

Seismic Microzonation of El-Fayoum New City, Egypt

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Abstract : Seismic micro hazard zonation for urban areas is the first step towards a seismic risk analysis and mitigation strategy. Essential here is to obtain a proper understanding of the local subsurface conditions and to evaluate ground-shaking effects. In the present study, an attempt has been made to evaluate the seismic hazard considering local site effects by carrying out detailed geotechnical and geophysical site characterization in El-Fayoum New City. Seismic hazard analysis and microzonation of El-Fayoum New City are addressed in three parts: in the first part, estimation of seismic hazard is done using seismotectonic and geological information. The second part deals with site characterization using geotechnical and shallow geophysical techniques. In the last part, local site effects are assessed by carrying out one-dimensional (1-D) ground response analysis using the equivalent linear method by program SHAKE 2000. Finally, microzonation maps have been prepared. The detailed methodology, along with experimental details, collected data, results and maps are presented in this paper.

Keywords : El-Fayoum, microzonation, seismotectonic, Egypt

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