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EVALUATION OF USEFULNESS OF REAL ESTATE DATA CONTAINED IN THE REGISTER OF PRICES AND VALUES OF REAL ESTATES

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Abstract

The paper, as a part of broader studies on the practical usefulness of public registers enclosing the databases on real property, in tasks related to the property appraisal, includes results of research on the scope of data collected in the Register of Prices and Values of Real Estates and its essential relationship with the needs of appraisal in comparative approach. The appraisal procedures need to recognise the features of sold properties that can have an influence on the property price variability. Evaluations of these features underlie a detailed local market analysis. Therefore, the degree of meeting the appraisal needs by the above mentioned Register data was submitted to an examination. Presented analyses are demonstrated on the examples of extracts of registers, conducted by the offices of the district authorities in Lublin Voivodeship. In the summary, a generalized picture of accomplishment of governmental tasks in the mentioned scope was presented. Needs of changes in the scope of institutionally collected real estate market data, as well as possible ways of their implementation, were also indicated.

Key words: cadastre, databases, real estate prices, prices and values register.

INTRODUCTION

The Register of Prices and Values of Real Estates (RPVR) was introduced in Poland in 2001 by the Regulation on the lands and buildings register (RLBR) as a supplementary part of Lands and Buildings Register (LBR) itself. But on a par with other real estate registers (LBR, Record of Land-Ownership (RLO), Register of Land Charges (RLC)), RPVR is an essential component of the national information system on real estate. The need for its establishment stemmed (and the reason for this still exists) from attempting to rebuild the LBR to modern cadastre, which corresponds to the objectives outlined in the mid-nineties of the last century (Kaufmann, Steudler 1998). We can conclude that the existence of RPVR even determines the emergence of cadastre.

The aim of this study is to investigate how far the real estate data contained in RPRV can be useful for the property appraisal prepared in comparative approach. The attention was focused on the relationships between RPVR and economic tasks arising from the Act of 21 August 1997 On Real Property Management (RPM Act), in which the common denominator is the value of the property. One should take into consideration that the valuation of real estate is used widely also outside the areas designated strictly by the real estate economy of public entities (state and local). In accordance with the article 149 of RPM Act, real estate valuation principles set out in RPM Act are mandatory in all cases of valuation on the territory of Poland. Due to this fact, the usefulness of the data contained in RPVR, from the point of view of real estate valuation procedures, seems to be a universal problem on the scale of economy.

THE SCOPE OF USAGE OF THE REGISTER OF PRICES AND VALUES OF REAL ESTATES

Analysis of the RPVR legal status leads to the conclusion that it is not only a part of the state geo-referenced data set (such geo-referenced data set is a legal component of state spatial data infrastructure, including state surveying and mapping resource (Siewicz 2012)) but also a part of the public information. This is confirmed by the evaluation of Bydłosz and Parzych (2007), Szpor (2009) or Mączewski (2003). In opposition to their ratings, Ninard, relying on the judgment of the Supreme Administrative Court (I OSK No.2109/10 LEX # 1149309), perceives RPVR as a data set separate to LBR (Ninard 2016). However, this distinction is expressed only in the case of sharing the collected information, so it is an aspect of secondary importance as far as the technical nature of RPVR and its position in the structure of information on real estate are concerned.

Real estate appraisal in the comparative approach requires the knowledge of similar properties prices (in the statistical methods the issue of similarity re-

quires a separate discussion outgoing beyond the framework of the presented paper), as well as the knowledge to assess the attributes (characteristics) of these properties. This principle is confirmed by almost everyone, therefore for many years it has not been the subject of a discussion among both professionals or in the scientific community. The problem has been erased, or rather has been revealed, after enforcing in 2001 RLBR regulations that established rules of institutional way of collecting the real estate market data.

Admittedly Bydłosz, Cichociński and Dębińska (Bydłosz *et al.* 2009) recalled the principle indicated above. This principle creates, from the very beginning of RPVR, the need of simultaneous collecting prices and information on the characteristics of properties. Such suggestion goes directly from the proposal of Kuryj and Źróbek S. (2005). However, for many years, the source of data concerning the necessary characteristics of sold properties remained beyond the discussion.

