

Agnieszka Bieda, Łukasz Brzozowski: **Analysis of Market of Ground Estates in Cracow** • Geomatics and Environmental Engineering 2007, vol. 1, no. 4

The topic of following article is analysis of market of ground estates in Cracow. Authors show procedures and results all calculations and estimates. Calculations and analysis were made on the base of 205 non built-up estates which were collected in Cracow area. For indicating crucial factors of ground values, estates were characterized by features which may be important for potential purchaser point of view. Every feature was characterized in numerical way. Data of estates were accumulated on the base of notarial acts made during of buy and sell operations.

Keywords: Cracow, analysis of market, ground estates

Jarosław Bydłosz, Piotr Parzych: **The Evaluation Possibilities of Employing Estates' Prices and Values Register Data for Real Estates Valuation** • Geomatics and Environmental Engineering 2007, vol. 1, no. 4

Data concerning real estates are significant component of Land Information System. One of the most important places for storing this data is the ground and building cadastre. Prices and values register is its important part. According to Surveying and Cartographic Law, ground and building cadastre is a computer database managed by county's chief. It is one of few information systems in Poland that have such a high computerization level.

The subject of this article is the prices and values register data employment possibilities estimation for application connected with estates valuation, especially using Cadastral Data Exchange Standard (SWDE), for data transfer.

The legal bases for handling prices and values register are also presented in this paper. The detailed content of this data according to The Order of Ministry of Regional Development and Buildings – in case of Ground Cadastre and Buildings, from 2001 is described here.

The method of prices and values register (on the example of county capital town) data transfer from Ewid 2000 software is described in the paper. The authors realize that methods of data transfer may vary due to software used in cadastre system. The Ewid 2000 software used for data transfer and mechanism of this transfer to Cadastral Data Interchange Standard (SWDE) were presented in this paper.

Keywords: SWDE, estates' prices and values register, real estates valuation

Józef Czaja, Joanna Klajn: **The Unbuilt Real Estate Analysis for the Area of Srodmiescie District in Krakow in the Aspect of Updating the Perpetual Usufruct Payments** • Geomatics and Environmental Engineering 2007, vol. 1, no. 4

The article presents the results of the unbuilt real estate analysis located in Srodmiescie district and adjacent land from south-west and west side of the city, including Krowodrza and Podgórze areas, which were the subject of market transactions from December 2004 to July 2007. The analysis was held in the relation to present issues involving updating the amount of perpetual usufruct payments, in this case, according to the land in the one of cracovian housing co-operative perpetual usufruct. To present this problem, the data base of 59 unbuilt land properties was collected. Basing on information about prices and dates of these transaction, the unit transaction prices were updated for August 2007. In the following part of this work, there were chosen 23 transactions of comparable properties from the last two years before analysis. The made calculations shows that the unit price of these type of properties, located in the central area of Krakow, is on the level from 975 zł/m² to 1386 zł/m².

Keywords: the updating the perpetual usufruct payments, the market analysis, the market value prediction

Józef Czaja, Piotr Parzych: **The Methods of Commercial Enterprises Valuation** • Geomatics and Environmental Engineering 2007, vol. 1, no. 4

The various definitions of different values' categories were described in this paper. The methods and procedures of commercial enterprises valuation were outlined, too. The basics of DCF method application for commercial enterprises generating cash flow, valuation are thoroughly presented here. Next, formulas for equity capital cost, long-term liabilities cost and the whole capital cost were given. In the final part of the paper the methods of equity capital cost calculation and its application in Poland were presented as well.

Keywords: commercial enterprise, value, valuation methods, DCF

Janusz Dąbrowski: **Determining the Rules of Calculation Macroeconomic Attributes for the Needs of Evaluation of Bank-Mortgage Value** • Geomatics and Environmental Engineering 2007, vol. 1, no. 4

The article by means of the analysis of professional standards, domestic and foreign, as well as by means of determining the environment influencing the value of an estate, using the equation of money circuit, brings closer and defines the need of taking under consideration the macroeconomic attributes in the process of calculation bank-mortgage value of estates. The author indicates the need of carrying out a broader research,

mentioned in the article, as a result of a huge correlation between: the crisis on the market of estates and the crisis occurring in the bank sector.

Keywords: bank-mortgage value of estates, macroeconomic attributes, estate market, the equation of money circuit.

Jan Dobrowolski: **Perspectives of Application of Innovative Environmental Biotechnology for Sustainable Development of Co-operating Regions** • Geomatics and Environmental Engineering 2007, vol. 1, no. 4

Sustainable management of the natural resources was initiated over 50 years ago by prof. Walery Goetel at AGH. He recommended interdisciplinary co-operation on sozology and sozotechnics. He also initiated the Open Seminar for contribution of society in promotion sustainable development of Cracow Region. The author started in 1968 with the National Summer Schools on the Human Environment, based on interdisciplinary case studies and problem-solving training for promotion innovative technologies and sustainable development of different regions in Poland. He chair from 1989 series of International Conferences for exchange related experiences. The author initiated in 1975 research-developing studies on application of laser biotechnology for more efficient protection natural environment and promotion sustainable development. Laser photostimulation of biological materials is especially useful for reclamation of polluted areas, increase of biomass and bioenergy production following increasing demand, as well as for more efficient treatment of waste water in hydrobotanic plants and acceleration of formation of protective green areas alongside main roads. Application of innovative environmental biotechnologies was recommended for sustainable development of some regions in Poland and foreign regions during European Pilot Projects.

