

# TRANSITION FROM PRIVATE GARDENS TO PUBLIC SPACE

## Applying water management methods of Persian gardens to urban areas

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### 1 ABSTRACT

*The urgent need driven by urban development to provide a secure water supply is a challenging task for governments and service suppliers globally (Ahuja, 2016). Governments and professionals are exploring innovative water management approaches, which lead them to study and improve traditional techniques and reconcile these with the changing environments of our rapidly growing cities (Romero et al., 2017). As water scarcity gives rise to growing global socio-ecological impacts, there are lessons to be learned by reviving traditional water management systems in urban spaces (Sharma, et al., 2018). Approaches developed for a specific arid environment, can often translate to successful ideas in other arid locations such as parts of the United States and Australia, as global warming advances. Thus, the main aim of this research is to improve understanding of the role of traditional and local urban and landscape design in rainwater management and re-conceptualise them in the context of contemporary public space in arid and semi-arid cities.*

*Case study analysis has been used in urban and landscape design disciplines to link practice and theory (Francis, 2001; Steiner, 2014). By a combination of scientific and 'grey' literature review and case study analysis, this paper explores and defines strategies to apply water management methods of Persian gardens to urban areas. Two projects have been used to validate the strategies. These case studies were selected based on their particular water management strategies, availability of literature, and climate characteristics.*

*Most of Iran falls into the semi-arid or desert climate zones (Dinpashoh, Fakheri-Fard, Moghaddam, Jahanbakhsh, & Mirnia, 2004). Consequently, Iranians have always applied innovative techniques to realize opportunities for conservation and responsible utilization of water (Abbaspour, Faramarzi, Ghasemi, & Yang, 2009). The Persian garden is one of the most important elements in Iranian agriculture and landscape (Manuel, et al., 2018). In these gardens, implementing various techniques to collect, distribute, and retain water, has led to water use in various forms such as qanats, diverse types of streams and techniques to collect and evaporate water that creates a unique microclimate and provides comfort to occupants (Fekete & Haidari, 2015a; Yannopoulos et al., 2015). Thus, this paper outlines a basis for water management at the urban landscape planning scale, derived from traditional water management in Persian gardens, that could improve water management infrastructure and provide ecological and social benefits for semi-arid region*

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