Karol Firek, Rajmund Oruba, Aleksander Wodyński • **Classification of Building Structures Located in Industrial Plants with Regard to Calculating Property Tax** • Geomatics and Environmental Engineering 2014, Vol. 8, No. 1

Classification of assets of industrial plants meets with difficulties arising from the imprecise and inconsistent legislation. As a consequence of differences in interpretation, significant discrepancies in the calculation of the tax due arise, resulting in numerous lawsuits and additional high costs. Classification of assets of industrial plants for tax purposes requires knowledge of the law, of the construction, and of the process engineering of a plant. This article discusses selected criteria of classifying assets of industrial plants for the purpose of calculating property tax, on the basis of the Construction Law, with consideration to the Act on Local Taxes and Fees. This article also provides examples of classifying building structures located in industrial plants based on the adopted criteria.

Keywords: classification of building structures, property tax

Waldemar Krupiński • **Statistical Methods Applied in Evaluating the Reliability of Land Surveying Equipment** • Geomatics and Environmental Engineering 2014, Vol. 8, No. 1

In order to verify whether measurements made by an electronic total station and a Leica level are systematically correct, a series of measurements by these instruments was performed on the test grid at UR Krakow, Balicka.

Leica TS 02 total station was used in measurements of horizontal angles while distances were tested using the following statistical tests of identity:

– horizontal angles – Smirnov–Kolmogorov test,
– distance – confidence intervals testing.

Elevation measurements performed by self-leveling Leica Sprinter 150M were tested by a T-test. The theoretical basis for

the tests of identity and their practical application are discussed. The research concludes that the test instruments do not always meet the criteria, and in such a case, prior to measurements, they should be subjected to rectification.

Keywords: mathematical statistics, tests of conformity, statistical tests of identity, probability sample testing, land surveying instruments

Marek Kulczycki, Marcin Ligas • **Qualitative Similarity Coefficients in Real Estate Market Analysis** • Geomatics and Environmental Engineering 2014, Vol. 8, No. 1

The authors state that in principle every two properties belonging to the same real estate market are similar. This cannot be even changed by the fact that one of them is the least attractive on the market while the other is of highest attractiveness – we still consider them as "similar properties". If someone does not accept this approach there is a way out from this situation by the redefinition of the market causing its narrowing. This paper considers the question of assessing (measuring) the similarity under the condition that properties are characterized by qualitative attributes – either binary or nominal. Such a case does not seem senseless for the real estate market, and there are some who indicate the necessity of considering the characteristics of the property just as qualitative attributes because of the subjectivity accompanying describing the property that causes that characteristics are only seemingly of ordinal nature.

Keywords: property characteristics, similarity coefficient, valuation, market analysis

Olga Kuras, Przemysław Kuras • **Preparation of Observation Base for Classical Surveys for Verification Purposes of Applying Modern Techniques for Measuring Displacement of Retaining Walls** • Geomatics and Environmental Engineering 2014, Vol. 8, No. 1

Landslides and landslips are a phenomena with very dangerous consequences for the safety of people and their property. Prevention is an important geotechnical issue. One method of protecting embankments and slopes is the construction of retaining

walls. In order to ensure the safety of large retaining structures, they should be monitored during and after the completion of the construction works.

Due to their size and location, often near busy roads, retaining walls are structures the measurement of which using classical methods is difficult and time-consuming. It is reasonable, therefore, to verify the usefulness of modern surveying techniques for checks of such structures. This article presents the preparation of an observation base for classical surveys, the results of which will be compared with the results obtained from terrestrial laser scanning and ground-based radar interferometry at a later stage.

Keywords: retaining wall, non-contact measurement methods, engineering and industrial surveying

Monika Mik**a • Thematic Map as a Basis for the World's Geoinformation System in Chronological Approach •** Geomatics and Environmental Engineering 2014, Vol. 8, No. 1

Geoinformation can be defined according to [9] as a discipline dealing with the collecting, obtaining, gathering, processing, transmission, analysis and interpretation of data about the Earth. These data are collected for centuries on maps. Regardless of forms of cartographic elaborations changing with the development of technics, the basic function of each map (and especially of thematic maps) was, is and will be the transfer of data about the world in the graphic form. The first maps were prototypes of modern geoinformation systems. In the literature one can find many definitions of these systems. According to [6] it is a computer information system for entering, storing, processing and the presentation of spatial data, which primary function is to support the decision.

The purpose of this publication is the cross-sectional analysis of the methods and forms of presentation of maps (with particular emphasis on thematic maps) in Poland and in the world over the centuries. From woodcuts or clay tablets to today created and widely used interactive map. The basic thesis of the publication is to see the map as a basis for geoinformation system at every stage of development.

Keywords: Geoinformation, thematic map, GIS

Małgorzata Słota • **Decomposition Techniques for Full-waveform Airborne Laser Scanning Data** • Geomatics and Environmental Engineering 2014, Vol. 8, No. 1

This article provides an overview of full-waveform airborne laser scanning data processing methods.

Since 2004, when the first commercial small-footprint full-waveform LiDAR system was introduced, a vast amount of studies have been carried out on the potential of utilizing full-waveform data in various fields such as forestry, archaeology, urban areas modelling and point cloud classification, resulting in a range of approaches to the processing of full-waveform data. This research is an attempt to systematize the knowledge in this field.

The first part of this paper presents a brief description of the full-waveform system. Then, the typical methods of data processing are described, starting from simple peak detection methods, followed by methods based on wave modelling using basic functions, and going on to an analysis focused on the correlation between an emitted and backscattered signal.

Keywords: LiDAR, airborne laser scanning, full-waveform, peak detection, decomposition

Anna Trembecka • **Analysis of the Process of Real Estate Disposal by Public Tender and Related Legal and Surveying Actions on the Example of the City of Krakow** • Geomatics and Environmental Engineering 2014, Vol. 8, No. 1

An important part of the City of Krakow budget revenue are the proceeds from the sale of properties by way of a public tender. This mode is a primary manner of disposal of public property which ensures transparency of the proceedings and open access for the participants.

This paper analyzes the stages of the tender procedure, the type and number of the properties sold by the city of Krakow in the last three years, as well as the revenue from such activities. Also, surveying and legal actions were proposed which, in the opinion of the author, are required to be carried out before the commencement of the tender procedure. It will allow us to eliminate the problems which prevent the notarial deed from being executed with the successful tenderer, as well as to limit damage claims directed to public entities.

Asking prices in the tender shall be established based on the values of properties specified in the appraisal studies executed by certified appraisers. Nevertheless, a number of tenders relating to the properties of the City of Krakow, ended up with an unsatisfactory result.

Keywords: real estate disposal, tender, surveying and legal actions