In the common perception RPVR still remains only a source of property prices information, which for market analyses must be completed separately by implementers of individual research studies and appraisals. In the last decade, the spatial information systems, growing at an impressive rate, became a substitute source of information on the real estate market and properties. An unquestionable usefulness of these systems was and still is emphasized by many researches e.g. Cichociński (2005, 2009) as well as Chica-Olmo (2007), Kulczycki and Ligas (2007) or Colakovic and Vucetic (2012). All listed above authors study and discuss the use of geostatistical methods and show their enormous possibilities of implementation. For real estate market goals the most often performed implementation of spatial information systems possibilities was prices mapping. Examples of this kind of efforts present e.g. Czesak (2012), Kuntz and Helbich (2014), Montero and Larraz (2011), Nappi-Choulet and Maury (2011) or Hayunga and Kolovos (2016). Only some researchers (Dubin 1998, Barańska 2010, Cellmer 2014) point that real estate valuation needs real data. These data should be collected on the basis of the observation of the features, while observed features must belong to real items of the local real estate market.

THE SCOPE AND METHODOLOGY OF PERFORMED RESEARCH

The subject of research was raw information obtained from RPVR extracts and provided by particular district offices of Lublin Voivodeship. As well as in previous studies (Zyga 2016), the examined data included twenty-three out of twenty-four examples of RPVRs from Lublin Voivodeship. For technical reasons, the data from Janow Lubelski District Office were omitted.

The research was conducted on the basis of the actual data from individual registers. The study summarizes the collected information about real estate

transactions, involving objects of real estate as a whole, together with plots of land and buildings. Lists of transactions involving premises have not been taken into account. Due to the large diversity of the combined data and difficulties with their unification, it was decided to resign from the part of quantitative analysis in favour of qualitative description of sold properties. Therefore, the processing of the raw data required an inventory of description methods that have been used for sold properties, as well as putting these descriptions in the order so that they match the order prescribed by the proper Regulation on the lands and buildings register (RLBR). The ordered and classified pieces of information were then compared with one another and with a list of information necessary for the property valuation process in the comparative approach.

Table 1. RPVR registration fields in reference to real estate as an object of transaction, introduced in RLBR

Class (field):	Registration field – attributes (original record acc. to the Regulation)
RPV Transaction	Transaction price, date of contract conclusion, transaction ID, type of right to property being the object of transaction, type of market, type of transaction, purchasing party, selling party, share in the right to property being the object of transaction, VAT rate,
RPV Real estate	Type of property, description, surface area of land property, type of arable land, property price, type of encumbrance, details referring to encumbrance,
RPV Building Description	Building ID, existing infrastructure, building price, usable area of building from measurements, the main function of building, other function of building, VAT rate, building value,
RPV Land Description	Land plots ID, land lot, the price of land lot, the purpose indicated in the local spatial management plan (zoning plan), VAT rate, existing infrastructure, infrastructure possible to be fitted, the value of land lot, additional information,

Source: (Zyga 2016) on the basis of appendix no. 7 to the of Regulation on the lands and buildings register

DESCRIPTION OF THE PROPERTY REQUIRED BY THE RULES OF VALUATION IN THE COMPARATIVE APPROACH

The list of information which is necessary for description of the property being valued as well as the property that has been sold on the market, being a potential item of comparison, includes excerpts from the Act On Real Property Management (ARPM) and the list of real estate characteristics affecting the level and volatility of their market prices. This list is shown in table 2.

There are three main and obligatory real estate features (indicated in the article 4 section 16 of the above mentioned Act), that the valuation subject as well as identified sold properties must be described with: "legal status, purpose, use

of real estate". Further indispensable characteristics of the real estate, that should be taken into account, are indicated in the article 134.2, as well as in article 4 section 17 of ARPM. These are: "type of property, its location, use, purpose, condition of real estate". In accordance with the legal definition of the term, "the condition of real estate" includes the level of real estate development, its legal status, utility infrastructure, as well as the condition of the environment and neighbourhood of the mentioned property, including the size, nature and urbanisation degree of the location in which the property is situated. For the built-up area § 43.2 of RLBR specifies the term of "level of real estate development" as "a function and a way of building facilities use and their technical condition and features, especially overall dimensions, architectural form, the position relative to the building line and intensity of the site use" (Zyga 2012).

