

Original Research Article

# Light-based Architecture: An Ontological Investigation of the Iranian House Based on the Dialectic of Inside and Outside\*

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**Abstract** | A house serves as a place where the concept of residence emerges and the architecture of the house echoes the deepest existential needs of man. The exclusive pattern of the central courtyard of the Iranian house is a significant identity document reflecting the way Iranians live and reside. The central courtyard, rather than being an empty space in front of the building masses, is a fundamental element in the organization and existence of the Iranian house in the central plateau of Iran. Scrutinizing the typology of this pattern may mirror the identity components of ancient Iranian civilization. Notwithstanding the significance of this issue, most research has so far investigated the ontological dimensions of the Iranian house, including spatial configuration, technology, sustainability, climate, and cultural characteristics such as privacy, and the archetype of the central courtyard has not been explored from an ontological and historical perspective. The present study aims to investigate the ontological dimensions of the central courtyard in the historical course of its formation and evolution. In doing so, the universal concepts of dwelling and being in the world are explored in the context of the cultural geography of the central plateau of Iran. For this purpose, the analytical-exploratory research method was used. To examine the theories related to the ontology of the central courtyard pattern, the literature was extensively reviewed and expanded in accordance with the findings of the field study of the historical houses of Yazd, specifically the Cham Chaharsofe House and the Lari House. The house is the place where “dwelling” and “being in the world” are being simultaneously experienced. In the Iranian house, such an experience can come to life via two different formal approaches: “introversion” in response to dwelling and “extroversion” in response to the need to be in the world. In developing the central courtyard pattern, the above-mentioned duality has reached unity and forms the dialectic of the inside and outside through the mediation of “light.” Architecture based on light, as a response to the desire for a connection between the inside and outside in the form of Iranian architecture, has a life span of several thousand years. The role of light in the space began with the placement of fire in the heart of ancient fire temples and continued with the slight opening of the roof of the four-arched houses to the sky. Subsequently, the light component took on a more central role with the complete opening of the courtyard in the pure architecture of the four-arched houses and reached its peak in the form of the central courtyard pattern during the Islamic era, when it was tied to ancient and Islamic ideas of the sanctification of light. Therefore, in the manifestation and role of light in the construction of space in the Iranian way of life, the fire temple, the mosque, and the house are one.

**Keywords** | House, Central Courtyard, Four-Dimensional, Place, Ontology.

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**Introduction** | A house is not just a shelter or an object serving to accommodate the physical needs and primary concerns of humans. It represents a primary reason for the formation and understanding of human identity. In all narratives tied to human life, this term refers to human “dwelling” presenting a complex event. In other words, “only if we can dwell, then can we build” (Heidegger, 1977, 338). Heidegger challenges the fundamental task of architecture highlighting that it is simply meant not to calm the “craving” of constructing houses, but to establish dwellings and address the deepest existential needs of humans. The true construction of a house means helping us to find our place in the world, to find meaning in our lives, and to live (Sirowy, 2010, 115). Thus, a house is the most significant man-made space which apart from its functional role, incorporates meanings and symbols associated with human existence. This issue highlights the importance of examining the unique existence of the house with regard to its ontological characteristics.

Phenomenological (ontological) analysis in architecture commences with the study of fundamental principles of the residential and lived space, as well as the relationship between form and place identity. In the process of analyzing architectural objects, we cannot simply rely on the formal or spatial composition, which is often based on functional and programmatic needs, we need to consider the arousal of users’ emotions through the relationships of building/place, inside/outside, light/shadow, space for staying/passing, or warm/inhospitable environment. (De Campos, 2017). Such phenomenological dimensions have led to the formation of specific and unique patterns of residential architecture around the world, and the pattern of the central courtyard in Iranian houses is one of these examples.

The history of the central courtyard is as long as human settlement.<sup>1</sup> Compound, enclosed houses, which emerged in the earliest agricultural societies around 2000–1500 BC in the Indus Valley, were designed based on the central courtyard pattern. A genealogical study of the typology of this pattern highlights the cultural need for privacy while separating it from the public realm (Sthapak & Bandyopadhyay, 2014). Reynolds (2002) refers to central courtyards as “... special places that are open to the sky on the outside and almost inside, and are surrounded by rooms.” Examining the history of the formation and evolution of the Iranian central courtyard pattern may reflect the identity components of this ancient civilization.

The central courtyard has not been a neutral factor, consistently played a coordinating and organizing role in the Iranian house and therefore has been an inseparable element in the spatial hierarchy of traditional houses in the central plateau of Iran, including Yazd (Amiriparyan & Kiani, 2016). Previous studies have identified

reasons such as spatial configuration (Hajiyan et al., 2019), structural performance, and construction technology (Mahdavinejad et al., 2013; Redaei et al., 2022), providing privacy (Hosseini Raviz et al., 2015), sustainability, climate, and thermal comfort (Ebadi et al., 2014) as the reasons for the emergence of the central courtyard pattern, but in none of the studies has the central courtyard archetype has been explored from an ontological and historical perspective. Based on library data on the central courtyard pattern and exploratory findings obtained from the study of two historical examples in Yazd province, the present study seeks to answer this question: In an ontological reading, what has been the evolution of the central courtyard house pattern in the central plateau of Iran and what characteristics does it reflect regarding the existence and essence of the Iranian house?

