

Transformations in Pahlavi II House Architecture in Sanandaj (Case Study: Comparing Modern Adaptations and Traditional Spaces)

¹Khaled Azizzadeh, ²Salahedin Molanai, ³Lida Balilan

¹Ph.D. Candidate, Department of Architecture, Faculty of Arts and Architecture, Tabriz Branch, Islamic Azad University, Tabriz, Iran.

²Associate Professor, Department of Architecture, Faculty of Arts and Architecture, University of Kurdistan, Sanandaj, Iran.

³Associate Professor, Department of Architecture, Faculty of Arts and Architecture, Tabriz Branch, Islamic Azad University, Tabriz, Iran.

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ABSTRACT: This article presents a case study exploring the intersection of tradition and innovation in Pahlavi II architecture, focusing on buildings from the Pahlavi II period in Sanandaj. The research investigates incorporating traditional spaces and introducing innovative design approaches during this architectural period. By analyzing the added and removed spaces compared to the traditional period, the study seeks to identify the key factors influencing the transformation of architectural features. The research methodology involves site visits, interviews with architectural experts and residents, and archival research to gather data on the architectural design choices and motivations.

The findings reveal a harmonious integration of traditional and innovative spaces in Pahlavi II buildings in Sanandaj. The analysis of added and removed spaces sheds light on the dynamic nature of architectural evolution, providing insights into the influence of cultural and historical factors on design decisions. The study highlights the importance of preserving cultural heritage while embracing innovation and modernity in architectural design. It also emphasizes the need for a holistic approach to design that considers social, cultural, and environmental factors.

Overall, this study contributes to a deeper understanding of the intricate relationship between tradition and innovation in Pahlavi II architecture and its impact on built environments. The research provides valuable insights for architects, designers, and policymakers seeking to create sustainable and culturally sensitive built environments.

Keywords: *Pahlavi II architecture, tradition, innovation, Sanandaj, modernism*

INTRODUCTION

The architectural heritage of the Pahlavi II period in Iran represents a fascinating intersection of tradition and innovation. Pioneered during the reign of the Pahlavi dynasty, this architectural style aimed to modernize Persian design principles while maintaining a connection to the country's rich cultural heritage.

The Significance of Pahlavi II Architecture

Pahlavi II architecture holds significant importance in the architectural history of Iran. Built during the reign of Mohammad Reza Shah Pahlavi, this architectural style reflects the modernization and Western influence that characterized the era (Beigzadeh et al., 2022). The architectural designs of the Pahlavi II period showcased a departure from traditional Iranian styles,

incorporating spaces of modernism and embracing new materials and construction techniques. This architectural movement not only transformed the physical landscape of Iran but also symbolized the broader social and cultural changes occurring in the country during that time. The Pahlavi II Architecture stands as a testament to the aspirations of a modernizing nation, leaving a lasting impact on the architectural identity of Iran.

Embracing Tradition

Revitalizing Persian Architectural Spaces: Pahlavi II Architecture brilliantly incorporated traditional Persian architectural spaces, drawing inspiration from the country's rich history (Arani, 2018). It skillfully integrated iconic features such as arches, domes, and intricate geometric patterns, adapting them to suit the evolving needs of contemporary society.

*Corresponding Author Email: s.molanai@uok.ac.ir ORCID: 0000-0002-9988-1930

This fusion of traditional design spaces with modern functions created a unique architectural style that revived and celebrated Iran's rich historical architectural heritage. By preserving and reimagining these distinctive Persian spaces, Pahlavi II Architecture paid homage to the past and fostered a strong sense of cultural identity and pride among the Iranian people. Including traditional architectural motifs in modern structures served as a visual representation of the country's connection to its roots and a reminder of its architectural legacy. Pahlavi II's architecture is a remarkable testament to Persian architectural traditions' enduring beauty and relevance.

Embracing Innovation

Pushing the Boundaries of Design: Simultaneously, Pahlavi II Architecture pushed the boundaries of design, embracing innovative concepts and materials (Yousefzadeh, 2016). Architects of the era embarked on experimentation, exploring new construction techniques and incorporating modern materials like steel and glass into their structures. This bold and progressive approach symbolized the spirit of innovation and allowed for greater flexibility in architectural expression and functionality. It departed from traditional construction methods and opened up new possibilities for architects to create awe-inspiring spaces. The introduction of steel and glass elements in Pahlavi II Architecture emphasized sleek and contemporary aesthetics and facilitated the infusion of natural light, creating dynamic and visually striking interiors. Adopting these innovative ideas transformed the architectural landscape of Iran, defining a new era of design that fused tradition with modernity.

