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## Environmental sustainability of newly developed city squares in historic cities: Case study of Isfahan-Iran

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### Abstract

In recent years, sustainable development has turned into a broad area that embraces all methods and techniques in different levels of human activities and knowledge aiming to save energy, time, money and natural resources. Thus, environmental sustainability as a major aspect of the concept has intended the environmental issues as: climate change, global warming, waste management, sound masking, etc. The principal goal of this paper is to investigate the role of public squares in new developments and suburbia in historic cities from the view of environmental sustainability. Accordingly, the paper deals with some examples of squares in a case study (Isfahan-Iran) to show some problems in adaptation with the new 21<sup>st</sup> century-style of urban development in such cities. Therefore, the investigation compares the original historic squares vs. some recently developed ones. The literature review of this paper is based on internet, books and journals and previously published conference papers.

Moreover, a qualitative research has been employed through local observation and survey in the location of the case study (Isfahan-Iran). The results will reveal the major principles of environmental sustainability in design of new public squares in such cities. This, in turn, opens new doors to future studies about adoption of old cities with new developments regarding to the concept of environmental sustainability.

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### 1. Introduction

Sustainability is to fulfil “the needs of the present without compromising the ability of the future to meet its own needs” in a system[1]. In recent decades, the increase of population on the Earth has attracted

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dramatic attention to the ‘Sustainability’ concept. Therefore, the concept has turned into a broad area embracing different levels of human activities and knowledge considering three major principles of: Environment, Economy, and Society (see figure 1). Hence, In building and urban sector, it intends all levels of design and construction procedure to reduce the negative impacts of built environments on ecosystem (weather, land, water, energy, and resource consumption) . Moreover, to create reasonable but viable economic systems with an ethical basis and encouraging equitability and responsibility within social and cultural systems and values [2].

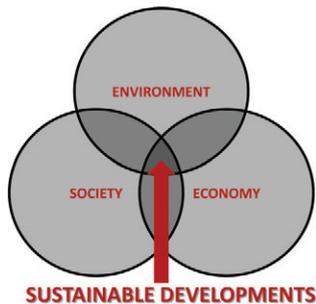


Fig. 1. The building blocks of sustainable development, (Lawrence, 2000)

As formerly stated in the abstract, the principal aim of the paper is to explore the definition, typology and role of public squares in new developments and suburbia in historic cities. This investigation has been carried out focused on ‘environmental sustainability’ through some examples of historic and recently developed squares in Isfahan-Iran as a typical representative of the world historic cities. Therefore, some environmental problems caused by city adaptation with the new 21<sup>st</sup> century-style of urban development would be high-lighted.

In a more critical view, environmental sustainability is established on the following aspects: conserving of the earth’s vitality and diversity; conserving of life support systems; use renewable resources sustainably; minimizing the use of non-renewable resources; minimizing of pollution and damage to the environment and the health of living creatures; and conserving of the cultural and historical environment [2].

### 1.1. Methodology

This research has been conducted established on a qualitative methodology including observations and survey in the case study location (Isfahan-Iran). The resident's questionnaire is the main contribution of this research work in terms of investigating the environment sustainability of squares for people according to their own views.

The questionnaire was undertaken to find out directly from some residents in Isfahan as representative of Iranian people about the main activity and the main function of two selected squares.

As it was not feasible to go to Isfahan, the telephone Questionnaire is the most convenient and reliable mechanism. Although this research intended to be undertaken based on view of people with different profile, with different perspectives and social values, the sampling method used was ‘semi quota sampling’(partly random and partly preconception selection) [3]. In addition, a ‘snow-balling’ technique [4]. was used to find sufficient contacts, which means each participant leads the researcher to some other contacts. For example, if the first one belongs to certain profile and group of Isfahan residents, it is likely that most other participants are related to would be from similar educational and social class.

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