## Research Background

“House” has always served as a key element in Iranian architecture reflecting identity and meaning. Drawing upon a phenomenological approach, Eslampour et al. (2022) examined the physical components of courtyard houses in Hamadan and found that such components contribute to creating meaning and memory and are deeply connected with the cultural identity and sense of belonging of the residents. In a similar vein, Mansouri (2024) also examined the concept of “shelter” in Persian and indicated how the architecture of traditional Iranian houses, including the central courtyard and porch, manifest the connection between man, nature, and the sky; a concept that has led to a deeper understanding of shelter as a sacred and safe place. Moreover, some studies have emphasized the reinterpretation of the concept of home in the Qur’an (Kabirisamani et al., 2017), asserting that the home, as a place of residence and tranquility, should reflect light and spirituality. This perspective aligns closely with traditional Iranian architecture, which emphasizes the presence of natural elements such as light, water, and vegetation in the central courtyard space (Daeipour, 2014). Additionally, an investigation into the sustainability of Iranian architectural elements during the Islamic era (Nazif, 2013) reveals that the central courtyard pattern, as an organizing space, has played a fundamental role in spatial coherence and in expressing the cultural and spiritual identity of Iranian homes. Therefore, all these studies highlight the significance of the home as a manifestation of identity, meaning, and the human connection to the environment and the transcendent world. Examining the landscape component of Iranian house architecture shows that the central courtyard and the porch have always played a crucial role in organizing space and creating a connection between humans, nature, and the surrounding environment. Nazif (ibid.) presented the

courtyard as an organizing element from the Parthian era that evolved during the Islamic period and as a central space with a specific geometry and the symbolic meaning of the Garden of Eden influenced the formation of spatial coherence and connection with nature. Ahmadi (2005) also introduced the central courtyard as an archetypal component that creates a calm space compatible with the climatic conditions of the region by linking natural elements such as light, water, wind, and plants. Similarly, Zakizadeh & Zakizadeh (2015) emphasized the role of the central courtyard as a unifying component in Iranian vernacular architecture, which, from a holistic perspective of Iranian architecture, has been a factor in spatial coherence and sustainability. Gholami & Kavian (2017) investigated the Chahartaghi pattern as one of the oldest forms of Iranian residential architecture, which become one of the basic structures in Iranian house architecture by creating a favorable microclimate and simple geometry. Emami Meybodi (2022) displayed how the Chahartaghi pattern, as one of the important spatial components, can contribute to coherence and dynamism in residential architecture by examining the evolution of the courtyard in Yazd houses.

Despite burgeoning studies on the concept of home in Iranian architecture and the stress put on its physical and semantic component, less exists on the relationship between the indoor and outdoor spaces in Iranian houses based on an ontological approach, and the gap that this research attempts to address is the connection between physical and semantic dimensions and how they affect the formation of a sense of belonging and spatial identity. By addressing this gap, this research hopes to clarify the semantic relationship between indoor and outdoor and show its impact on the identity and lives of residents from an ontological and holistic perspective.

## Research Foundations

### • Concepts associated with the ontological dimensions of the house

Addressing the question about the ontological dimensions of the Iranian house requires a description of some key concepts such as residence, the dialectic of indoor and outdoor in architecture, and the role of light in the formation of the house as a meaningful phenomenon. Accordingly, the aforementioned variables are examined as follows:

#### - Residence

Heidegger defines dwelling as “a process in which a person transforms the “place of being” into a home and establishes harmony with the four main sources of thought, namely God, self, sky, and earth” (Yar Ahmadi, 1999, 223). In other words, “dwelling is not putting up a roof as a canopy or trampling a few square meters of land” (Nörberg-Schulz, 2008, 9). In fact, “it is the creation of a meaningful connection between

man and a given environment.” (Ibid., 17). In this approach, “the house has a function that it must fulfill with the earth and the sky.” (ibid., 15). Accordingly, dwelling expresses a meaningful connection established between man and the given environment and refers to the formation of identity and a sense of belonging to the place. This concept has been accompanied by diverse architectural responses in different thoughts, cultures, and times. Using the different typologies of houses in different cultures shows approaching the problem differently in response to a single need.

#### - Introversion

Introversion refers to an architectural feature that stems from the phenomenological concept proposed by Dasein or “being in the world”. The degree of openness of any place to the world shows how it is associated with the world. The basis of place is an internal creation that is separate from the outside. Openness, as the connection between place and world, is expressed through physical and semantic boundaries (Mousavi, et al., 2019, 37). Architecture can be considered the regulation of the relationship between inside and outside and is influenced by its two-faceted nature. The quality of man-made space, based on the transition from inside to outside, takes on an interactive or intermediate characteristic (Mahboobi et al., 2018). Accordingly, introversion, as a fundamental feature in Iranian architecture, is considered a relative matter and does not end with the alley as the outside and the courtyard as the inside (Ahmadi & Habib, 2020). If the bond between the room and the courtyard is one of the manifestations of the outside world in the heart of the house, this is the dialectic of inside and outside in the Iranian house.