Contemporary Influence and Legacy

The impact of Pahlavi II's Architecture resonates in contemporary architectural practices worldwide. Its revolutionary approach of blending tradition with innovation inspires architects today (Ehsan, 2021), (Khodabakhshi et al., 2019). The harmonious integration of traditional Persian architectural spaces with modern design concepts is exemplified in notable buildings and structures influenced by Pahlavi II Architecture. One such iconic structure is the Azadi Tower in Tehran, which showcases both contemporary aesthetics and historical references, alluding to the architectural legacy of Pahlavi II. Another remarkable example is the Shahyad Monument, a symbol of pride and national identity, which reflects the elegance and sophistication of Pahlavi II Architecture. The enduring significance of Pahlavi II's Architecture lies in its ability to transcend time and place, leaving a lasting impression on the contemporary architectural landscape.

Sanandaj, the capital of the Kurdistan province in Iran, is renowned for its remarkable collection of buildings from the Pahlavi II period. Studying these buildings can provide valuable insights into the dynamic relationship between tradition and innovation within the context of Pahlavi II architecture. Traditionally, Persian architecture is characterized by ornate tilework, domes, and intricate geometric patterns in mosques, palaces, and gardens. However, during the Pahlavi II period, Iran experienced significant sociopolitical changes that led to architectural shifts. This period witnessed the influence of Western modernism and the government's emphasis on modernization and industrialization, impacting architectural design and construction techniques. To comprehensively explore the intersection of tradition

and innovation in Pahlavi II architecture, conducting a case study of buildings from the Pahlavi II period in Sanandaj is crucial. Analyzing the added and removed spaces vis-à-vis the traditional period can offer insights into the evolution of architectural practices and the transformation of the built environment.

This research has several limitations and knowledge gaps that should be acknowledged. Firstly, the scope of the study is limited to buildings from the Pahlavi II period in Sanandaj, potentially restricting the generalizability of findings to other regions or periods. Furthermore, the sample size of buildings examined is small, potentially missing out on a comprehensive representation of architectural variations. Subjectivity in interpreting architectural spaces and biases may also somewhat influence the analysis. Additionally, lacking primary sources and reliance on secondary materials and archival documents might result in information gaps. Lastly, the research mainly focuses on Pahlavi II architecture without delving into broader historical and cultural contexts that could shape architectural trends during the period. By incorporating more primary sources, expanding the sample size, and considering a broader historical context, we may address these limitations and better understand the interaction between tradition and innovation within Pahlavi II architecture.

This research offers innovative contributions to the study of Pahlavi II architecture. By employing a mixed research methodology incorporating literature analysis, on-site surveys, and archival research, the study comprehensively explores the architectural heritage of the Pahlavi II period. The on-site surveys provide direct observations of selected buildings, capturing their spatial arrangements and unique design spaces, while archival research uncovers historical documentation and architectural plans. Additionally, the research investigates the interaction between tradition and innovation, examining factors that influenced the modification of traditional Iranian house spaces. This study expands our understanding of Pahlavi II architecture, introducing new insights and perspectives to the field of architectural research.

This research aims to contribute to the existing body of knowledge by conducting a comprehensive case study of buildings from the Pahlavi II period in Sanandaj. By analyzing the added and removed spaces, this study offers a nuanced understanding of how tradition and innovation intersected within Pahlavi II architecture. The findings will enrich our understanding of architectural transformations during this period and provide valuable insights for architects, historians, and preservationists striving to appreciate and preserve the architectural heritage of the Pahlavi II era. By studying the Pahlavi II period buildings in Sanandaj, we can better understand how tradition and innovation interacted in this architectural style. Persian architecture traditionally encompasses elaborate tilework, domes, and intricate geometric patterns in mosques, palaces, and gardens. However, during the Pahlavi II, Iran witnessed significant socio-political changes that influenced architectural practices. Western modernism and the government's focus on modernization and industrialization profoundly impacted architectural design and construction techniques.

Focusing on case studies of buildings from the Pahlavi II period in Sanandaj is crucial to comprehend the intricate relationship between tradition and innovation in Pahlavi II architecture. These studies allow for analyzing the spaces added to and removed from traditional Persian

architecture during this period. Such analysis provides insights into the evolution of architectural practices and the transformation of the built environment. The primary objective of this research is to contribute to the existing knowledge base by conducting a comprehensive case study of buildings from the Pahlavi II period in Sanandaj. Through a detailed examination of the added and removed spaces, this study seeks to provide a nuanced understanding of how tradition and innovation were intertwined in Pahlavi II architecture. The findings of this research will enhance our understanding of architectural developments during this period and offer valuable insights to architects, historians, and preservationists dedicated to appreciating and safeguarding the architectural heritage of the Pahlavi II era.

MATERIALS AND METHODS

This article employs a mixed-methods approach to investigate the factors influencing the removal of traditional Iranian house spaces in Pahlavi's architecture. The methodology includes a literature review, case study selection, data collection, data analysis, interpretation and discussion, and conclusion and recommendations.

