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THE IMPLEMENTATION OF THE TOPOGRAPHIC AND IDENTIFICATION WORK FOR THE OUTPUT OF THE TOPOGRAPHIC SUPPORT NECESSARY FOR THE ISSUE OF THE URBAN ZONAL PLAN

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Abstract:*The scientific research for the execution of the topographic work and the indificationinvolvedin the realization of the topographic support neededfor the development of the Local Urban Planning, took place in the commune Mosnita Noua, Timis County, in an area delimited by DE.116/3.HC.20, and DC .97 "The Oxes Road" at approximately 1200m vest from the Eastern border of the old built-up area of Mosnita Veche . The equipament used for the implementation of the trigonometrical survey were a dual frequency reciver Trimbel R6 Receiver, which is a compact upgradable system operating on 220 channels. The antenna, the reciver and the battery are included in the same casing. Equipped with technology Trimbel R-Track , this allows the reception of the signals emitted by GLONASS satellites, which helps improving the GPS solution, anabling the researcher to obtain better results under more difficult conditions for the satellites measuremeants. The Local Urban Regulation represents the set tehnical rules needed for the elaboration of the technical documentation for the tehnical approval of plotting, construction , and the public utility endowment for area in question. The Local Urban Regulation(R.L.U) has a double utility. Firstly , it establishes suited rules for the area for which it was issued, in accordance with the sustainable development principles (the parcels configuration, property nature, the position, and the buildings configuration and the related arrangements and the occupation and land use conditions). Secondly, it specifies the permanent character of the area (according to the provisions of the Urban General Regululation) and imposes the conditions and the necessary conditions and restrictions needed for respecting the provisions.*

• Introduction

The Satellite System of Global Navigation (GNSS) are systems which allow the determination with high precision of a position in a geocentric reference system, in any point situated on the terrestrial surface, near or outside it, using Earth's artificial satellites. The determination of the position refers to the obtention by satellite measurements from focal points, of absolute and relative coordinates of these points in a precise reference system. The reference system employed is WGS84 (World Geodetic System 1984). It is essential to visit the points for every point that needs to be stationed, before the beginning of the measurements . It is indicated that all the members of the team to participate to the field recognition and to analyse on the spot the obstruction diagram.

Based on the field recognition one can determine with precision: the most comfortable access to point, the complete draft containing the important access directions, the marking mode, the complete blueprint of the field with the important access directions, marking mode , for facilitating the point recognition in the area, regarding the private properties. During the stations identification one will take into consideration the weather conditions which don.t affect the GPS system or the receivers, but in exchange could affect the access to station. Still in the recognition phase one identifies the points signalling systems, taking precaution measures for those situated on roads (through directional flashes) or those stationed during the night (adequate illumination systems).

The technical documentation (the topographic survey) is a combination of office work and field work. A topographic survey is needed when one wishes to obtain a construction of demolition authorisation for the obtention or modification of a detailed urban plan, zonal general for the planning and implementation of utilities networks.The urban zonal plan is the regulation which it is coordinated the integrated urban development of some areas with high level of complexity or with exacerbated urban dynamic.http://www.ocpibv.ro/index.php/ridicari-topografice. Through PUZ it is insured the urban development plan or the area with the Urban General Plan (PUG). The main regulations established through PUZ refers to the occupation percentage, the field use ratio, the maximal hight, the functionality of the area, the construction regime, the withdrawal of the buildings from the alignment and distances to the sidelines and the rear of the plots.

• M.aterial and method

The site subject to this project is situated in the Moșnița Nouă commune, central-north area of the administrative territory, on Oxes Road, between Moșnița Veche and Timișoara city. The fieldis surrounded by plots for housing and complementary functions. According to the Urban General Plan (ongoing) and the Director Urban Plan of Moșnița Nouă, the whole block in which the studied field is included is part of a bigger area with mixed functions - housing and commerce. The field studied is situated in the extra urban area of Mosnita, in an area of high interest for real estate developers. Some fields from the neighbouring of the topographic number treated are already plotted and some of them are already built upon. Timișoara is part of the Banato-Crişană Plain, subunit interfluvial Timiş-Bega Plain(Timisoara Plane) which appears as a surface relatively plain and monotone. The studied zone fits into the general characteristics of the city. The field is relatively flat. with no water logging danger or land sliding. Moșnița Nouă belongs to the temperate continental climate with sub mediterranean influences.The measurements processing was done through the topographic calculation tool Trimble Total Control v.2.73, the coordinates being determined in the projected system Stereographic 1970. The data downloaded from the device were stored on digital supports and organised on files : „04.02.20.dc", „04.02.20.htm", „04.02.20.job"and „04.02.20.jxl", annexed hereby.

