Negovan Ana, and determined S100, S200, S300, S400, S500, S600 raised the points on the contour. The new stations are marked by stakes with metal nails on the side of the road and on the part of land that is the subject of the measurement. The new and the radiated points were determined analogously, the same way they were determined with the surfaces.

RESULTS AND DISCUSSIONS

The cadastral technical documentation of the "first registration and assignment of cadastral number" was prepared at the request of the Resita City Hall - Directorate for Public

and Private Domain Administration for registration in the Land Registry of the Street „Piata 1 Decembrie 1918”-Civic Center, according to GD 532/2002, Annex no. 2, item 76 classification code 1.3.7.3.

The category of use of the building is "construction yards" and includes „Piata 1 December 1918”, streets, sidewalks, alleys, green areas, overpass, concrete platform, parking space with an area of 44121sqm.

The civic center is registered in the Land Book with several buildings as follows:

- CF 4945 Resita-Romana, Nr. Top. R203 / 1/3/1 /.../ 1/1/2 / b with destination: streets, sidewalks, alleys, upper passage in the area of 15585.2sqm.

- CF 4945 Resita-Romana, Nr. Top. 203/4 with destination: part of Piata 1 Decembrie 1918, alleys, green area with an area of 2840sqm.

- CF 44527 Resita, Nr. Top. R203 / 5 with destination: concrete platform and green area with an area of 300sqm.

- CF 4945 Resita-Romana, Nr. Top. R203 / 6 / a / 2 / c with destination: part of Piata 1 Decembrie 1918, alleys and green area, concrete platform with an area of 13963sqm.

- CF 42270 Resita, Nr. Top. R203 / 8 with destination: sidewalks and parking space in the area of 960sqm.

- CF 4945 Resita-Romana, Nr. Top. R203 / 11 with destination: park, alleys and green area with an area of 3270sqm

- CF 4645 Resita-Romana, Nr. Top. R203 / 20/2/2 with the destination: sidewalks and green area with an area of 479sqm.

CF 4945 Resita-Romana, Nr. Top. R203 / 25/3 with destination: sidewalks and green area with an area of 796.55sqm

These buildings have a common side and at the request of the owner, the buildings were unified by the work of the "first registration". The surfaces of the buildings mentioned above amount to an area of 38193.75sqm, the surface difference of 5927.25sqm resulting from the measurements is subtracted from CF 597 Resita-Romana, Nr. Top. 251 / a / 1 / a / a /.../ 2/1 / b / b /.../ a / b / 2/7/5, CAD Nr. 6100 with the destination of pasture in an area of 2957834.08sqm.

The data taken from the Topo-geodetic survey activities were imported into the DraftSight program, with their help it was possible to form a graphical plan of the measured areas, the data is divided into "layers", these layers are categorized in order to make the process of digitization much easier for the responsible person, for example: you can create a layer only for roads, or a layer only for a certain type of tree, etc. (figure 2).

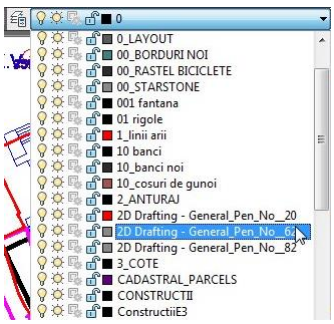

Figure 2. Layers

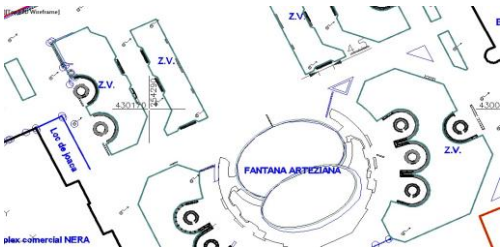

Figure 3. Arrangement of buildings towards green spaces

This is the set of layers that comprise constructions, in short, buildings such as the NERA shopping complex, and blocks whose corners can be seen in the image above, the artesian well is also included in the image, as well as benches, gutters and trash cans, the benches are large circles and semicircles that appear near the edges of green areas (figure 3).

