

RESULTS OF THE STUDY ON INTEGRATING URBANISM INFORMATION INTO THE CADASTRE AND LAND BOOK SYSTEM

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Abstract

The real estate development, the increase in the number of constructions made in the past years brings a complex problem, that of urban agglomeration, and implicitly all other problems deriving from it, environmental, social and economic issues. At the base of real estate development and the default of urban development is the system of cadastre and land book. By the very object of activity „the immovable” the cadastre and the urbanism activity are closely related. The aim of this study, is to find the method that brings together cadastre and urbanism information, to make the best decisions by the authorities responsible for these activities but also by citizens who want to achieve certain investment.

Key words: cadastre, urbanism, immovable, management, GIS.

INTRODUCTION

Urban development of localities leads to an increase in the quality of life if this development is controlled and respects the rules and restrictions imposed by urbanism.

Urban development represents a complex process involving material and human resources, involving the participation of several institutions in creating the framework necessary for the implementation of urban planning projects.

This study aims to analyse an area located in Ilfov County, developed from an urban point of view.

Ilfov County had a rapid development in the years after 1989, the restitution of the land of the old landowners by applying the 18/1991 law and subsequently the other Land Laws paved the way for a new, upward, real estate development area.

In Romania, the integrated cadastre and land registry system is functioning today. Land with or without construction is registered in this system on request or through systematic registration.

To obtain building permits, utilities connection, real estate transactions or drafting of notarial documents, it is mandatory for the immovables to be registered in the cadastre and land registry system (Figure 1).

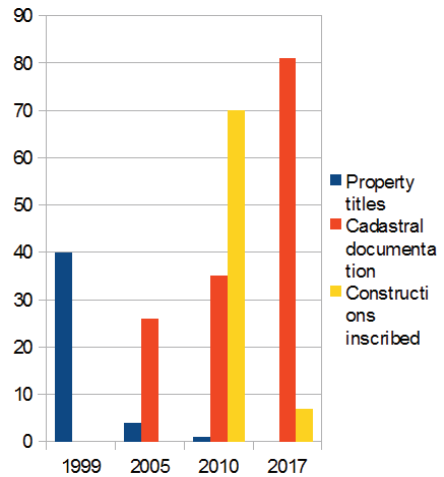


Figure 1. Evolution of buildings in the period 1999-2017

The area under study is situated in locality Popesti-Leordeni, Ilfov County. On 01.01.1990, this land area of 26 ha represents land with extravilandestination, category of arable land use. According to the graph presented in Figure 1 until 1999 the land was retroceded in percent of 85.1%. In 2000, by approving the general urban plan, this land area was introduced into the urban area. The number of cadastral documentation and real estate transactions has been increasing over the period

1999-2017. On the area of 26 ha were built 77 buildings, the clear majority, of type condominium, which subsequently were divided (Table1) (eterra3, ancpi.ro).

Table 1. Evolution of individual units during the period 1999-2017

Specifications	1995	2005	2010	2017
Number of individual apartment units	0	0	614	219

Ilfov County has benefited from a number of advantages that have led to its development. The geographical location, Bucharest's ring road, the large unoccupied land area at the level of 1991 was among the most important aspects that contributed to the interest for the development of this county. Today large areas in Ilfov are real towns, the proportion of land occupied by construction compared to free land leads to a worrying conclusion "urban agglomeration" (Figure 2).

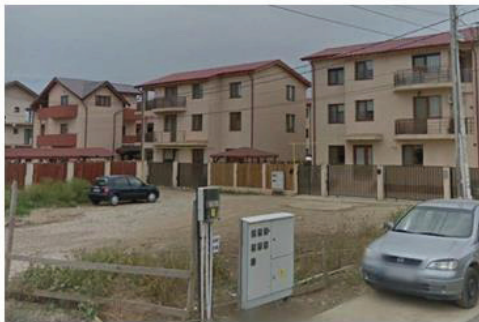


Figure 2. Locality of Popesti-Leordeni newly built area

Urban agglomeration due to the uncontrolled development of a locality brings about a few inconveniences on various levels:

- a) Narrow traffic due to workforce migration, an issue faced by almost all localities in Ilfov County, or due to improper road infrastructure that was not designed for such intense trafficking;
- b) Environmental issues, noise, noxes, pollution;
- c) Economic and social problems raised by delays due to heavy traffic;

d) Visual discomfort, strenuous environment, noise, lack of rest.

Uncontrolled urban development will create discomfort and inconvenience to people (Neacsu, 2010).