Fig.1 Presentation of the equipment GNSS Trimble R6

The representation in documentation of those was done respecting the provisions of the Conventional Signs Atlas for topographical plans at scales 1:5000, 1:2000, 1:1000 and 1:500, edition 1978.Due to the fact that the surface referred to in the PUZ is over 2 ha, we have determined two borns, with a GPS receiver through the static mode. the topographic surveys from the field were mede in measuring mode Real Time Kinematic (RTK) with a GPS receiver which receives corrections in real time from the permanent station TIM1, through GPRS connection. In thisscientific research we have usedthe Trimble R6 GPS which is illustrated bellow in figure 1.The static method was the first method developed in the GPS measurement framework. It can be used for the measurement of the long bases, usually 20 km or longer. A receiver is placed on a point who's coordinates are known with precision in the system l WGS'84. This is known under basic receiver name . The other receiver is at the other end of the base and it is known as mobil receiver (rover).

• Results and discussions

The first step taken in the beginning of the topographic work consisted in the actualisation of the tenementno. cadastral A.1161/10, registered in the lang register no. 401342 - Mosnita Noua, for the modification of surface from 14200smto14127sm.

The topo-cadastral operation made in the framework of the research were:the topographic survey of the outline points through the method „Real Time Kinematic"; the output of supplementary measurements with the total station for the verification of the property borders and for the determination of the points that could not have been surveyed with the GNSS equipment; data processing and the report issuing; the the determination of the outlines points with the altimetric projection system Stereographic 1970, respectively level Black Sea 1975. The result of the work is presented infigure 2.The second step was the dismantling of the tenement with the cadastral no A.1161/11, registered in the land registry no. 402870-Mosnita Noua, in tow plots:For the performance of measurements was used GNSS "Dual frequency Trimble R6 Receiver", and the methods used for documenting the dismantling are the following: the topographic survey of the outline points through the method "Real Time Kinematic", the performance of additional measurements for the verification of the property borders and for the determination of the points which could not have been surveyed: the processing of data and issuing of reports,; the determination of the coordinates of the outline points in the projection system with the Stereographic 1970.

Following the measurements and the office processing the on site planning and delimitation with dismantling proposal.After the finalisation of the step above we will pursue to the third step - the drafting of the request for the issuing of the Urban Certificate (U.C) regarding the authorisation of the construction works, republished with the modifications and subsequent modifications and the request for the emission of the urban certificate for the following purpose: PUZ-Development residential area with complementary functions. utilities and public services.The issuing of documentation for the authorisation of the construction works, according to the provisions of the art, 3. par (1) from the law regarding: the construction, reconstruction, expansion, restoration, conservation, and any other works no matter the value; which are to be executed; constructions representing historic monuments, established by law ; works of construction, modification, extension,reparations, modernisation, and rehabilitation of the communication networks of any kind; forestry roads, art works, networks and technical-municipal, hydro technical works, riverbeds planning, land ameliorations, work of infrastructure instalments , works for new production capacity, production, transport, energy distribution and/or thermic, as well as rehabilitation and technology modernisation of the existing ones; fancying and urban furnishing, green areas planning, parks, markets, and other public spaces planning. Etc. The last step from this project is the output of the Zonal Urban Plan din - Development Residential Area with additional functionality, utilities and public spaces.

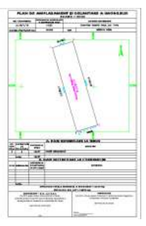

Fig.2,3 On site plan and delimitation of the tenement (update tenement data) and Presentation of regulations within the P.U.Z.

• Conclusions

We estimate that the proposals presented are part of the provisions of the Urban General Plan - in progress - the engineer efforts being focused on the implementation in the most normal condition of the main function: the inhabitation.The output of the Urban Zonal Plan will be made in accordance with the Guide regarding the methodology of issuing the framework content of the PUZ approved in accordance with the Decision no. 176/N/2000 of the Ministry of Public Works, and Planning and with the legal provisions in place.

When drafting the PUZ several elements will be taken into consideration: the integration of the complex in the future urban landscape; the corelation with the urban plans approved so far for the studied area and the surrounding areas. ; ensuring the safety of sites and the necessary amenities for the objectives set. We recomend to the Local Council Mosnita Noua the undertaking of provisions considered positive and their introduction in the PUG to serve to creation of a unified urban policy at the local level.In order to realise the topo-cadastral the following working methods were employed: the first step consisted in the modifcation of the tenance surface, then its dismantling into plots and the registration in the land register, followed by the request of the Urban Certificate and the opinion for the begining of works, in the end the actions needed for the issue of PUZ were taken. We recommend the centralisation of the information regarding the operations that will follow the PUZ opinion and their introduction in the existent database for the update and the corelation the zonal situation.