

## SEISMIC RETROFITTING OF PUBLIC SCHOOL IN MARKAZI PROVINCE

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### ABSTRACT

The essential priority of protecting children who attend schools that are vulnerable to collapse during an earthquake is irrefutable. The structural integrity of public schools in Markazi Province, IRAN is a source of deep concern due to their outdated design, deteriorated status and apparent lack of compliance with seismic design regulations. The purpose of this article is to advocate the seismic retrofitting of school buildings and to demonstrate the financial gain of such retrofitting procedures when compared with the cost of repair or replacement. In this paper, the authors offer practical information supported by numerical data, regarding the urgent priority of retrofitting school buildings and enhancing their functional capacity to withstand future destructive earthquakes. The aim is to alert school administrators, public leaders, government officials and international agencies regarding the seismic vulnerability of public school buildings and their subsequent effects on the safety of children in Markazi Province, IRAN. In addition, the authors demonstrate the economic advantages of seismic retrofitting in protecting children and their schools and calls for government intervention to assess and retrofit public school buildings to reduce their vulnerability to collapse during future earthquakes.

The vast majority of public schools in Markazi Province, IRAN is located in earthquake-prone regions, and they have insufficient resistance capabilities to remain structurally sound during an earthquake. Thus, these schools are highly vulnerable to existing earthquake hazards and are susceptible to collapse and failure in the event of a strong earthquake, which could lead to mass casualties of students and teachers and heavy damage to school buildings. School earthquake safety could be achieved by means of a collective effort geared towards structural retrofitting, capacity building, education and awareness. One way to mitigate earthquake damage is to reduce the fundamental risk factors by strengthening the structures. While the focus of this paper is on the urgent need for seismic retrofitting of school buildings in Markazi Province, IRAN, promoting school earthquake safety also has the potential to contribute to safer communities. Markazi Province, IRAN has a confirmed seismic risk, and thus, government officials should acknowledge their moral obligation to protect the children who are obliged to attend schools that are highly vulnerable to collapse during an earthquake. Public schools in Markazi Province, IRAN should be assessed and evaluated to ensure their structural integrity in terms of seismic resistance capability, and they should be retrofitted to ensure structural survivability, and thus, children's safety. The cost of retrofitting existing school buildings will not be at the expense of the educational opportunities of future children, nor will it hinder the establishment of new school facilities when needed. Therefore, the Iran Ministry of Education should either develop a subsidy programme or seek potential donors for the seismic retrofitting of school buildings and should publish technical guides to help engineers determine appropriate retrofitting strategies, both technically and economically.