#### - Light

In the phenomenological examination of the house as a space for the formation of human identity, the duality of light and shadow plays a key role (De Campos, 2017). Light is the most important component of space. In the absence of light, an architectural building cannot be seen. However, when light itself becomes the subject of architecture, it can become the central part of the space, a focal point, and a symbol (Abdelhamid, 2020). In traditional Iranian architecture, natural light has been considered in terms of providing illumination, visual quality, and beauty of the space (Tahbaz et al., 2016). The simultaneous functional and semantic role of light in architecture has guiding dimensions, and light can be considered a factor in the manifestation of values, meanings, and concepts in the architectural structure (Alborzi et al., 2017). Especially in introverted houses, the architectural form is shaped to reflect more light in the interior space (Rahravi et al., 2019). Accordingly, light is considered a fundamental component in understanding the phenomenological dimensions of Iranian architecture, including introverted houses.

### • Components of the central courtyard archetype

Unlike space, which is seen as an open abstract expanse, is a part of space that has meaning and value through its connection with human activities (Mayhew & Penny, 1992; Harrison & Dourish, 1996). From an epistemological perspective, the place is the location of values and humanized space (Tuan, 1977, 50-102). The central courtyard pattern in the Iranian house, beyond the placement of building masses around the empty space of the courtyard, reflects the harmony of multifaceted components and elements in the form of an integrated whole that has been formed and evolved under the influence of specific social, geographical and cultural contexts. However, understanding the aforementioned components is necessary to shed light on the ontological process of the formation of the house pattern. The components that make up the central courtyard pattern of the Iranian house in the central plateau of Iran can be examined under the two concepts of space and place;

#### • Space-making components (architectural elements)

**Iwan:** Iwan can be considered a spatial filter and a junction between open and closed spaces (Shirin Jani et al., 2015). The inherent feature of the iwan is its connection to the courtyard. Iwans are open to a refreshing view, with water and green space as its main elements. Considering the effect that the iwan has on the building facade, it has an aesthetic and psychological impact on the observer (Rezaeinia, 2022).  
**Roof:** The roof of the house can enhance the environmental and climatic conditions inside the house and provide a place for the residents to live under the blue sky (Sadeghipay, 2012). Roofs in Iranian cities and houses have served different functions and landscape roles and have been one of the most important factors in shaping the spatiality of houses and the identity of cities (Hoseinzadeh et al., 2021).

**Hashti:** Hashti in Iranian architecture stands for a multi-functional space by separating the entrance space from the hallway and courtyard space, while connecting the two serving as an independent space with platforms for sitting and social interaction (Larijani & Salehi, 2015).

**Courtyard walls:** The facade of central courtyards in dry and hot regions prevents the penetration of heat and excessive heat from the environment. The taller facade of the native central courtyard of Iran is located on the northern and southern sides. This feature prevents the direct absorption of solar radiation by taller facades (Piriyaei et al., 2022).

#### • Place-making components (environmental elements)

**Light:** The central courtyard is a space that protects the house from harmful rays while using them in winter. Sunlight on the surface of the water fountain in the central courtyard contributes to its visual beauty softening the environment and controlling the humidity of the air (Naghizadeh et al., 2012). Considering the effect of the sun's rotation on different fronts, each front has been for a season and hour; for example, a

sun-facing front is used in winter while the shaded-side front is used in the summer (Zakizadeh & Zakizadeh, 2015).

**Water:** In historical Iranian houses, the house is inseparable from nature, and the courtyard makes it a suitable place for human connection with natural components, including water. In traditional architectural culture, the concept of "life in the courtyard" is proposed, and this life is realized through the presence of water (Soheili & GolBaten Monfared, 2019). Ponds are built to elevate the water level to absorb sunlight, raise evaporation and more humidity, and create convection breezes to provide passive cooling and natural ventilation for each house (Piriyaei et al., 2022).

**Plants:** Plants enrich the central life pattern promoting the experience of the surrounding world in the heart of the house. Plants in the central courtyard of houses have the benefits of the regulation of environmental conditions by reducing temperature and solar radiation and controlling wind (Haeri Mazandarani, 2009, 116). In doing so, they improve the quality of life through natural elements and plants, and aesthetic and symbolic dimensions (Afshari Basir et al., 2017).

Apart from these components, other complementary factors that contribute to enriching the Iranian house archetype, include decorations at the functional, structural, semantic, cultural, and aesthetic levels (Piriyaei et al., 2022). Windows also provides light, and visibility while connecting the indoors and outdoors (Parsa, 2011), and windbreaks affect the climate by modulating the temperature and ventilation of the interior space of buildings (Zaker et al., 2012).

