

# Conceptualising the Valuation of 3D Property

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**Key words:** Geoinformation/GI; Land management; Property taxes; Real estate development; Valuation

## SUMMARY

Despite human activities being undertaken in a multidimensional space – in terms of a plane (2D), volume (3D), and spatio-temporal (4D), the processes for the management and administration of these spaces rely upon two-dimensional approaches and models. The inadequacy of these current processes for determination, recording, dissemination of information about tenure, use, and value of land has gained increasing audience. From the multi-dimensional use of land, especially in terms of space, and the rising multi-level and vertical developments to cope with the limited space available needed to meet the unlimited wants of the populace, emerged the concept of 3D Geo-Information (3D Cadastres/3D Property). The push towards a 3D Cadastre has also been a result of the advances in technologies that have been supportive of the concept. A cadastre deals with three main information, land use, land tenure, and land value. Under the 3D cadastre, land use and land tenure have been explored a lot. However, this has resulted in a very skewed research focus on the technical side of the 3D Cadastre, through a theoretical lens. Fewer studies yet have also considered the legal and institutional components of the concept. In terms of the land value component of the 3D cadastre, this aspect has been explored mostly on a case by case basis, within the context of current statutory frameworks. That is to say, the current studies base the valuation of the 3D property on current 2D valuation approaches, with a vertical dimension. However, studies agree that the idea of a 3D Cadastre challenges the idea of what land is in a cadastre, and thus the valuation approach needs to be explored theoretically to identify the needed general adjustments to be made for the 3D property value to reflect and reconcile with the land use and tenure components.

This paper explores the key aspects of the Valuation of 3D Property. The paper starts with theoretical background of the nature of value, from the classical and neoclassical concepts. A background of current valuation approaches is also provided to provide a foundation for the later

literature review. Using a literature review approach, five key aspects of the application of land valuation, as a land administration function – institutional/organisational, technical, legal, economic, and social. These outcomes are then collated to develop a generic framework for the valuation of properties in the 3D Cadastre to serve as the general basis for future valuation of 3D property.

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Conceptualising the Valuation of 3D Property (10477)  
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FIG Working Week 2020  
Smart surveyors for land and water management  
Amsterdam, the Netherlands, 10–14 May 2020