Literature Review

A comprehensive literature review on the Pahlavi II period in Iran is conducted. This includes scholarly articles, books, and other relevant sources that discuss the architectural changes and transformations observed during the era. The review focuses on understanding the factors that influenced the removal of traditional house spaces, such as modernization, Westernization, political agendas, and economic considerations.

Case Study Selection

Sanandaj is selected as the primary focus for the case study due to its representation of the Pahlavi II period and its notable architectural heritage. The samples were chosen based on a thorough and precise justification to ensure representation and diversity. Various factors were considered, including architectural typologies prevalent during the Pahlavi II period, geographical distribution within Sanandaj, and historical significance. The aim was to encompass a range of building types that would adequately capture the architectural style and elements of the era in this specific region. The selection of samples was also guided by factors such as availability, accessibility, and the condition of the buildings. By carefully considering these criteria, the chosen samples were thoughtfully selected to provide a comprehensive overview of the architectural features and influences during the Pahlavi II period in Sanandaj.

Data Collection

On-site visits to selected Pahlavi II buildings in Sanandaj are conducted. The architectural features, spatial organization, and design spaces of the buildings are documented, with particular attention given to the added and removed spaces compared to traditional Iranian house spaces. The data collection includes photography, measurements, and detailed note-taking to ensure accurate documentation.

Data Analysis

The collected data is analyzed to identify patterns and trends in

removing traditional house spaces in the Pahlavi II period architecture. A comparison is made between traditional Iranian house spaces and the new spaces introduced in Pahlavi II buildings. The main factors influencing removing traditional spaces, such as modernization, Western influence, political agendas, and economic considerations, are identified and categorized.

Interpretation and Discussion

The findings from the data analysis are interpreted and discussed concerning the research objectives and the broader context of Iranian architectural history. The implications of removing traditional house spaces within the Pahlavi II period are explored, considering the influences of modernization and Westernization, political ideology, and economic factors. The middle class's role, lifestyle, and approach to modernism in shaping residential usage during the Pahlavi II era is also examined. The rediscovery of traditional spaces within Pahlavi II architecture and the fusion of old and new spaces is highlighted and discussed.

Conclusion and Recommendations

A summary of the key findings and insights from the research, focusing on the relationship between tradition and innovation in Pahlavi II architecture, is provided. Conclusions are drawn about the factors that influenced the removal of traditional house spaces, and recommendations are made for architects, historians, and preservationists on how to appreciate and preserve the architectural heritage of the Pahlavi II period.

The methodology outlined above ensures a systematic and thorough examination of the factors influencing the removal of traditional Iranian house spaces in Pahlavi's architecture. Combining literature review and on-site data collection provides a comprehensive understanding of the subject matter and contributes to the existing knowledge of Iranian architectural history (Figure 1).

RESULTS AND DISCUSSIONS

Introduction to the Spaces of Modern Houses in Sanandaj

Sanandaj witnessed the emergence of modernism during the Second Pahlavi period. As a result, the design and structure of houses in this era underwent significant changes to accommodate the evolving needs and aspirations of the middle class. Exploring the components of these modern houses provides valuable insights into the characteristics that distinguish them from traditional Iranian homes. Key spaces include the entrance vestibule, bedroom, corridor, hall, service areas, dining rooms, work and study rooms, sitting rooms, salon, staircase, balcony, terrace, central courtyard, lightwell, storeroom, and parking area. By understanding these components and their spatial organization, we can delve deeper into the unique features and functionality of Sanandaj's modern houses, shedding light on the interplay between tradition and modernity in Iranian architecture.