Keywords: environment biotechnology, sustainable development

Alojzy Dzierżęga, Jan Gmyrek: **Influence of Additional Measurements of a Network Using GPS on the Accuracy of Setting out by the Polar Method** • Geomatics and Environmental Engineering 2007, vol. 1, no. 4

The paper presents influence of additional network measurements using GPS on the accuracy of setting out by the polar method. The mean errors for GPS measurements were assumed 2 mm and 8 mm. As accuracy parameters, mean errors of points, mean errors of sides, mean errors of directions of sides and mean errors of angles were assumed. On the basis of the analysis one can say that additional network measurements using GPS do not influence on the accuracy of setting out of sides and angles but they cause triple reduction of mean errors of points and some reduction of the mean errors of directions of sides of the setting out an object.

Keywords: additional GPS measurements

Rafał Gawalkiewicz: The Example of Appliance of Laser Scanning in Coating Objects Monitoring • Geomatics and Environmental Engineering 2007, vol. 1, no. 4

The article describes the possibilities of applying Trimble GX panoramic laser scanner and Trimble VX scanning total station for inventory of structural deformations of ferroconcrete coating of hyperboloidal cooling tower. It also describes the algorithm of applying spatial data and way of interpreting scan data for determination of deformations during operation of the tower.

Keywords: scanning laser, inventory of hiperboloidal cooling tower

Rafał Gawalkiewicz: The Example of Appliance of Laser Scanning in High Industrial Objects Inventory and Monitoring • Geomatics and Environmental Engineering 2007, vol. 1, no. 4

The article presents the possibilities of applying Trimble VX scanning total station VX Trimble and methodes of high buildings deformations determination. The research was based on example of inventory of historic brick factory chimney, (located on the area of Salt Mine "Bochnia"). There were also described the results of 3D modeling of chimney solid based on points data properly prepared (cloud points) in AutoCAD program.

Keywords: scanning laser, monitoring mining and industrial objects, the method of data point analysis

Paweł Hanus: Application of Documentation of Former Austrian Cadastre for Real Estate Legal Status Regulation • Geomatics and Environmental Engineering 2007, vol. 1, no. 4

Non-regularized real estate legal status concerns a case, when one can not make to ascertain (on the basis of land registry file, set of documents connected with land registry or other documents) persons who have rights to this real estate turnover are not possible to perform. Regulation of such a status often depends on preparing so called "synchronized list", comparing real estate legal status with real estate factual status revealed in ground and buildings register. Preparing such a list on the territory of former Austrian cadastre needs knowledge of rules of creating this cadastre. Thus, by real estate legal status regulation for such lands it is necessary using documentation of this cadastre. The paper presents main reasons for discrepancies in real estate descriptions between ground and buildings register and former Austrian land register book and possibilities of using cadastral documentation of former Austrian annexed lands.

Keywords: land and building registers, realty cadastre, real estate registers

Ryszard Hycner, Józef Maślanka: **Possibilities and Restrictions of Applying Cadastral Data within Process of Working out Land Use Plan** • Geomatics and Environmental Engineering 2007, vol. 1, no. 4

The objective of the paper is to present possibilities and restrictions concerning cadastral data applied during the process of working out project of land use plan. It has been showed in the paper both impendency resulting from not complete or irregular making use of these data, and also advantages and specification of information captured from cadastral data bases. It has been pointed on differences in conception resulting from different law regulations, controlling spatial planning and real estate cadastre.

Keywords: land information system, spatial planning, cadastre

Ryszard Hycner, Marianna Piwowarska, Małgorzata Węgrzyn: **Information Flow between the Land and Building Register and the Real-Estate Register** • Geomatics and Environmental Engineering 2007, vol. 1, no. 4

The problem of information flow between the land and building registers and real-estate registers has been discussed in this article. The data scope, priority goals and technical-legal basis for the functioning of both systems has been outlined. To familiarize the significance of the inter-system information flow theoretical discussions have been completed with practical data obtained from research conducted in Geodesic Department of the Town Office of Cracow – institution running on behalf of the President of Cracow land and building registers, and in Real-Estate Register Department IV of the District Court for Cracow-Podgórze running real-estate registers for Cracow city and communes: Kocmyrzów-Luborzyca, Wielka Wieś i Zielonki. The operations mechanism of both institutions has been presented and the course of their co-operation while realising the information process being information flow, has been discussed in detail. The attempt to assess the currently functioning model of information flow between the cadastre system and real-estate-accountancy system and the presenting of methods for its improvement was one of the main purposes of this article.