#### • The evolution of the Iranian house archetype from a Chaharsofe house to a central courtyard

The central courtyard serves as a vital component in the architectural typology of historical Iranian cities, especially the city of Yazd. The courtyard does not only organize space but also embodies cultural and philosophical principles rooted in Iranian identity. On a macro scale, the central courtyard serves as a vital component in urban planning that fosters social interaction and cohesion. In cities like Yazd, where the harsh desert climate poses unique challenges, the courtyard provides a respite from the outside environment. Its design facilitates natural ventilation and effectively creates a microclimate that enhances the livability of the space. This architectural response highlights a broader understanding of human adaptation to environmental conditions and demonstrates how cultural practices are intertwined with architectural solutions.

#### - Fire temple and chahartaghi: spatial arrangement of light and illumination in the oldest Iranian archetypal architecture

Light and the sun were the symbols in ancient Iranian religions representing mercy and blessing, and in Zoroastrianism, the duality of light and darkness had a special place that linked light with the concepts of goodness

and blessing. Such beliefs in the Islamic period with the interpretation of God in the Quran as the light in the heavens and on the earth (Mansouri, 2024). In phenomenological concepts, natural light stands for the divine presence in space (Eslampour et al., 2022). Scrutinizing maps show that the enclosed space as a central and symbolic space can be found in the oldest Iranian buildings, including fire temples (Hosseini Raviz et al., 2015, 13) (Fig. 1). In the design of the Chahartaghi, the sacred fire is burning in the center and under the dome, and the openings of this structure allow it to be seen from four sides. As fire in Zoroastrianism serves as a source of light, this central architecture seemed to be a spiritual focus for worship, which was also considered a kind of qibla of Zoroastrianism and drew attention to the center (Joudaki Azizi et al., 2015). In the architecture of Iranian houses with a Chaharsofe and a Chalipa structure, central courtyards or dome houses were formed in the center to connect the inside with the outside, and we see the oldest such combination in the temples of Anahita and fire temples (Ahmadi, 2005; Gholami & Kaviani, 2017). Based on this evidence, light, as a manifestation of God's presence in ancient Iranian beliefs, has contributed to the formation of the fire temple and Chahartaghi.

**- The Chaharsofe pattern: crystalization of the concept of dwelling in a body connected to the sky**

The houses over the historical periods including the Median, Achaemenid, Parthian, and Sassanid dynasties reflect the first philosophical developments in the definition of shelter and home. The spaces such as the central courtyard

and the iwan indicate the shelter has been conceptualized differently. The opening of the heart of the enclosed house towards the sky which forms the spaces in the house, indicates a special connection with nature and the sky; a special connection with the high and lofty world that defines shelter not separated from nature but is in unity with it and aligned with the concept of Iranian architecture (Mansouri, 2024). In the four-sided houses, the courtyard was located in the center of the house and placed the residents in a space encircled from the surroundings, but open to the sky. This type of architecture, which was close to its neighbors and open to the sky, provided a platform for communication based on the concepts of existence and spirituality (Mansouri, 2024; Eslampour et al., 2022). Central courtyards with square or rectangular structures whose sides are perpendicular to the cardinal directions of the sun create a symbolic space, with water in its center and the upper space being open to the sky, that connects the two basic components of life, namely light and water, as symbols of the gods Mehr and Anahita at their center (Ahmadi, 2005). On this basis, the Chaharsofe house model was formed, inspired by the light-centered architecture of the Chahartaghi four-arched houses, with the center of the space open to the sky and the indoor-outdoor dialectic (Fig. 2).

**- Central courtyard; the flourishing of light-based architecture and formal dialectics inside and out**

In Iranian architecture, a house with no yard, trees, and greenery is meaningless (Piriyaei, 2022, 203). The central yard, as the central core of the house, is a space

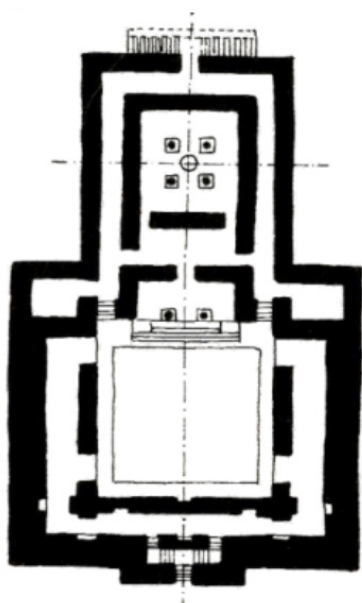
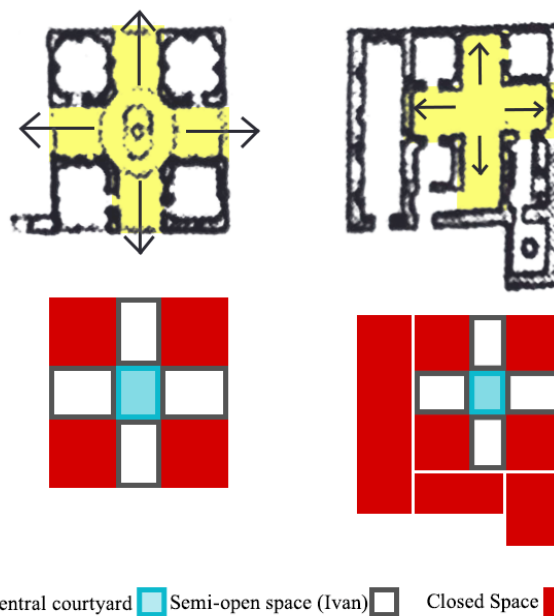


Fig. 1. Plan of the Achaemenid fire temple located in Susa with a four-part pattern and a Chalipa or nine-part spatial composition with ChaharSofe. Source: Godard, 2009, 188 cited in Mohseni & Bastanfard, 2019.



