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Istanbul Grand Bazaar Evacuation System Vulnerability Assessment

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Abstract The Grand Bazaar is a historical trade centre more than 500 years in the historical peninsula of Istanbul, Turkey. It consists of almost 3,600 small shops from different sectors (such as jewellery, carpet, leather, souvenir, finance, restaurant, café, confection etc.), two Bedesten, 64 street and 16 Han (inn) buildings. The Bazaar has 21 main gates that open to different streets and have different relation with outside. More than 25000 staff work in the shops and 300-500 thousand users come to Bazaar daily depending on the season and day. The pedestrian density is changeable, depending on the place of the inner street and the type of the sector. The historical disaster records (earthquake, dated 1766 and 1894, the grand bazaar fire, dated 1954) show that there was evacuation vulnerability. The main gates (exit doors) and exit route need some rehabilitation for safety evacuation during any disaster. The aim of this study is to evaluate the Grand Bazaar's emergency evacuation vulnerability. The evacuation vulnerability factors question the width, length and natural illumination of the evacuation route, maintenance of the roof, presence of hazardous materials, door specifications as size, material, opening direction, maintenance and difference in elevation on the route and exit area such as staircase and thresholds.

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Istanbul Grand Bazaar Evacuation System Vulnerability Assessment

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Keywords: Disaster, vulnerability, evacuation, the Grand Bazaar

Introduction

The Grand Bazaar, situated in Mahmutpaşa area in the historical peninsula of Istanbul, is representative of historical and cultural legacy in every aspect, still keeping its commercial importance today. The Grand Bazaar which is also called Çarşı-ı Kebir has developed in the construction process through centuries and taken its form today with the embodiment of Old Bedesten (Cevahir Bedesten) and New Bedesten (Sandal Bedesten) dating back to Sultan Mehmed in XV. Century (Fig. 1).

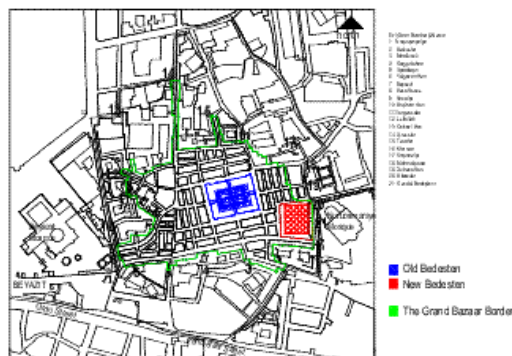


Figure 1: The Grand Bazaar plan with Old and New Bedesten

Through history from past to present; 1546, 1589, 1618, 1652, 1160, 1695, 1701 and 1750 fires, 1766 earthquake, 1791 Uzun Bazaar street fire, 1826 Hocapaşa fire, 1894 earthquake and 1934, 1943

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