Table 2: List of information about real estate necessary in valuation process according to ARPM

The legal basis of the requirement	Required information
134.2 ARPM	type of real estate
	location of real estate
	actual land use
	purpose of real estate in the local spatial management plan
	surface area of real estate
4.17 ARPM	legal status of real estate
	utility infrastructure
§ 43.2 RLBR	function of buildings and structures
	dimensions of buildings and structures,
	technical condition and use of buildings and structures
	buildings utility infrastructure
	buildings and structures use
4.17 ARPM	condition of real estate
	level of real estate development

Source: (Zyga 2012)

Identification of the features mentioned above and their evaluation in reference to all comparative properties are an essential part of the analysis of the local real estate market. This principle underlies all the valuation procedures in the comparative approach.

EVALUATION OF RESEARCH MATERIAL AND TEST RESULTS

The fact that all district offices keep the same record of RPVR does not mean that scopes of information, collected and made available to users, are the same in each case. In practice, the examined district offices, despite similar technical capabilities, produce records with different registration field configurations.

In the first step, the information disclosed in the tested excerpts of RPVRs from each of the district offices was tabulated with an obligatory list of the RPVR registration fields, given by Regulation on the lands and buildings register. This is reflected in the accounts prepared in tables published in the preceding article (Zyga 2016). There is an inconsistency between the list of registration fields used in the RPVR (table 1) and the desired characteristics of real estate defined by the real estate appraisal regulations (shown in table 2). Therefore, the specification illustrating the assignment of fields available in RPVRs to essential characteristics of the real estate was prepared (table 3).

Table 3: Specification illustrating the assignment of fields available in RPVR to the essential characteristics of real estate and the number of cases of record information in various areas.

Registration fields – attributes	Number of cases of appropriate registration fields occurrence in RPVRs	Number of cases of appropriate registration fields use in RPVRs	Number of cases of appropriate registration fields referring to obligatory property features	Number of cases of actual utilization of appropriate registration fields referring to obligatory property features	Regulation	Type of necessary information (obligatory property feature)
Type of property	21	21	21	21	Art. 134.2 of ARPM	type of real estate
Land plots ID	23	23	38	33		location of real estate
Building ID	15	10				
Type of arable land	11	11	11	11		type of real estate
The purpose indicated in the local spatial management plan	23	22	23	22		The purpose indicated in the local spatial management plan
Surface area of land property	9	9	32	32		surface area of real estate
Land lot	23	23				

Registration fields – attributes	Number of cases of appropriate registration fields occurrence in RPVRs	Number of cases of appropriate registration fields use in RPVRs	Number of cases of appropriate registration fields referring to obligatory property features	Number of cases of actual utilization of appropriate registration fields referring to obligatory property features	Regulation	Type of necessary information (obligatory property feature)
Type of a right being the object of transaction	23	23	49	49	Art. 4.17 of ARPM	legal status of real estate
Share in the right being the object of transaction	21	21				
Type of encumbrance	3	3				
Details referring to encumbrance	2	2				
Existing infrastructure	3	3	9	5		utility infrastructure
Infrastructure possible to be fitted	6	2				
Main function of building	18	18	21	21	§ 43.2 of RLBR	function of buildings and structures
Other function of building	3	3				
Usable area of building from measurements	15	14	15	14		dimensions of buildings and structures
Existing infrastructure of building	7	2	7	2		buildings utility infrastructure
Description	21	19	21	19		condition and use of buildings and structures
Additional information	11	4	11	4	Art. 4.17 of ARPM	condition of real estate level of real estate development

Source: own study on the base of (Zyga 2016)

In table 3, apart from assigning elements of two coexisting sets (a set of registration fields of RPVR and a set of necessary property features), rough tests results were presented. Figures in the inner columns show numbers of identified cases of the information record useful in the property valuation process, with reference to the relevant registration fields of RPVR and to the list of obligatory property features.

Figures put in table 4 indicate the frequency of occurrence in RPVR (a fact of disclosing the relevant registration box in tested RPVR excerpt) and the frequency of actual utilization of each registration field, through which the data are collected in examined registers. Proper registration boxes, containing important information referring to the property description and to the frequencies mentioned above, are shown on the left side of table 4. The parallel set of results, but referring to obligatory property features have been shown on the right side of table 4. These figures represent the proportions of proper numbers (from table 3) of identified cases to the potential maximum number of such cases (i.e. the amount of district offices covered by the analysis) and show how often any information that may be a part of the description useful for real estate valuation was given.

Substantive assessment of the suitability of the information concerning the characteristics of the sold property, obtained on the basis of the information disclosed in the excerpts of RPVRs of each district office, was conducted by examining the value of the obtained coefficients. The assessment shows that the examined RPVR record gives very little information concerning the property description.

