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# **Seismic Performance of Reinforced Concrete Frames with Masonry Infills: Short Column Effect**

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Unreinforced brick masonry (URM) is extensively used for infilling Reinforced Concrete (RC) frames, not only in India but also in many parts of the world. Many a times these RC frames with URM infills lead to problems during earthquake excitation, if they are not designed properly. One such effect which leads to poor performance is the short column effect, caused due to large openings in the infill walls. The lack of design provisions in the Indian code of practice for the safety of structures with short columns leads to ambiguity in understanding the performance of such structures.

This paper focuses on understanding the effect of short columns on the seismic performance of brick masonry infilled reinforced concrete frame. A numerical study of G+3 storey structure with three arrangements of short columns is carried out. Type I: Structure with full infill walls, Type II: Structure with infill walls throughout except one bay and Type III: Structure with infill walls throughout except at ground floor. A comparative study of global capacity of the structure is carried out between all the three types and interpretations are drawn. It is observed that the structure with short columns in single bay at ground floor (Type II) shows almost the same load carrying capacity as the structure with full infill walls (Type I). But the load carrying capacity of the structure with short columns in ground floor (Type III) had drastically reduced when compared to the structure without short columns (Type I).

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