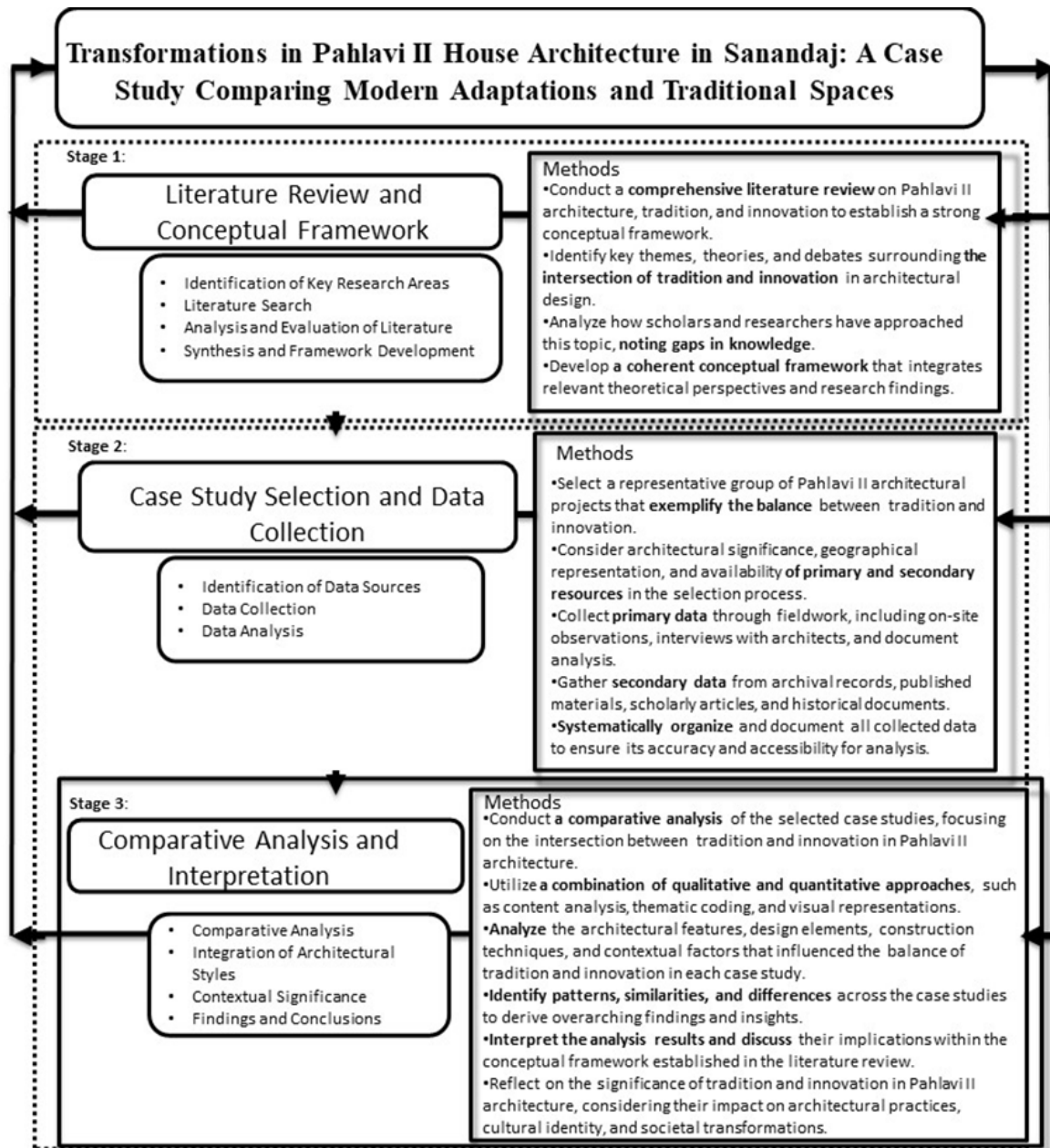


Fig 1: Analytical model of research.

In the course of studying and examining modern houses in Sanandaj and extracting their characteristics, we can highlight the common spaces observed in houses of the Pahlavi II period:

1. Entrances or Darunsho: The entrance area in a building is the first space people enter (Khakzad et al., 2016). During the Pahlavi II period, the entrance area functioned merely as a transitional space, losing its significance as a distinct entity. The only remaining entrance spaces are often the "Sardar" or the main door. Generally, the prominence of the entrance area decreased compared to previous periods, but efforts were made to incorporate more decorative spaces into its facade compared to other parts of the building.

2. Rakhதாகhan: A room or space for dressing and changing clothes within the house (Rahman et al., 2019). Among the added spaces in this period is the dressing room, which is included as part of the house. This space is commonly located after the entrance area in most houses; however, it may be omitted if the house is small.

3. Rahroo: The corridor is considered one of the main spaces in this period, situated among other areas and responsible for organizing and connecting them. All or some of the openings face toward the corridor. In some houses, it is a narrow rectangular strip that connects the entrance of the building to the courtyard or vice versa, while other spaces are arranged on one or two sides of it. In old houses, the corridor,

mezzanine, and platform were in-between spaces between two doors or two areas, acting as a vestibule. However, such vestibule spaces have been eliminated during this period, meaning that no vestibules are visible for any spaces.

4. Sarsara (Hall): Sarsara is an intermediate space between rooms in a house, providing access to other parts and serving as the family gathering area. The central hall of the building, accessed from the entrance, provides access to other rooms (Khakzad et al., 2016). The living room is a space for family members to gather and is more functional than other rooms. In many houses, the hall and living room are combined. The Sarsara, due to its openness to other spaces, plays a role in organizing the space.

5. Room: A structural component of a building constructed with four walls and a ceiling to serve a specific purpose. Nowadays, a room can be considered a fundamental element of any building, and its designation within the structure depends on its function, such as a living room bedroom. (Khakzad et al., 2016).