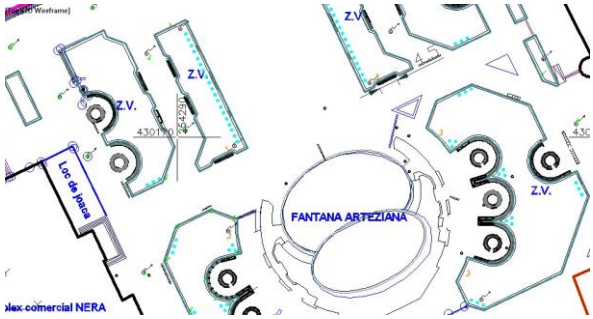

Figure 4. Arrangement of municipal networks towards green spaces

This is the set of layers that comprise gas networks, electrical networks, sewer networks, poles, and lamps (figure 4). Sewer networks are represented as circles with the letter c written inside them, these sewer networks mainly help the artesian well.
The electrical networks appear in the form of circles with green arrows, they help to power the whole street, but mostly the light poles and light projectors that illuminate the green areas and the artesian well, they appear as blue dots. The gas networks do not appear in this screenshot, but they look the same as the sewer systems, only they are yellow with a G in the middle.

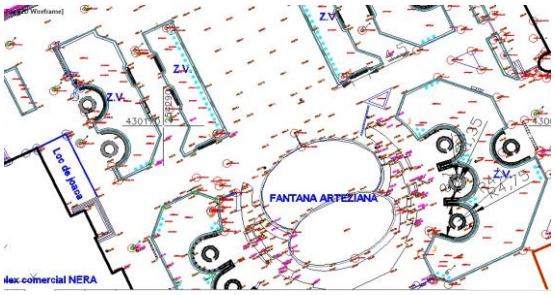

Figure 5. The making of the elevation plan of the afferent area

This is the set of layers that comprise the total number of elevations on the field.

Elevations are the dimensions measured on the spot, they are intended to represent the height of the site relative to the local sea level, in our case it is the zero level of the Black Sea. Ex: 225.18 (meters) (figure 5).

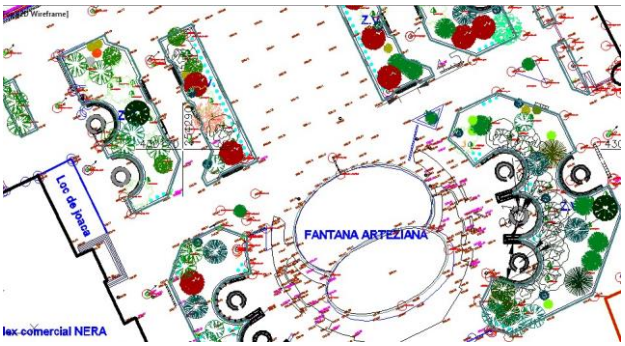

Figure 6. The making of the thematic plan with arrangements for vegetation

This is the set of layers that include trees and green spaces (figure 6). This is the main layer for this paper, each tree is inventoried and digitally represented, they appear in the form of green, red or yellow trees, each of them has a name represented by a small green shrub, the name appears next to it for example: pt1388 (*pom*), pt1308 (*pom*).

CONCLUSIONS

The main purpose of the Green Cadastre is to stop or at least reduce the pollution in many cities around the country, this goal can be achieved either by conserving and protecting green spaces in a city or by expanding these green surfaces, this can be done by repurposing areas that have been neglected or found in a state of degradation, into new green spaces.

Therefore, the conservation and protection is done mainly by protecting green areas from specific hazards, by creating rules prohibiting actions that can cause damage to these areas, and by analyzing and importing the necessary data into a database using a software like ArcGIS, AutoCad, DraftSight, etc., and by ensuring that the green zones are maintained and cared for.

Pollution in cities is a problem that can lead to the destruction of the environment, it exists in three different forms: soil pollution, water pollution and air pollution.

Human interferences throughout history have helped to spread and empower the effects created by pollution, these effects being harmful to a planet where all kinds of living beings thrive, effects such as the greenhouse effect or global warming, so it is necessary to maintain the earth, water and air that we breathe, clean, and plant as many trees as possible, because you cannot breathe properly without them, the cause of planting trees is one that has caught a lot of traction in recent years, a fact that makes many people hopeful for the future.

In addition, planting trees in cities has shown a higher level of happiness on the part of the citizens, not only do green spaces make us healthier, they also make us happier, this proves that man is meant to be close to nature, if this is the case then it is only logical to seek to protect the nature, without which we would not be the same.

In this way it should be the goal of humans to help regenerate, expand and nurture nature, the green cadastre being one of the many means by which this goal can be achieved, this paper aims to show us that it is important to protect nature, but it is more important for us to remember why it is necessary to protect it, the green cadastre being essential in this task.

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