

Retrofitting of Historical Buildings: Case Study of the Tabriz Bazaar

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ABSTRACT

Historical buildings are the cultural heritage of our ancestors and that is why these buildings are of great importance among the people of each country. In this regard maintenance and conservation of the historical structures should be significantly considered by public and government as a national duty in order to keep these precious buildings to be available for next generations. It becomes more important to preserve historical buildings when they are to be considered as touristic and internationally well known places. One of the most important stages in preservation of historical buildings is retrofitting and strengthening them against seismic loads. Historical buildings are mainly constructed of heavy masonry materials which cause the building to receive high values of seismic forces. Since Tabriz is a city which subjects to severe earthquakes, it is important to investigate the seismic resistance of historical buildings in this city and as a case study, the structural system of Tabriz Bazaar has been taken to be studied from the point of seismic resistance. As it is known this bazaar is one of the most important historical places in Iran, and recently was registered in world heritage centre (USA). Thousands of people attend this bazaar every day for their livelihood or shopping or visiting. But unfortunately this gorgeous building is not resistant enough to tolerate severe earthquakes. Moreover human interventions in some parts of the building have damaged structural harmony that would be a trouble when the structure is exposed to seismic loads. According to these problems and some other structurally objections of Tabriz bazaar and regarding to the importance of the building, this manuscript present some solutions for retrofitting of Tabriz bazaar.

Key Words: Retrofitting, Historical Buildings, Tabriz Bazaar, Seismic.

1 INTRODUCTION

Historical buildings are of important architectural and cultural values reflecting the pervious civilizations. In this regard, one of the main responsibilities of the present generation is to carry them to the next generations safely. As the main issues in maintenance of Historical buildings, analysis, repair and strengthening of these buildings, should be specifically considered. On the other hand, our country has a great architectural background, which has been appreciated by many architects all over the world. Hence, maintaining of these great structures is of a great importance. one of these architecturally and culturally valuable structures, is “Tabriz Bazaar” which is one of the largest multi-span masonry bazaars in Iran. It has been registered as World Heritage site by UNESCO. This Bazaar is visited by thousands of people every day and according to the current situation it is vital to strengthen this building in order to keep the damage to minimum in the case of earthquake occurrence.

In This paper it is targeted to investigate the main structural members of Iranian historical buildings and specifically Tabriz Bazaar and the prevalent strengthening techniques of these unique