Central courtyard ■ Semi-open space (Ivan)  Closed Space ■

Fig. 2. The pattern and plan of the Chaharsofe house in the village of Cham. Source: Afshari Basir et al., 2023.

with a geometric order, independent, axial, and central (Qizilbash & Abul-Zia, 1985, 99), a unifying component in organizing different spaces (Mansouri, 2024), introverted (Tahbaz et al., 2016, 20), and open to the sky (Ahmadi, 2005). The architecture of the central yard describes the emergence of space around the yard that embodies meaning beautifies the space and transforms it into a place to live. In this narrative, the central courtyard gives soul and breathes life into the space as a meaningful component (Mansouri, 2024), also creates a “natural space” and a suitable breathing space for introverted houses, and as an organizing component also facilitates communication between the interior spaces of the house (Ahmadi, 2005).

In flourishing and promoting the central courtyard pattern, the addition of architectural details and new elements, such as the porch, hallway, roof, decorations, etc., also played a fundamental role. In discussing historical typology, Pirnia highlighted the continuity of patterns of organizing the space of the house: “The antiquity of the Chahartagh dates back to before Islam, this type of house was also expanded in the form of a pavilion.... As the dimensions of the Chaharsofe house increased, its spaces were unable to cover the central space, and this space became a courtyard. In the new design, the courtyard was located on two sides of the courtyard, and the rooms were located on the other two sides” (Piriyaee, 2022, 166). In the “processed Chahartaghi” structure, where the courtyard is surrounded by porches, halls, courtyards, and chambers, spaces generally assume different functions based on physical and temporal conditions (Ahmadi, 2005), and light, as a symbol of divine presence, a meaningful element in space and a link between man and nature and the higher world, finds meaning through the iwan and courtyard. The existence of a courtyard becomes a space full of peace and life due to the presence of nature and light and the dialectic of inside and

outside (Hamzenejad & Dashti, 2016). This trend can be seen in the hierarchy of entrances of more developed Iranian houses. The Iranian house needs a spatial hierarchy to ensure its privacy and tranquility (Tabibian et al., 2012) to pass from the public to the private sphere. This transition takes place sequentially from the market to the alley, the entrance, hashti, the corridor, and finally the courtyard, which is the main core of the house (Qezelbash, & Abu al-Zia, 1985, 97), and the closed spaces are located around the central courtyard and have no connection with the outside. However, in the existence of the house, the central courtyard does not equal introversion (Memarian, 1994, 55); rather, the openness of the center of the house, in addition to providing light and air for the surrounding spaces, is a tool for connecting the interior space to the exterior while being introverted (Fig. 3).

#### • Case study

The central courtyard, as an inseparable element at macro, medium, and micro scales, has played a fundamental and structural role in historical cities of Iran, including Yazd, and as a recurring element, it is considered an essential part of a comprehensive urban development system (Amiriparyan & Kiani, 2016, 910) (Fig. 4). The theoretical findings of this research are elaborated and expanded based on field findings from an exploratory trip to Yazd province. On this basis, a Chaharsofe house near Cham village and the Lari house in Yazd city are briefly examined as perfect and awe-inspiring examples of the central courtyard pattern. Chaharsofe in Cham village is not an exception to the rule of introversion and importance to the center and complies with Chaharsofe form, and its Chalipa form is completed with four rooms at the four corners, having a square plan (Alipour, 2006, 92). This pattern has been repeated over time in other houses, such as the Lari house, and the importance of the connection between the inside and the outside is still maintained. In this house, the iwans and main spaces are

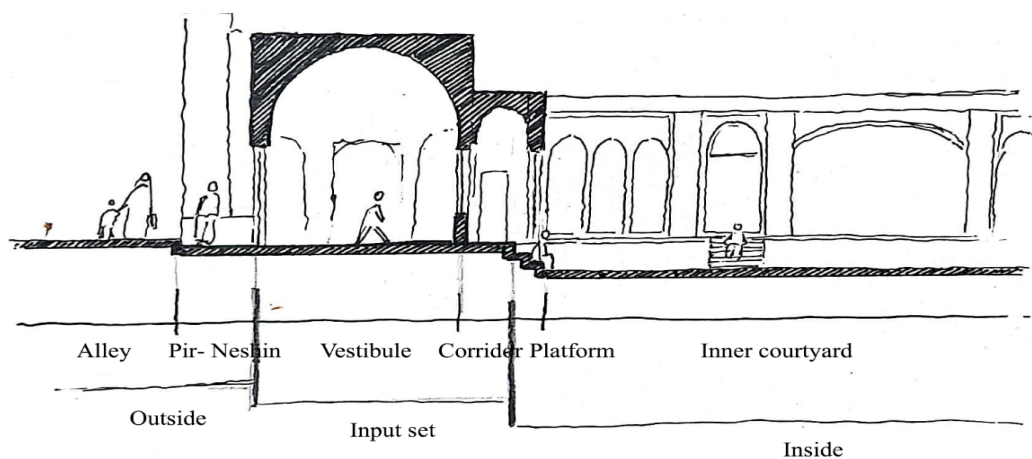


Fig. 3. Hierarchy of entry into a traditional Iranian home. Source: Khalili et al., 2014.