6. Living room: The largest and most beautiful room in a house used for receiving guests. In colloquial terms, it is also referred to as the "central room" because its size is equivalent to two bedrooms connected internally, often seen in L-shaped or rectangular forms. This name was not used traditionally, where the terms "talār" and "Panj Darī" were used as designations for receiving rooms (Rafieisarceki et al., 2003).

7. Dining room: A room near the kitchen or sometimes part of the living room, specifically designated for family dining and especially for guests. This room has a relatively low enclosure. This name was also not used traditionally, as it was one of the internal rooms like the "seh darī" designated for guests (Davis, 2020).

8. Bedroom: A room used for sleeping and relaxing. This room is equivalent to the "seh darī" room in traditional houses. In the past, alcoves and corners were used for privacy, but modern houses have eliminated these spaces (Khakzad et al., 2016).

9. Eyvānchēh (French: Balcony): Eyvān (iwan) is one of the oldest basic spaces of Iranian architecture, defined as a covered space open to the outside on one to three sides. In this period, it transformed into an eyvānchēh. "A small-width even is called eyvānchēh" (Rafieisarceki et al., 2003). It is located after the courtyard before entering the building.

10. Mehtābi (French: Terrace): Mehtābi is a front platform facing the courtyard or on the upper floors of a building without a roof. It is also known as a "spring bed," where people sleep in it during warm spring nights when the moon is visible in the sky. In the architecture of the Pahlavi II period, mehtābi, or terrace, exhibits various forms (Khakzad et al., 2016). This exploration of the spaces of modern houses in Sanandaj contributes to our understanding of the architectural characteristics of the Pahlavi II period and highlights the changes and innovations introduced during that era.

Visual Examination of the Characteristics of Modern Houses in Sanandaj during the Modern Period

New Houses and Nature

In the houses of the Second Pahlavi period, the courtyard connected humans with nature. However, its utilization has been reduced due to mechanical facilities that allow for environmental regulation in enclosed spaces, resulting in a separation from nature. In this period,

the courtyard is no longer considered the central organizing element for spatial circulation within the house. The central courtyard loses its prominence and is transferred to the frontage of the building. Most courtyards no longer have ponds, but gardens remain significant components. The most significant spatial feature of traditional Sanandaj houses, which involved visual and visual connections to the courtyard from all rooms, is now limited to only one or two rooms that overlook the courtyard, while other spaces lack direct or indirect connections to the courtyard.

Spatial Diversity in New Houses

During the modern period in the Second Pahlavi era, spatial diversity, both quantitatively and qualitatively, significantly decreased (Mirhoseini et al., 2017; Rezaei et al., 2019). Although all three types of open, enclosed, and covered spaces are still present, the utilization of the courtyard (open space) and terrace (covered space) is much less compared to previous eras. The reduction in area, lack of decorations, and lack of spatial diversity in floor variations and ceiling heights contribute to this decline. Basements are not seen in any of the houses of the Second Pahlavi period, and no separate space is designated for different seasons. The spatial organization of houses in this period mainly consisted of two floors, with limited space allocated to several rooms. The reception room is called "To Dar To" and is larger than the others, serving as a guest reception area. This room typically consists of two interconnected rooms, with a shared wall connecting them in an L-shape or straight configuration. The remaining rooms, without distinct differentiating features, are used as bedrooms, and there is also a kitchen as a service area. The storeroom is another service space in the house, which, if there is limited space, is partially or entirely relocated to the courtyard, referred to as "Barik Sazi" in such situations. The reception room and bedrooms are typically on the first or second floor.

Flexibility in New Houses

In general, spatial flexibility was low during the Second Pahlavi period, with limited or weak possibilities of combining private and public spaces (Rahimi et al., 2019; Hosseini et al., 2020). The spaces were fully enclosed, lacking communication pathways between them, with only an entrance serving as the entry point to a space. This applies to both rooms and balconies (terraces), meaning only one or two spaces overlooking the courtyard, provided the windows are not too high above the floor, allowing for spatial expansion.

Spatial Hierarchy in New Houses

In the modern era, direct connections between the outside of the house and the courtyard or the interior of the house have led to the disappearance of this spatial hierarchy. The traditional spatial hierarchy within new houses has faded during the modern era due to direct connections between the outside house, the courtyard, and the interior spaces. In the past, the courtyard held a central role, organizing spaces hierarchically. However, modern architecture has embraced a more integrated and fluid approach. Boundaries between spaces have become more permeable, creating a sense of openness and adaptability. This change reflects a societal shift towards inclusivity and connectivity. Modern houses aim to foster communal

interaction and shared experiences, promoting social inclusivity rather than rigid hierarchies.