Previous research (Zyga 2016) confirms that in practice there are only few types of information that are always recorded and shown in excerpts of RPVRs. These are: transaction price, date of contract conclusion, the transaction ID of the Act, as well as the indicated above: land plots ID, the area of land plots according to LBR (land lot), the purpose indicated in the local spatial management plan (presented sometimes as "land function") and the type of a right to property being the object of transaction. These data are the backbone of RPVR, making the existence of this register partly accepted and proving its (admittedly minimal) usefulness, for example for statistical reporting purposes. Another way of possible exploitation of these data is GIS based mapping, often discussed in the above mentioned issues.

Table 4: Frequencies of use of particular attributes and actual utilization of them in specific RPVR as well as attributes referring to the obligatory property features

Registration fields – attributes	Frequency of occurrence of appropriate registration fields in RPVRs	Frequency of actual utilization of appropriate registration fields in RPVRs	Frequency of occurrence of appropriate registration fields referring to obligatory property features	Frequency of actual utilization of appropriate registration fields referring to obligatory property features	Type of necessary information (obligatory property feature)
Type of property	0.91	0.91	0.91	0.91	type of real estate
Land plots ID	1.00	1.00	0.83	0.72	location of the real estate
Building ID	0.65	0.43			
Type of arable land	0.48	0.48	0.48	0.48	type of real estate
The purpose indicated in the local spatial management plan	1.00	0.96	1.00	0.96	The purpose indicated in the local spatial management plan
Surface area of land property	0.39	0.39	0.70	0.70	surface area of real estate
Land lot	1.00	1.00			
Type of a right being the object of Transaction	1.00	1.00	0.53	0.53	legal status of real estate
Share in the right being the object of transaction	0.91	0.91			
Type of encumbrance	0.13	0.13			
Details referring to encumbrance	0.09	0.09			
Existing infrastructure	0.13	0.13	0.20	0.11	utility infrastructure
Infrastructure possible to be fitted	0.26	0.09			
Main function of building	0.78	0.78	0.46	0.46	function of buildings and structures
Other function of building	0.13	0.13			
Usable area of building from measurements	0.65	0.61	0.65	0.61	dimensions of buildings and structures

Registration fields – attributes	Frequency of occurrence of appropriate registration fields in RPVRs	Frequency of actual utilization of appropriate registration fields in RPVRs	Frequency of occurrence of appropriate registration fields referring to obligatory property features	Frequency of actual utilization of appropriate registration fields referring to obligatory property features	Type of necessary information (obligatory property feature)
Existing infrastructure of building	0.30	0.09	0.30	0.09	buildings utility infrastructure
Description	0.91	0.83	0.91	0.83	condition and use of buildings and structures
Additional information	0.48	0.17	0.48	0.17	condition of real estate/ level of real estate development

Source: own study on the base of (Zyga 2016)

Further analysis of the content of table 4 indicates that the information relating to the description of the sold real estate condition is given seldom (frequency of the use of RPVR field coefficient in the range 0.5-0.7) or very seldom (frequency of the use of RPVR field coefficient less than 0.5). Similarly, rarely and very rarely the appropriate RPVR registration fields (projected in proper RPVR management systems), for this type of data, are prepared. The most serious data gaps can be observed in the area of the property description concerning "utility infrastructure" (frequency coefficient 0.11), installations in buildings – "buildings utility infrastructure" (frequency coefficient 0.09) and the "condition of real estate /level of real estate development" (frequency coefficient 0.17).

Despite the high index of the registration field "description" (i.e.: 0.91/0.83) in table 4, the description of "condition and use of buildings and structures on the land lot" leaves much to be desired. A high value for both the proportional factor and the number of instances of recorded data does not correspond to the quality of information contained in the draft record. In about 70% of cases, the information about the level of the real estate development is reduced to a mere statement "the real estate is built-up". Basically, this laconic constatation is never accompanied by any other piece of data given in other fields of RPVR recording. Because of that, the registration field "description" seems to be an element of less importance in the real process of market analysis. It does not contain any information that allows for identifying any potential similarities between the compared properties.

