Multi-Sensory Experiences in the Central Courtyard Houses of the Plateau of Iran: A Study in Adaptive Architecture

Fatemeh Arabkhazaeli
Graduate of Master of Architecture, University of Art, Tehran, Iran

Arezou Monshizade
Assistant Professor, Architecture Department, University of Art, Tehran, Iran

Abstract

Architecture, a fundamental medium for human experience and inhabitation, profoundly shapes our interaction with the environment through multisensory experiences. This study focuses on central courtyards of houses in the Iranian Central Plateau, exploring how natural elements, specifically sunlight, wind, water, and vegetation, are integrated to create enriching multisensory experiences. The research aims to identify adaptive architectural solutions within these courtyards that enhance sensory perceptions. Utilizing a descriptive-analytical approach, informed by phenomenological principles and incorporating library research and site visits, perceptual aspects have been analyzed.

The findings reveal that bioclimatic design principles—particularly solar orientation, wind direction, and water element—significantly enhance multisensory experiences. Optimal solar orientation provides balanced sunlight, leveraging thermal mass and natural lighting; shadow patterns engage touch and sight. Strategic wind and water integration facilitate natural ventilation and passive cooling, activating touch, smell, and hearing. Central courtyards with underground gardens introduce spatial dynamism and visual diversity, showcasing variations in temperature and humidity. This research emphasizes the importance of incorporating sensory dimensions into contemporary architecture while preserving Iran's architectural heritage.

Keywords

Nature, multisensory experience, adaptive architecture, central courtyard, Iranian traditional houses.