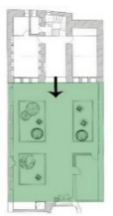
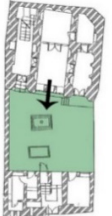
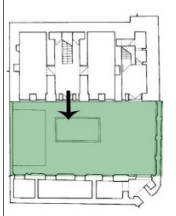
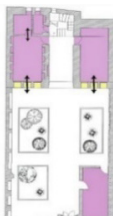
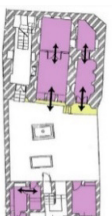
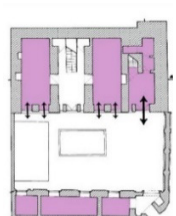
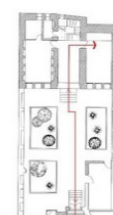
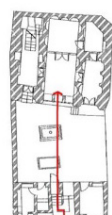
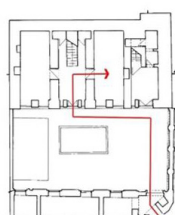
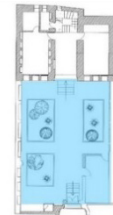
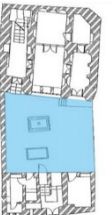
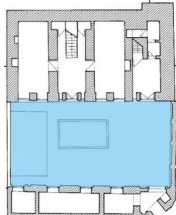
Placement of the Courtyard in New Houses

During modern times, the placement and purpose of courtyards in houses have significantly changed (Hosseini, 2018; Khodabakhshi et al., 2019). Traditionally, courtyards played a central role, connecting various rooms visually and spatially. However, in modern house design, courtyards have been moved outside the private space, resulting in a loss of visual privacy. Courtyards are now commonly positioned on one or all sides of the house, indicating an outward orientation. They have transitioned from integral interior spaces to external features with new functions. This relocation compromises the sense of enclosure and seclusion that courtyards previously provided. Placing courtyards on the periphery exposes them to the

street or neighboring properties, reducing visual privacy. It signifies a departure from the emphasis on seclusion and highlights a new era of architectural design that prioritizes interaction with the surrounding environment.

Furthermore, this change affects the relationship between the interior and exterior spaces. Previously, courtyards acted as transition zones connecting the interior with the outside world. However, their external placement disrupts the direct visual and spatial connections. This alteration contributes to the overall outward orientation of modern house design. Modern houses have shifted courtyards from private spaces to external locations, altering their significance and compromising visual privacy. This change reflects a departure from seclusion, emphasizing interaction with the environment. It also affects the relationship between interior and exterior spaces (Table 1).

Table 1: Investigation of various components of Pahlavi period houses in Sanandaj

MemarBashi House	GalehDari House	Ahmadzadeh House	
			Communication with nature in modern homes
			: Low flexibility of space in Pahlavi period houses
			Absence of spatial hierarchy in modern houses of Sanandaj and direct connection between outside and inside
			The location of the yard in modern houses

Results

1- Factors Influencing the Removal of Traditional Iranian House Spaces in Pahlavi Period Architecture

During the Pahlavi period in Iran, there was a significant shift in the architecture of Iranian houses. Traditional Iranian house spaces, such as Sedari and Shahneshin, were removed from the design of houses. This change influenced several factors, including modernization, Westernization, political agendas, and economic reasons. The Pahlavi government believed that traditional Iranian architecture was outdated and did not reflect the modernization that was taking place in other parts of the world (Akbari, 2020). They also wanted to create a more Western-style architecture in Iran, which required the removal of traditional Iranian house spaces (Hejazi et al., 2015). The influence of Western architecture and the desire to align with Western cultural norms played a significant role in this shift.

Additionally, the government had a political agenda to distance itself from Iran's Islamic and Persian heritage (Mashayekhi, 2016). By removing traditional Iranian house spaces, they aimed to establish a new identity for Iran that was more secular and modern (Devos et al., 2013). This desire to break tradition was crucial in removing house spaces like Sedari and Shahneshin. Furthermore, economic reasons played a role in this transformation. The Pahlavi government encouraged the construction of large, modern buildings, which necessitated more space and resources. Traditional Iranian house spaces were seen as inefficient and impractical for modern living, prompting their removal to accommodate more modern and efficient designs (Mahdizadeh et al., 2018). Considering these various factors makes it evident why Sedari, Shahneshin, and other traditional Iranian house spaces were removed from Pahlavi period architecture. The desire for modernization, the influence of Western architecture, political agendas, and practical considerations all contributed to this significant shift in Iranian house design during that era.

2- Rediscovery: Revisiting the added and removed spaces of the Iranian house

The emerging middle class, a product of modernism (Davis, 2020), played a significant role in shaping the new residential usage of the Second Pahlavi period in Sanandaj. The lifestyle and positive outlook of the middle class towards modernism and its achievements made them the primary audience for the newly designed houses during this era. To better understand the characteristics of the houses from this period, the "typology" method was employed. This involved observing, photographing, recording, comparing, and evaluating various existing spaces, leading to an organization of spatial arrangement and the placement of spaces next to each other. The spatial system was classified into three categories based on the criteria of "coexistence of filled and empty spaces," "access axis," and "arrangement of interior spaces." The section on façade and decorations also underwent classification based on the level of decoration and embellishment of the entrance frame.

