

Real Estate Valuation Based on 3D GIS for Compulsory Purchase and Compensation

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SUMMARY

Accompany with the development of urbanization, land and housing compulsory purchase is becoming a hot topic in China. In this process, land and housing valuation play an important role for compensation. Due to the innovative experience driven approach of valuation activity, and the fact that subjective factors may infect the valuation results, thus, it is necessary to enhance the scientific aspect of real estate valuation. This paper discussed applicable approaches supported by 3D GIS for optimizing the compulsory purchase working area, improving the valuation approach and providing a public platform for equal communication. Researches in real estate valuation and 3D GIS technology were first discussed, as well as the contribution and deficiency of current valuation theory in compulsory purchasing. Then, the difficulties in the current valuation practice were analyzed. Secondly, positive results had shown after analyzed the possibility of using 3D GIS to improve the accuracy of real estate valuation model. Then, this paper discussed how to use 3D GIS to assist real estate valuation. The integration and implementation methods of combining 3D GIS with professional valuation model were proposed. A real estate valuation model with 3D GIS technology was established through technical support such as spatial analysis, spatial measurement and spatial statistics and so on. It realized the quantification analysis and visualization of real estate valuation. Finally, this paper developed a 3D GIS valuation system for compulsory purchase and compensation (3DGISVCPC). Through the practical applications of using this technology in real estate valuation, it shows some advantages of the proposed approaches. Firstly, the compulsory purchasing working area is optimized through many efficient tools to reduce the unnecessary working cost. Secondly, the valuation standard and compensation standard are unified. In the meanwhile, the valuation accuracy is enhanced and working efficiency is also promoted. Last, the communication platform is built through 3DGISVCPC, any disagreement of neither the valuation results nor the compensation value can be easily reviewed.