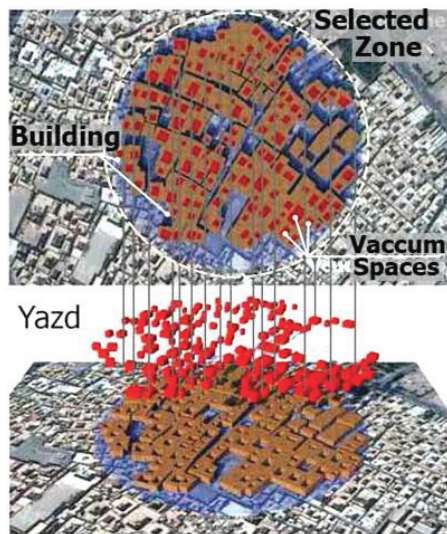


Fig. 4. The courtyard as an organizing empty space in the historical context and urban landscape of Yazd. Source: Amiriparyan & Kiani, 2016, 910.

located around the courtyard, and the courtyard is the point of connection between the indoor spaces of the house and the outdoors and the sky. For example, due to the height of the iwan of the main courtyard and its wide opening, it seems that the courtyard has expanded into it, and a strong connection has been established between the two (Rasouli et al., 2004, 169) (Fig. 5).

Nazim al-Atiba defines a house as “a place where a person resides,” and this definition is different from other equivalents such as shelter, home, sokunat (dwelling), and the word “sokunat” comes from the root “sokn” and means peace

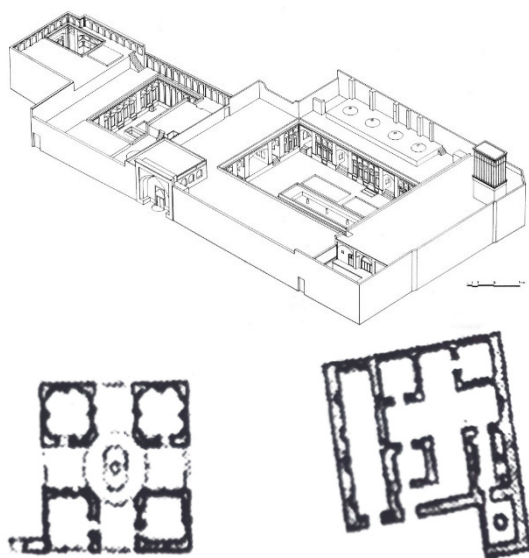


Fig. 5. Plan of the Chaharsofe house in Cham village and the Lari house in Yazd city. Source: Alipour, 2006; Rasouli et al., 2004.

and comfort, beyond protecting a person from the outside world. According to the verse, “He is the One who sent down tranquility into the hearts of the believers so that they may increase in faith with their faith,” tranquility and peace are a state granted by God and are the precursor to the faith in the hearts of believers. Also, “Sakina in Sufi terminology is equivalent to what appears in the heart when the unseen descends, and it is the light that brings relief and peace to the heart, and Sakina itself is one of the principles of the certain truth” (url1). As an infinitive it indicates a place, it includes the metaphysical meaning of the house, which is particularly manifested in the ontological analysis of the introspective and light-based form of the Iranian house.

Phenomenology is a return to the nature of phenomena, away from abstract and abstract concepts, facing the reality of phenomena in the most sincere way possible (Partovi, 2008). From an ontological perspective, a house is a type of “lived” space in which humans experience the meaningful event of “dwelling”. In the field of architecture, this issue is the prelude to the formation of the form of the house as an internal space in contrast to the external space surrounding it. On this basis, the house has been considered a priority interior and a source of peace and tranquility in Iranian culture. Just as in popular culture, a lamp facing the house is considered to be a forbidden mosque, or introversion is also considered a valuable personal trait;

“The universe is not outside of you. Look inside yourself; everything that you want, you already are.”

The introverted form contributes to the quality and meaning of residence and peace, and finds a more complete meaning in the historical pattern of Chaharsofe houses and the central courtyard within the framework of “inside-outside dialectic”. Such a dialectic is sometimes simply manifested in the chaharsofe house of the Cham village by separating from the outside through a short vestibule and reconnecting with it through the small courtyard located in the center of the vestibules opening to the sky, and sometimes in the more opulent example of the Lari house, it is formed by passing through the vestibule and vestibule and the play of light and darkness until reaching the brightness of a long courtyard surrounded by countless rooms. The content of the words in the concise language of the Chaharsofe house of Cham and the eloquent language of the Lari house are the same; The re-creation of the outside world in the form of a powerful geometry of the courtyard life that exists inside the house, which matures through the harmony of space-making and place-making components (environment and architecture), and while separating from the world, realizes Dasein, meaning “being in the world.” It is on this basis that Hafez, with his distinguished ontological perspective, sees the concepts of home, light, and God as coincident in Iranian culture.

