

عنوان مقاله:

The Essential Roles of Qanats on Yazd Sustainable Development as an Improving the Groundwater Productivity: A Review

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خلاصه مقاله:

Introduction: This research examines the multifaceted aspects of Yazd's Qanats, focusing on their infrastructure, environmental and social impact, cultural significance, historic value, preserving effect, and role in shaping the urban landscape. The essential role of Qanats is shaping the landscape, infrastructure, and cultural and social identity of Yazd City, and it needs preservation and integration into sustainable urban planning. Qanats, an ancient water management system, have played a crucial role in sustaining Yazd, a historic city in Iran. **Materials and Methods:** The study discusses how the intricate network of tunnels and wells provided by Qanats has reliably supplied water to the city for centuries. It highlights their environmental benefits in reducing water loss through evaporation and preventing groundwater depletion. Qanats' cultural and heritage aspects are explored, emphasizing their contribution to Yazd's identity as architectural and engineering marvels. Furthermore, examines their influence on the city's layout and architectural design. Also, addressing the challenges and threats faced by Yazd's Qanats despite their historical and cultural significance. Rapid urbanization, changes in water management practices and diminishing maintenance efforts have endangered these ancient water systems. Recognizing and addressing these challenges is crucial to ensure the sustainability and preservation of Yazd's Qanats for future generations. The methodology employed for this review study is outlined in this part. A comprehensive literature review incorporated academic papers, historical records, and cultural studies. Data about Qanats' infrastructure, environmental impact, social aspects, cultural significance, and historical context in Yazd were collected and analyzed. Site visits to Qanat structures and interviews with local experts and community members provided valuable first-hand insights and perspectives. **Results:** The conclusion drawn from the review study emphasizes the essential roles played by Yazd's Qanats in ensuring the city's sustainability. Preserving and protecting these ancient water systems is crucial due to their significance in water resource management, cultural heritage, and urban planning. The paper concludes by calling for increased awareness, conservation measures, and policy support to ensure Yazd's Qanats' continued existence and functionality, contributing to the city's overall sustainability. **Conclusions:** Raising public awareness about Qanats' ... cultural, historical, and environmental significance is vital for their preser

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Qanats, aquifer, cities' landscape, Urban infrastructure, Cultural significance, Social significance, Urban planning,

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