A map of buildings using GIS is an important and necessary tool for urban development in terms of urban planning.

MATERIALS AND METHODS

The most effective way to reduce chaotic urban development situations is to discipline the participants in this activity and to optimize this process by creating a legislative and informational framework that covers the whole range of situations in this field.

An important aspect to be mentioned is the tendency of land fragmentation. Agglomerated areas have plots with small areas, 300, 500 mp and less frequently 1000 mp or more. Land division involves compliance with certain urban planning rules (eterra3, ancpi.ro).

From this point of view, the integration of urbanism information along with cadastre system and land book registry using a GIS is an optimal and effective approach to making the best decisions.

A first step in this direction would be to include urban regulations and restrictions in the cadastre and land book system. These data should be used by those responsible for these cadastre and urban planning activities.

Being an activity the results of which result in building what implies the realization of long-term investments, it is important that the solutions adopted to optimize this process lead to making the right decisions. In the process of decision making it is necessary to know the expectancies and preoccupations of the different interested parties as well as to determine whether and how they will have any influence in strategic decisions on the long run (Minea, 2016).

At the basis of the urbanization activity is found P.U.G. - the general urban plan of the locality (Attico Barter Club S.R.L., 2000).

This documentation contains the urbanization regulations and restrictions for the entire locality.

The locality is divided into territorial reference units, U.T.R. Each UTR contains several

specific regulations. Besides the different construction possibilities, P.O.T. and C.U.T. are key elements of urbanism in urban planning (Davidescu, 2003).

These elements of urbanization P.O.T. - occupancy rate of land and C.U.T. - the land occupation factor, the limit of the territorial reference unit, introduced in the real estate map, is a solution that will help in making the decisions.

For each territorial unit a P.O.T. and a C.U.T. maximum admitted. P.O.T. and C.U.T. are the specific urban work tools needed to control the design and sustainable development of urban areas.

POT - the occupancy rate of the land is the ratio of the built area (ground footprint or ground projection of the upper floors perimeters) and the plot area included in the reference territorial unit.

CUT - the land use coefficient represents the ratio of the built-up area to the plot area (Law 350/2001).

The cadastre and land registry system contain information on the built area, the surface area and the land surface.

Thus, you can calculate the P.O.T. and C.U.T. urbanistic indicators.

In the cadastral system the real estate is a closed polyline defined by the inflection points of the property limits of the immovable.

Will be introduced in the map of the immovables of a locality and the territorial reference units, these will be closed polylines. By accessing a polyline of this kind, we will have in the list of information about the imposed town planning restrictions.

For each plot of land belonging to a reference territorial unit, P.O.T. and C.U.T. must be less than or equal to the reference unit indicators.

RESULTS AND DISCUSSIONS

This immovable map containing property in the land book, buildings with or without construction if completed with the necessary urban planning elements if using GIS then can be used for the current work as well as for the PUG assessments, change needs, company requirements in relation to the actual development possibilities of the respective locality.

Using a G.I.S. can be performed statistics on the number of building permits, the number of constructions with a certain number of levels, the type of construction, an analysis of the relationships between datasets that are in the same area can be performed. Different types of overlapping analysis can be used to solve complex spatial analysis problems (Herbei, 2010).

From the point of view of real estate development can be used to study market requirements.

The effects felt by adopting these measures can be immediate by creating the possibility that the decisions taken are as correct as possible, as well as long-term effects through the achievement of sustainable urban development. Used efficiently and responsibly this solution will have long-term, on multiple plans effects in society. Investments in this area are long-term investments, remain inheritance to future generations.

The result of using this type of map containing the properties registered in the cadastre and land registry system and urban planning regulations brings benefits both the authorities responsible for these activities and the citizens through access to correct information.

Using this type of map, responsible decisions can be made to ensure a fair relationship between built-up land and green areas for the benefit of all citizens. Green areas are multifunctional resource that improves the quality of life in the community and support its sustainability (Jovanovic, 2012).

The problem that occurs at county level is a perspective issue. Local development independently of neighbouring localities is a solution that no longer meets the needs of society. The urban way of life is not limited to cities (Wirth, 1938).

CONCLUSIONS

This presentation is only a part of a more complex work on the study of the integration of urban planning information into the cadastral system. The proposed solution can be extended to other urban regulations. Any urbanistic restriction if is measurable exist the possibility of registration in the cadastre and land registry system.

For this solution to be put into practice, clear legal regulations, discipline and accountability are needed.

Urban investment is long-term investment and remains an inheritance to future generations.

Integration of urban planning information into the cadastral system will lead to property management.

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