CONCLUSIONS AND REQUESTED CHANGES

In the author's assessment the observed state of affairs is reprehensible and harmful. It should be noted that the above assessment, made on the basis of RPVR from the area of Lublin Voivodeship, is not directed exclusively to the analysed district offices. What is more, such a low average evaluation note given above does not exclude the existence of examples of better RPVR (for example: in the case of RPVR of Municipality of Lublin City almost all analysed frequency coefficients equalled 1.00). On the basis of the author's experience from other regions of the country, the condition of other RPVR, on average, is similar. The harmfulness of this state, seen from a pragmatic and organisational point of view, manifests itself in the fact that the efforts of governmental institutions (district offices) to collect the data are wasted. The existing status, in fact, prevents the implementation of the most governmental tasks that could be carried out systematically, in an automated manner, and hence relatively cheap. Examples of such tasks are: conducting simple controls of the taxation regularity of real estate transactions, enhancing transparency and the safety of the market. This, in turn, through the banking system, would improve the state of economy as a whole. Implementation of all the rules of RLBR (as far as problems of RPVR are concerned) i.e. fulfilling all the lists of prepared registration fields in RPVRs would be a chance for governmental statistics, too. Nowadays, the contents of RPVRs, revealed above, give statistical offices an opportunity only to analyze the prices, with no chance for any deeper considerations. The suggested changes would greatly help the judiciary system as well. Many of court cases, in both civil and business matters, need adequate and honest judiciary reviews and opinions, possibly free from subjectivism of forensic experts. Making the complete data concerning sold properties available to the valuers, government services could help to minimize the subjectivity of all real estate valuation and to increase their coherence. Additionally, this change would be a great benefit to the above mentioned sectors, and also to all the administration services, both the governmental and self-governmental.

In order to enable a viable repair of the above described condition of the RPVR system in Poland, it is recommended that a system of unified descriptions of real estate for sale should be prepared and implemented. The most preferable way of generating the required description is to make it according to the list of property characteristics that have already been included in RPVR. In view of the fact that no one knows the property as well as its owner, the obligation of property detailed description should be (in proper act of law) imposed on him. The property owner should submit a relevant statement (fill up the relevant form) as a part of the declaration of sale intent in the presence of a notary.

A good opportunity to improve the functionality of the domestic RPVR system is preparation of the Real Estate Information Integrated System (RPIIS). Including in its structure some procedures associated not only with the prices registration (GUGIK 2016) but also with the registration of property descriptions collected in RPVR, would make a good complement to the system of RPIIS. Although the Polish Geodesy and Cartography Head Office have already set the main objective of the RPIIS project: "increasing the data quality and credibility as well as raising cost efficiency of the administration", without the changes mentioned above, the cited goal will not be fully achieved.

REFERENCES

Barańska A. (2010). *Statystyczne metody analizy i weryfikacji proponowanych algorytmów wyceny nieruchomości*. Rozprawy Monografie 214. Wydawnictwo AGH. Kraków.

Bydłosz J., Parzych P. (2007). *Ocena możliwości wykorzystania danych rejestru cen i wartości nieruchomości na potrzeby wyceny nieruchomości*. Geomatics and Environmental Engineering 1(4): 31–40.

Bydłosz J., Cichociński P., Dębińska E. (2009). *Modelowanie baz danych o nieruchomościach*. Archiwum Fotogrametrii. Kartografii i Teledetekcji 19: 35-46.

Cellmer R. (2014). *The possibilities and limitations of geostatistical methods in real estate market analyses*. Real Estate Management and Valuation 22(3): 54-62.

Chica-Olmo J. (2007). *Prediction of Housing Location Price by a Multivariate Spatial Method: Cokriging*. Journal of Real Estate Research 29 (1): 95-114.

Cichociński P. (2005). *Pozyskiwanie danych dla wyceny nieruchomości z wykorzystaniem systemów informacji geograficznej*. Roczniki Geomatyki 3(1): 21-26.

Cichociński P. (2009). *Próba zastosowania metod geostatystycznych do taksacji nieruchomości*. Roczniki Geomatyki 4(34): 17-30.

Colakovic M.Vucetic D. (2012). *Possibility of Using GIS and Geostatistic for Modeling the Influence of Location on the Value of Residential Properties*. FIG Working Week 2012. www.fig.net/pub/fig2012.

Czesak B. (2012). *Koncepcja system informacji geograficznej wspomagającej wycenę nieruchomości w nawiązaniu do niemieckiego system Boris Plus*. Infrastruktura I Ekologia Terenów Wiejskich 3(2): 37-47.

Dubin R.A. (1998). *Predicting house prices using multiple listing data*. The Journal of Real Estate Finance and Economics 17(1): 35–59.

