The role of 3D Land Administration in building management

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SUMMARY

The amount and the complexity of the information maintained according to regulations by public authorities is constantly increasing and is tightly related to the development of the technology. The possibilities of new technologies are also constantly increasing. Adopting technological accomplishments, especially in the area of information and communications technology, and their implementation in the system of registers, has enabled easier maintenance, access, and exchange of information. That opened the possibility of collecting new, additional information that which not acquired earlier due to the technical difficulties. Cadastral data are basic data for land administration system. Their availability in a digital form makes them interesting to an increasing number of new areas of human activity and they become essential for their further development. That leads to a constant increase in the demand for cadastral information. Therefore, countries have to work on the improvement of that information in order to keep up.

The recent research has demonstrated both the potential of building information management (BIM) for the 3D Land Administration, especially for legal spaces of building units and the advantage of the combination of physical and legal boundaries for their visualization. Many countries still use 2D cadastre, the proposed solution also allows for the connection of the existing cadastral information systems with these externally stored 3D legal spaces without the necessity of changing the systems (Janečka et al. 2024).

In the last couple of decades, there has been an increasing demand for property development in urban areas, resulting in the division of property ownership so that different owners can own delimited space on, above or below ground surface. Under 3D cadastre, the 2D cadastre management of data cannot meet the real land management of the three dimension space aspect and property. It is essential to introduce the 3D cadastre (Choon and Seng,

2013).

In larger cities, spatial and ownership relations are becoming increasingly complex, as are the procedures for managing residential buildings. Therefore, accurate records of buildings and their individual units are essential for the effective management of residential and commercial properties.

Using the Republic of Croatia as a case study, this paper examines the significance of 3D land administration for effective building management. Furthermore, it explores the potential benefits that can be realized in building management through the gradual transition from 2D to 3D land administration systems.

The paper will also explore the possibilities of LADM (ISO 19152) related to the maintenance of residential and commercial buildings. The legal aspects of 3D land administration will be addressed through examples from the Republic of Croatia, with special emphasis on new regulations concerning the management of residential buildings.