Tomasz Adamczyk, Agnieszka Bieda: **The Applicability of Time Series Analysis in Real Estate Valuation** • Geomatics and Environmental Engineering 2015, Vol. 9, No. 2

Time series is an ordered set of observations whose domain is time. The structure of most series can be defined by two basic components: the trend and the seasonal component. The knowledge of a mathematical model of a process described by the series allows us to generate a prediction of the analyzed phenomenon on its basis.

In view of the fact that the purpose of time series analysis is to identify the essence of the phenomena they describe, or to forecast their future value, the authors therefore propose to use them in the valuation of real estate to analyze a trend of price changes in time and to determine their market value.

Keywords: time series, real estate valuation, market value, time trend

Marta Glanowska: **An Analysis of Factors Affecting Duration of Planning Works** • Geomatics and Environmental Engineering 2015, Vol. 9, No. 2

The document that has the greatest impact on the development of a municipality in terms of spatial planning is the local land use plan. The document determines the development of the municipality and has a direct impact on its policy, people, economy and the environment. In this article the attention was drawn to the planning works which are carried out in order to accept the local plan. It also has been estimated, how the local governments fulfill their obligation associated with the local land use plan. The procedures of creating such planning and the contents of them as well as subsequential phases of the spatial planning has been analysed on the example of Krzeszowice municipality. It was emphasized, that the procedure is very long and the probable reasons of this phenomenon was emphasized too. In the article was emphasized the considerations, which must be included in a local plan, which was introduced by the Planning and Spatial Development Act. In accordance with the act, the order of the

procedures and time limits for the various stages of planning are particularly important.

Keywords: land use plan, planning policy, spatial planning, study of determinants and trends of development

Ryszard Kozakiewicz: **Possible Use of Spatial Information Listed in INSPIRE Directive in Environmental Impact Assessment**
• Geomatics and Environmental Engineering 2015, Vol. 9, No. 2

The environmental impact assessment (EIA) has become a permanent element of each investment process. The requirements for the scope and level of detail of the assessments are increasing systematically, what may cause excessive prolongation of a planning or investment procedure. The access to environmental data plays crucial role in accelerating the EIA procedures. Simultaneously with the changes in the range of the EIA scope, the spatial information infrastructure is created (IIP) in Europe. Synchronisation and coordination of activities towards the development of both domains may shorten the process of conducting the environmental analyses, increase their credibility and provide the efficient mechanism of supplying the IIP with environmental data.

In this article, the formal requirements referring to the scope of the EIA combined with the planned content of IIP thematic layers, based on the provisions of the INSPIRE directive, are given. The scope and level of detail of information demanded at various stages of EIA has been shown in the article as well as the needs of EIA performers towards the resources of the environmental information system, included in the Geoportal. The necessity of taking into account the specification of EIA content for designing the resources of IIP and the role of EIA for the efficient performance and popularisation of geoportals, have been proven in the article.

Not only the content of thematic layers should be optimised but also the manner of data presentation, colours, searching procedures and data associating. In connection with the development of cheap, highly efficient technologies of environmental monitoring and imaging, the spatial information systems are flooded by the flow of raw measurement data. Its optimal exploitation is currently becoming the most important technological, scientific and social challenge. Environmental impact assessment, with its complexity and interdisciplinary nature, is an excellent testing plot for research in this area.

Keywords: Environmental Impact Assessment, INSPIRE

Karol Kwiatek, Regina Tokarczyk: **Immersive Photogrammetry in 3D Modelling** • Geomatics and Environmental Engineering 2015, Vol. 9, No. 2

The article presents the concept of 3D modelling from immersive video. The first part of the article presents current approaches to 3D modelling from panoramas, from image-based modelling programs, via manual elaboration of objects from panoramas, to automatic acquisition of the point cloud from dense matching of panoramas. The second part of the article discusses immersive video, numerous applications of this new medium and the methods of imaging all-around space with cameras capable of recording a 360-degree video. The paper investigates the legitimacy of using a large number of immersive images of relatively low resolution in 3D modelling. If the immersive camera moves along the set trajectory, the number of low resolution panoramas taken in this process will facilitate creation of metric 3D models. An examination of the test field was performed with a Ladybug®3 camera. Image orientation and a textured 3D model were developed in Agisoft Photoscan. The paper investigates how such factors as the method of stitching images into panoramas, the selection of the sphere radius, the image file format and a density of panoramas affect the 3D modelling process. The results present the validity of further research in this area.

Keywords: panorama, spherical video, close-range photogrammetry, 3D modelling, spherical photogrammetry

Przemysław Leń, Izabela Matysek, Oleksandra Kovalyshyn: **Dimensions of Plots Belonging to Out-of-village Owners in the Village of Będziemyśl, Commune of Sędziszów Małopolski** • Geomatics and Environmental Engineering 2015, Vol. 9, No. 2

The occurrence of plot patchwork is one of significant factors having a negative influence on the organization and level of agricultural production. Those plots are located within the area of a village where their owners live but they can be also found beyond it. Grounds located in the external plot patchwork are in the possession of villagers as well as of commune and town dwellers. Inhabitants of administrative, service, industrial or cultural and educational centres are mainly legal heirs of parents who lived in the country or emigrated to cities. However, it is necessary to mention non-resident owners who have bought building lots in the countryside due to attractive location and prices [4].

Research was carried out in the locality of Będziemyśl situated in the commune of Sędziszów Małopolski. It is a village which

is located 18 km away from the voivodship town of Rzeszów, 16 km away from the poviat town of Ropczyce and 8 km away from the commune locality of Sędziszów Małopolski.

Keywords: plot patchwork, land belonging to out-of-village owners, land consolidation

Monika Mika, Monika Siejka: **The Betterment Levy and Time Parameter in the Light of Existing Legislation** • Geomatics and Environmental Engineering 2015, Vol. 9, No. 2

Paying the local fees by the owners and perpetual users evokes many emotions associated with the rightness of determining their amount, as well as the method of payment. In addition, the legislature left at the discretion of the commune council the amount of charged fees and they depend on the settlements of a resolution of the commune council. Therefore, it causes large differences in the amounts charged depending on the location of the real estate, plus the date of their calculation. According to the current legislation in Poland the following types of local fees are specified:

- betterment levy,
- fees for perpetual use,
- planning fees.

The subject undertaken in this publication relates to betterment levy due to the increase of property value as a result of the construction of technical infrastructure, understood as a participation of the property owner in the cost of the investment. The paper aims to demonstrate a significant association between the amount of the betterment levy and the date of its calculation. This relationship results from the fact that the price level is substantially coupled to the time of the transaction. Volatility of prices in time effectively reflects the estimated value, thus will affect the amount of fixed charges.

Keywords: value of the property, betterment levy, evaluation

Karol Ożóg: **Sustainability of Land and Buildings Database Records, Shown in the Example of Zabratówka village, Consolidated in 1995** • Geomatics and Environmental Engineering 2015, Vol. 9, No. 2

In the thesis, analysis of the updated size information in land and buildings database records, on the basis of Zabratówka

village, located in Rzeszów agglomeration, will be performed. The analysis will be based on land and buildings registration records. Divisions of the integrated agricultural parcels will confirm the permanent withdrawal of farming activity, whereas the size changes concerning arable land will be proven to affect and destabilise land-use registers.

Keywords: cadaster of real estate, property management