



Land planning models for seismic risk mitigation of infrastructure in urban area

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The rapid development of urbanization in China has led to a vast land area to be confiscated for building the much more buildings and infrastructure, and their structures are becoming more and more complicated. Because of the specific geological situation, where the famous Circum-pacific active structure zone intersects the Himalayas-Mediterranean active structure zone, there is a high seismic risk in China; and the infrastructure, particular those of newly built, faces a bigger seismic risk at present than that in the past due to lacking to the systemic land planning. It is necessary to build a suitable land planning model for seismic risk mitigation of infrastructure in urban area. The paper presents a land planning model of Aseismic optimization for building infrastructure in urban area, which has begun to be experimented to the land planning of some of cities in China. A series of databases and analyzing models such as geological structure and stratum database, earthquake database, geographic database, earthquake hazard analysis models and geotechnical hazard analysis models are included in this model. Using this model, the land area can be classified into 4 types, which respectively stands for the high, moderate, low and very low of earthquake hazard zones. The spatial analysis models of GIS are applied to zoning the 4 type's site by using of these results from this land planning model. Based on this land planning model, the optimizing Aseismic design of infrastructure in urban can also be proposed according to the actual land conditions.