In the ruins of the Magi, I see the light of God. What a wonder! What a light, and from where I see it!

Do not flaunt, the Chief of the Pilgrims,

You see a house, but I see the House of God.

According to Fig. 6, The dialectic of inside and outside in the central courtyard of the Iranian house is specified via “light”. Although a brief look at the form of the central courtyard reflects the “lust for connection with the outside”, it shows “introversion” needs to be maintained. However, it is elevated in direct connection with the sky and light, the element which is in a semantic affinity with serenity and peace in philosophical interpretations. Apart from the universality of the sanctity of light, it is especially valuable in Iranian culture; the sanctity of light and its worship through the gods Mehr and Mithra and the veneration of fire as the representative of God in the Zoroastrian religion during the ancient Iranian era is linked to the religious beliefs of the Islamic era, a clear manifestation of which can be found in the verse “Allah is the light of the heavens and the earth”. The extent to which light has also received importance in popular culture and its footprint can be recognized in the use of everyday expressions such as the light of the eye, you have enlightened, and so on. Due to the key role of light in the visual perception of the world, Iranian architects have realized the symbolic dimensions of light as a direct representation of the sun, sky, heaven, and the ever-present God and have used it at different scales and periods, from the structuring of fire temples around light to details such as Orosi in residential buildings (Ahani, 2011, 25). Hence, the role of light in the formation of the central courtyard pattern of Iranian houses is simultaneously functional and symbolic. The functional dimensions of light architecture refer to shading the building on the southern facade in summer to absorb direct sunlight in the northern iwans but a more sensory and tangible feeling can be experienced by having the light in the central

courtyard after going through a dark corridor. The nature of the central courtyard house can be perceived using a phenomenological approach at this point. The reason is that understanding a phenomenon in its entirety lies at the point where the rational (ontological) approach and the intuitive (empiricist) approach are employed for its identification.

The evolution of the central courtyard pattern indicates that despite the grandiosity of the central courtyard patterns which have been promoted by the technical advances of architects and the wealth of homeowners, the form of the central courtyard pattern has become more complex; however, the more complex use of environmental and architectural components, including porches, roofs, vestibules, walls, light, water, plants, decorations, windows, and windbreaks, etc., due to the mutual relationship of the components with each other in the form of a single and integrated whole, has not weakened the basic concept of the dialectic of the inside and outside, and such components have strengthened the existence of the house as a context for the spatialization of light. Therefore, like other archetypes, the continuity of cultural and geographical components over time has resulted in the stability and maturity of the traditional house pattern in the central plateau of Iran. The evolution of the courtyard pattern as a collective space and microclimate is a reflection of the outside world and a constructive coexistence with it, which is manifested in the smallest details, such as the reflection of the image of the environment in the pond and the creation of virtual vastness and infinity.

## Research Method

The present study employed a qualitative approach and descriptive-analytical method and used library data and field studies. For this purpose, reliable references on the central courtyard pattern and traditional Iranian architecture were reviewed and the theoretical foundations of the research



Fig. 6. The dialectic of inside and outside in light-based architecture in the Lari House and the Cham Chaharsofe House. Source: Author's archive.

were formed. In the field study section, based on inclusion criteria such as age, and preservation of physical features representative of local architecture, two historical examples of houses with central courtyards in Yazd province were selected. The analysis of these examples with an ontological approach examines the evolutionary process of the central courtyard pattern and its characteristics reflecting the essence and meaning of the Iranian house. The findings of this study can help revive identity elements and create a deeper connection between contemporary architecture and the cultural values of ancient Iranian architecture.

## Discussion

The central courtyard serves as a vital element in the architectural typology of historical Iranian cities, especially the city of Yazd. The courtyard does organize space but also represents cultural and philosophical principles rooted in Iranian identity. On a macro scale, the central courtyard serves as a vital component in urban planning that fosters social interaction and cohesion. In cities like Yazd, where the harsh desert climate poses unique challenges, the courtyard provides a break from the outside environment. Its design facilitates natural ventilation and effectively creates a microclimate that enhances the livability of the space. This architectural response highlights a broader understanding of human adaptation to environmental conditions and demonstrates how cultural practices are intertwined with architectural solutions.

On the intermediary scale, the study of individual houses, such as the Chahar Sofeh House in Cham and the Lari House, highlights the principles of introspective architecture and the importance of privacy in Iranian culture. The array of rooms around a courtyard not only underscores the privacy of the family but also symbolizes the separation of the internal sphere from the outside world. This spatial organization indicates a deeper reflection on the nature of habitation, where the house serves as a refuge from the outside world and, simultaneously with the courtyard's connection to the sky and the presence of natural elements such as water and trees, the courtyard acts as a threshold for experiencing the outside world.

