

ABSTRACT

The objective of the present dissertation is the application of two Direct Displacement-Based Design procedures, for a nine-storey reinforced concrete dual system building, for a ground acceleration of 0.36g. The procedures used were the one recommended by SEAOC (Blue Book) and the one developed by M.J.N. Priestley & M.J. Kowalsky. The building was also designed according to the Greek Aseismic Code (EAK 2000) and the performance of the three buildings was assessed with the use of static inelastic analysis. For all three cases the minimum requirements and design assumptions were those recommended by the Hellenic Building Code.

There were some problems at the application of the two methods for the case considered. Mainly because the displacement spectras used (EC8) were different from those recommended by the 2 procedures. Thus, some modifications were made in order to meet the Hellenic requirements and the buildings characteristics but in such a way as to follow the Direct Displacement-Based Design philosophy.