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Assessing the existing context and proposed plan of Yazd historical texture from the point of access to emergency services using network analysis

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Extended Abstract

1- Introduction

In addition to general diseases, texture and material oldness, complexity and density of the building, have exposed the inhabitants of the historical texture of cities like Yazd to dangers such as earthquake and fire. Thus, in this type of texture, the supplementary and health-medical land uses like emergency has special importance regarding the roles they play. Accessing the medical services especially the emergency requires special attention to the connection network structure. Thus, in the urban plans especially for the historical and time-worn textures, this requires more attention to the connection network structure and also the pattern of locating and quick and in time and comfortable access to emergency centers related to that and according to the standards and criteria, in order to act quickly and without facing any obstacles and limitations of the urban environment in the case of requirement.

This study tries to analyze the existing context and the proposed plan of Yazd historical texture from the point of access to emergency services relating to its connection network structure.

2- Theoretical bases

The main view point in the research methodology of this paper is analytic descriptive and the applied kind which is performed with the systematic trend and based on the theoretical information and geographical data. The tool which is used for such analysis is GIS tool and Network Analyst tool. First a network of all the connection paths of the historical texture based on the real

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directions of traffic is prepared and after creating topology, the other network supplemental information such as street type, length and width of the street, one-way, tow-way and cul-de-sac, traffic volume, average speed, and the crossroads and the existing limitations was added and the special relation between the network lines was created and the network became intelligent and according to this, the time factor, i.e. the duration of each paths was obtained and the accessibility to the emergency centers was analyzed base on that.

3- Discussion

In the current situation, 40.8 percent of the parcels of Yazd historical texture have access to less than 4 meters of the street, which has reduced to 24 percent by the proposed plan. Also, in the existing context, more than 70 percent of the historical textures are farther (3 minutes) from the global standards of accessing the emergency service centers and about 50 percent of the texture reach these services in a later time (8 minutes) compared with the common time in Iran. The plan proposals based on the texture organizing and improving the connection network structure has resulted in a noticeable increase of the service area of the existing emergency center and consequently to an access to these services by a considerable part of the texture, such that about 60 percent of the texture has been covered under the global standards (3 min) and about 80 percent under Iran common standard (the 8 minute). In the existing situation, in the case of disruption in the connection network and blocking the main paths of accessing the emergency, there is no other appropriate alternative path while in the proposed plan this problem has been resolved somewhat and alternative path or paths are accessible.

4- Conclusion

Yazd historical texture causes an increase in the time of accessing of the citizens inhabitant in the texture to the emergency services in the existing situation due to the organic structure of the street network, while in the case of the disruption in a part of the traffic network, there is no optimum alternative path to be used in the emergency cases; the most important reason of this could be mentioned as not regarding the function hierarchy in the accessing network structure ,the narrow width of the paths and non-applicability of most of the texture paths for the traffic of vehicles, the one way paths and etc. The comprehensive protective plan of Yazd historical texture emphasizing the requirement of the increase in the applicability of the connection network in order to physically and functionally organize the texture district has overcome the problem of the citizens in the time of accessing the emergency services and became close to the existing standards; yet, there are parts of the texture which are not covered by these services in the standard times. Thus, possibly, a comprehensive revision of the current improper connection network structure of the texture and re-improving its paths network or locating a new emergency center based on current standards can be useful in resolving this problem.

Keyword: Emergency, Historical Texture, Existing Situation, Proposed Plan, Network Analysis, Yazd.

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