On a micro-scale, details such as the contrast of light and shadow add depth to the tactile experience of space. The dynamic quality of light not only illuminates the physical space but also enhances the spiritual dimensions of the home as a place of residence. The historical reverence for light in Iranian culture is supported by its association with divinity and purity which transform the courtyard into a place of meditation and reflection. The light is a metaphor for the

enlightenment of the soul, establishing a profound connection between the physical and the metaphysical aspects of life.

The ontological exploration of the courtyard as a “lived” space highlights the dialectic of inside and outside. This relationship does not simply represent a part from a whole, but a complex and interactive boundary, in which the courtyard acts as a platform for the ongoing experiences of the inhabitants. For instance, observing the sky from the courtyard provides moments of contemplation and connection with the world as a manifestation of God, reinforcing the idea that the house is not isolated, but part of a larger universe. This philosophical perspective presents the courtyard as a space in which existential questions about human identity can be addressed.

## Conclusion

The house is a place for human peace and “dwelling” and the realization of the experience of “being in the world.” The issue seeks two different responses in the form and meaning of Iranian architecture; “introversion” is a response to dwelling, sheltering from the world, and finding human peace, while “extroversion” is a response to the human need to be in the world encountering it. In the development of the central courtyard pattern of the Iranian house, the aforementioned duality reaches unity and forms the dialectic of inside and outside and creates a multifaceted dialogue between humans and the surrounding world in which “light” plays a pivotal role. Light, as the main essence of the house, represents and reminds us of God. Light-based architecture, as a response to the longing for connection between inside and outside in the structure of Iranian architecture, has a lifespan of several thousand years and in its evolution, from the fire temple and Chahartaghi to the Chaharsofe pattern and then the central courtyard, reaches its peak. The role of light in the construction and processing of space began with the placement of fire in the heart of fire temples and continued with the slight opening of the Chahartaghi roofs towards the sky. Then, the light component played a more central role in the complete opening of the courtyard in the pure architecture of the first examples of the Chaharsofe house pattern, and during the Islamic era, by being tied to ancient and Islamic ideas of the sanctification of light, it reached its peak in the form of the central courtyard pattern and manifested the quality of infinity in the connection of man with the world and the inside with the outside. Thus, in the manifestation and role of light in the construction of space in the journey and behavior of Iranians, the fire temple, the mosque, and the house are one (Fig. 7).

## Endnotes

1. Some evidence suggests that there were houses with courtyards in Iran about 8,000 years ago (Hosseini Raviz et al., 2015).

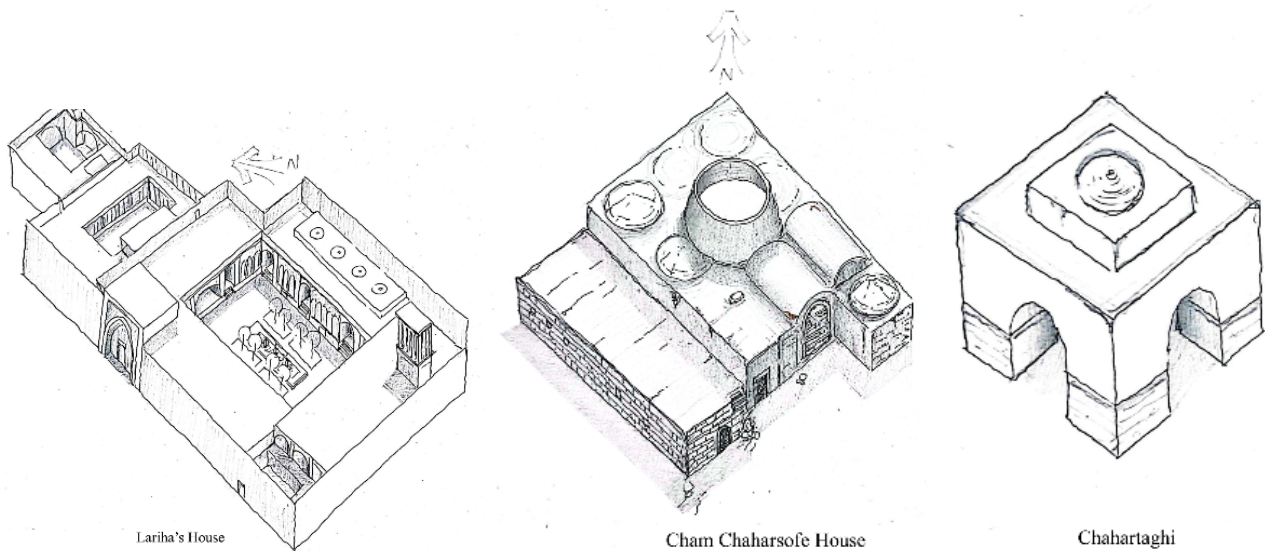


Fig. 7. The evolutionary process of the central courtyard archetype in Iranian architecture. Source: Authors.

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