Hayunga D.K., Kolovos A. (2016). *Geostatistical space–time mapping of house prices using Bayesian maximum entropy*. International Journal of Geographical Information Science: 1-16. DOI: 10.1080/13658816.2016.1165820

Kaufmann J., Steudler D. (1998). *Cadastre 2014 a vision for a future cadastral system*. Proceedings of Working Group 1 of FIG Commission 7: 38.

Kulczycki M., Ligas M. (2007). *Zastosowanie analizy przestrzennej do modelowania danych pochodzących z rynku nieruchomości*. Studia i Materiały Towarzystwa Naukowego Nieruchomości 15(3-4): 145-153.

Kuntz. M., Helbich. M. (2014). *Geostatistical mapping of real estate prices: an empirical comparison of kriging and cokriging*. International Journal of Geographical Information Science 28(9): 1904–1921.

Kuryj J., Źróbek S. (2005). *Koncepcja rejestru cen i wartości nieruchomości jako integralnej części systemu informacji o nieruchomościach*. Przegląd Geodezyjny 77(10): 3-8.

Mączewski K. (2003). *Prawa i należności przysługujące Skarbowi Państwa przy rozpowszechnianiu. rozprowadzaniu oraz reprodukowaniu materiałów stanowiących państwowy zasób geodezyjny i kartograficzny*. Przegląd Geodezyjny 8: 16-19.

Montero. J.M., Larraz. B. (2011). *Interpolation methods for geographical data: housing and commercial establishment markets*. Journal of Real Estate Research 33(2): 233–244.

Nappi-Choulet I., Maury T.P. (2011). *A spatial and temporal autoregressive local estimation for the Paris housing market*. Journal of Regional Science 51(4): 732–750.

Ninard G. (2016). *Udostępnianie Danych.* Geodeta 2 (249): 30-33.

Siewicz K. (2012). *Prawne aspekty korzystania z rejestru cen i wartości nieruchomości*. Roczniki Geomatyki . 3(53): 125-135.

Szpor G. (2009): *Prawo dostępu do informacji publicznej jako istotny czynnik rozwoju społeczeństwa informacyjnego.* Roczniki Geomatyki 6(36): 89-96.

Zyga J. (2012). *Istota podobieństwa w procedurach wyceny nieruchomości*. Rzeczoznawca Majątkowy 75(3): 22-26.

Zyga J. (2016). *The usefulness of real estate price and value register in appraisal by comparative methods. on the basis of Lublin Voivodeship registers*. Infrastruktura i Ekologia Terenów Wiejskich 4(3): 1673-1688.

Główny Urząd Geodezji i Kartografii (2016). ZSIN – Budowa Zintegrowanego Systemu Informacji o Nieruchomościach – Faza II założenia projektowe. date of access: 2016-12-20. http://www.gugik.gov.pl/__data/assets/pdf_file/0004/58072/Zalozenia-projektowe-ZSIN-faza-II.pdf.

Rozporządzenie Rady Ministrów z dnia 21 września 2004 r. w sprawie wyceny nieruchomości i sporządzania operatu szacunkowego (Dz.U. 2004 nr 207 poz. 2109 z późniejszymi zmianami). [Regulation of the Council of Ministers of 21 September 2004 on the valuation of the property and the preparation of the valuation report. Journal of Laws 2004, No. 207 item 2109 as amended.]

Rozporządzenie Ministra Rozwoju Regionalnego i Budownictwa z dnia 29 marca 2001 r. w sprawie ewidencji gruntów i budynków (Dz. U. 2015 poz. 542 z późniejszymi zmianami) [Regulation of the Minister Regional Development and Building Industry of 29 March 2001 on land and buildings register, Journal of Laws 2015, item 542 as amended.]

Wyrok NSA z dnia 30.11.2011 r., I OSK 2109/10, http://orzeczenia.nsa.gov.pl/doc/95EED93ADE.

Ustawa z dnia 21 sierpnia 1997 o gospodarce nieruchomościami r. (Dz. U. 2015 poz. 782) [The Act of 21 August 1997 on Real Property Management, Journal of Laws 1997, No. 115 item 741 as amended]

Ustawa z dnia 17 maja 1989 r. Prawo geodezyjne i kartograficzne (Dz. U. 2014 poz. 897) [The Act of 17 May 1989 on the geodetic and cartographic Law, Journal of Laws 2014, item 897 as amended]

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