The study of the added and removed spaces in the Iranian house revealed a rediscovery of the foundation of vernacular houses in Iranian architecture. Originally, these houses were small and primarily consisted of a single room or chamber where various

activities occurred. As time passed, distinct areas for sleeping, living, cooking, and handcrafting were established within the house. Traditional Iranian vernacular architecture typically consisted of the summer residence (internal and external) and the winter residence (internal and external). Each part included spaces such as a porch, gateway, entrance vestibule, Hoshi (a confidential space), corridor, mezzanine, central courtyard, eyvān, rooms with multiple entrance doors, main hall, Tehran's room, alcove, kitchen, restroom, nīmād (water storage), Āteshgāh (heating chamber), and storehouse (Rafieisarceki, et al., 2003; Yousefzadeh, 2016). During the Pahlavi period, the architectural style of houses in Sanandaj incorporated a blend of old and new spaces influenced by the entry of modernism and the intensified style of urban and suburban living. The spaces of Pahlavi houses in Sanandaj included an entrance vestibule, bedroom, corridor, hall, service areas (including a heater and toilet), dining rooms, work and study rooms, sitting rooms, salon, staircase, eyvāncheh (balcony), mehtābi (terrace), central courtyard, Padio (lightwell), storeroom, and fireplace (parking) (Rafieisarceki et al., 2003). (Table 2). By presenting these findings, the research highlights the influence of the middle class and the evolution of housing typologies during the Second Pahlavi period in Sanandaj. It also showcases the fusion of traditional and modern spaces within Pahlavi II architecture, reflecting the changing sociocultural milieu of the era.

3- The Evolution of Traditional Iranian House Spaces During the Pahlavi II Period: A Blend of Tradition and Innovation

The findings of this study shed light on the dynamic relationship between tradition and innovation in Pahlavi II architecture, particularly in Sanandaj. A comprehensive understanding of the evolution of architectural practices during the Pahlavi II period has been achieved through a comparative analysis of the added and removed spaces in traditional and modern houses. Examining buildings from the Pahlavi II period in Sanandaj emphasizes the remarkable fusion of tradition and innovation that characterizes this architectural style (Lotfi Demairchi et al., 2022). The architects of the time successfully incorporated modern spaces while preserving Iran's cultural heritage, creating a unique architectural expression that resonates with a modernizing nation's past and aspirations.



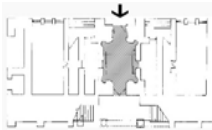
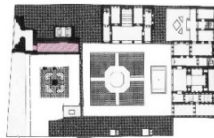
Pahlavi II's architectural heritage shows a shift in spatial organization and usage. The central courtyard, once a significant feature of traditional houses, lost prominence in favor of new spaces that catered to the changing lifestyle and needs of the middle class. This transformation demonstrates the influence of modernism and urban living on architectural design during the period. Moreover, the study highlights rediscovering traditional spaces within modern Pahlavi II houses. These houses showcase a blend of old and new spaces, reconciling tradition with the advances of modern architecture. While some traditional spaces were removed, new spaces such as entrance vestibules, bedrooms, and dining rooms were added. As a result of this integration, Pahlavi II architecture reflects the merging of tradition and innovation. The research results provide valuable insights into the architectural practices of the Pahlavi II period and contribute to the preservation and appreciation of its unique architectural heritage.

Architectural historians, preservationists, and architects can better appreciate Pahlavi II's architecture by understanding the added and removed spaces.




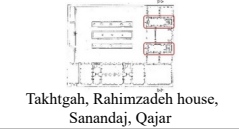




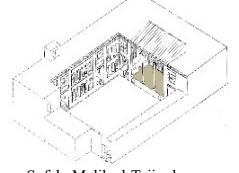
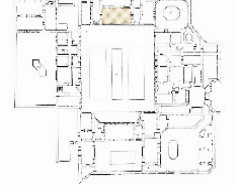
In conclusion, the Pahlavi II period in Iran represents a transformative phase in architecture, where tradition and innovation coexist. This

study shows how tradition and innovation intertwine in Pahlavi II architecture, revealing how architectural practices have evolved and how old and new spaces are integrated. The architectural heritage of the Pahlavi II era is better understood through these insights, which leave a lasting impression on contemporary design.