Keywords: information flow, land and building registers, realty cadaster, real-estate registers.

Arkadiusz Kampczyk, Edward Preweda, Marian Sołtys: **Classical and Automatic Systems in 3D Inventory Measurements of Technicel and Exploitation Instruments and Rail Track** • Geomatics and Environmental Engineering 2007, vol. 1, no. 4

The paper presents several automatic measurements systems including classical and electronic rail measurement devices for the measurements of the geometry of rail tracks and junctions in 2D and 3D. The co-operation of the software used in these systems was characterised, detail measurements of data processing, regarding graphic and descriptive reports. Se-

lected examples of the reports making the results of experimental measurements were given. Based on the carried out measurements and obtained results the assesment of the application of systems was made, regarding the requirements of proper instructions referring to the studies of the geometry of rails tracks and rail junctions.

Keywords: technical and exploitation instrument, junction, rail track, rail measurement device, measurements of geometric parameters

Krzysztof Koreleski: Eliminating Water Erosion within the System of Land Sanation Measures • Geomatics and Environmental Engineering 2007, vol. 1, no. 4

The paper defines the place of anti-erosional meliorations within the system land sanation (improvement) measures. It presents basic measures aimed at protecting soil against water erosion, taking into consideration the degree of their implementation urgency, and outlines the question of eliminating water erosion in spatial planning. Among anti-erosion measure, we can mainly enumerate activities of an agrotechnical and bioengineering character. From the technological perspective, these are primarily: anti-erosional crop rotation, anti-erosional field patterns, afforestation, biological and mechanical reinforcement of ravines and escarpments. Not only do they aim at restoring the imbalanced ecological systems (mainly agroecosystems) but they also intend to aptly shape physiographic elements (relief, soil, water regimes) as well as methods of land use, according to spatial planning regulations. Anti-erosional measures help in implementing the policies of sustainable development through land use rationalisation, taking into consideration the requirements of sozology.

Keywords: soil sanation measures, water erosion, eliminating

Anita Kwartnik-Pruc, Zofia Śmiałowska-Uberman: Documentation of Land Assignments in the Periods of the Land Reform and the Settlement Action • Geomatics and Environmental Engineering 2007, vol. 1, no. 4

The article explains procedura aspects of the land reform and settlement action carried out after the 1944. As a result of land division and distribution, depending on the area in consideration (e.g. Recovered Land, the former Free City of Gdańsk, the remaining areas of Poland) different types of documents were issued and delivered. In execution works an important role was played by the chartered surveyors. They performed an independent geodesy profession. As a result of the land reform the state land fund had been created, which existed till 1991, and its ownership rights were either published in real estate registers or in separate sets of documentation. Some of the latter ones still exist, as substitutes to the proper real estate registers. An assignment of land issued in execution of the land reform are still legally valid in case of discrepancies in between entries to real estate registers and actual legal status.

Keywords: land reform, settlement action, act of legal assignment, chartered surveyor

Monika Mika: **Model of Cadastre System Based on Object Oriented Analysis (OOA)** • Geomatics and Environmental Engineering 2007, vol. 1, no. 4

Model of ground cadastre in Poland was taken under analysis in this paper. Roles and graphical notation of Object Oriented Analysis was used to model ground cadastre. That model consists of four layers of different abstraction: subjects, objects and classes, structures, attributes. Additionally model includes subjects: organization, geometry, objects, entity, law state. Ground cadastre was presented as multitasking system. Such defined system is possible to be introduced in Polish conditions.

Keywords: cadastre, object analysis, cadastre model

Zofia Śmiałowska-Uberman: **Chartered Surveyors – History of a Profession** • Geomatics and Environmental Engineering 2007, vol. 1, no. 4

The author presented fundamentals of independent land-surveyors profession in the period falling between the two World Wars and subsequent years up to 1952. She pointed out limitations in acquiring proper authorisation and specific of sworn chartered surveyors profession. This occupation carried a considerable social prestige and a different legal statute.

Keywords: chartered surveyors, free geodesy profession, technical and legal works, land-surveyors offices

Andrzej Uznański: **Chosen Problems of Data Teletransmission During RTK GPS surveys** • Geomatics and Environmental Engineering 2007, vol. 1, no. 4

The range of applications of spatial surveying techniques can be broadened thanks to communication ports of GPS receivers, as a variety of external devices can be attached to them. The paper presents problems pertaining to data transmission during RTK GPS surveys, taking into account all applicable methods for point position determination with this technique. Special attention is given to the asynchronic serial transmission according to the RS232C standard, as it is widely used in GPS receivers. The newest method of position determination with the RTK GPS measurements makes use of the virtual reference stations and the Ntrip protocol. Within discussion of this solution, some remarks pertaining to servers processing data streams, and to specialized software dedicated for use of the Ntrip protocol during communication between a computer and a cellular phone, are given.

Keywords: Real Time Kinematic Surveys, RS232C, AT commands, Icecast