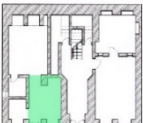




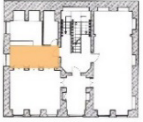


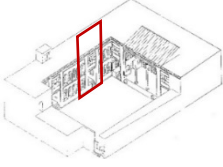
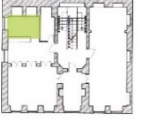

Table 2: A comparative study of the removed and added components of the house in the second Pahlavi period compared to the traditional period

Continuity	Add	Delete	New Function	Old Function	Location in a modern house	Location in a traditional house	New name	Old name
		•	-	A part of the house is reserved for the wife, children, servants, and other household members.	-	 Horizontal section of the first floor, interior, Salar Saeed house, Sanandaj, Qajar	-	internal
		•	-	A part of the house is reserved for people other than the house's residents.	-	 Horizontal section of the first floor, interior, Salar Saeed house, Sanandaj, Qajar	-	external
		•	-	The vestibule is a space located after the front door and is the only place connected to the outside of the house (Pirmia, 1372: 160).	-	 Hashti, a part of Khosroabad mansion, Sanandaj, Qajar	-	Heshti
		•	-	A hallway is a covered and extended space that is usually a passage. Its location in the house is between the vestibule and the courtyard (Documents and Research Center, Faculty of Architecture and Urban Planning, Shahid Beheshti University, 1383: 11).	-	 Entrance hall, Asif mansion, Safaviyeh	-	Dalan

Continue of Table 2: A comparative study of the removed and added components of the house in the second Pahlavi period compared to the traditional period

Continuity	Add	Delete	New Function	Old Function	Location in a modern house	Location in a traditional house	New name	Old name
•			It is the open and roofless part of the house, which is enclosed and bordered (Rafii Sareshti, Rafizadeh, Ranjbarkermani, 2012: 421 and 422).	Mian sera or courtyard is the open part in the middle of the house where other spaces open (Rafii Sareshti, Rafizadeh, Ranjbarkermani, 2012: 421 and 422).	 Yard, Mimarbashi House, Sanandaj, Second Pahlavi.	 The central courtyard of Moshir Divan mansion, Sanandaj, Qajar	courtyard	<i>Between the house</i>
•			—	"A small hall behind the building that provides light to the surrounding rooms" (Rafii Sareshti, Rafizadeh, Ranjbarkermani, 1382: 190)	—	 Backyard of Southeast Front, Moshir Divan Building, Sanandaj, Qajar.	Backyard	Backyard
		•	—	Wide corridor in old houses (Pirmia, 1372, 378)	—	 Takhtgah, Rahimzadeh house, Sanandaj, Qajar		Takht Gah
•			"Ivan with a small width is called Ivanche." (Rafii Sareshti, Rafizadeh, Ranjbarkermani, 1382: 100).	A porch is a semi-open space, usually closed on three sides, and overlooks the open space on one side (Documents and Research Center, Faculty of Architecture and Urban Planning, Shahid Beheshti University, 1375: 11).	 Balcony, Colonel Azmode's house, Sanandaj, Pahlavi	 Ivan Khane Vakil, Sanandaj, Afshariya and Zandiye.	Ivanche (balcony)	Ivan
•			Baharkhob is the platform in front of the building facing the courtyard or on the floors of the building without a roof. That is why it is called moonlight or Baharkhob; when the weather warms up in the spring, they sleep in it at night, and the moonlight is visible in the sky."	A space without a roof that is above the level of the yard (Documents and Research Center, Faculty of Architecture and Urban Planning, Shahid Beheshti University, 1375: 11). " (Rafii Sareshti, Rafizadeh), Ranjbarkermani, 1382: 100).	 Baharkhavab (terrace), Ahmadzadeh house, Sanandaj, Pahlavi	 Mahtabi, Khosroabad Mansion, Sanandaj, Qajar.	Trass (terrace)	Mahtabi
		•	—	A roofless platform whose level is higher than the level of the yard and is usually placed in front of closed spaces (Documents and Research Center of the Faculty of Architecture and Urban Planning, 1375: 11).	—	 Sofeh, Malik al-Tajjar house, Sanandaj, Qajar	—	Sofeh
		•	—	The hall is a closed, high, luxurious space with a wide opening and rectangular base. In houses, usually, the large side of the hall is adjacent to the yard and has a sash (Documents and Research Center, Faculty of Architecture and Urban Planning, Shahid Beheshti University, 1383: 11)	—	 Talarl, first-floor horizontal section, Moshirdivan Building, Sanandaj, Qajar.	—	Talar

Continuie of Table 2: A comparative study of the removed and added components of the house in the second Pahlavi period compared to the traditional period

Continuity	Add	Delete	New Function	Old Function	Location in a modern house	Location in a traditional house	New name	Old name
	•		"An organ in the middle of the house for access to other organs and the living room of the family. The middle hall of the building after the entrance from which other rooms can be accessed" (Rafieisareshti, Rafizadeh, Ranjbarkermani, 2003: 196).	—	 Entrance hall, Mimarbashi House, Pahlavi, Sanandaj	—	Entrance hall	—
		•	—	A throne room is a space embedded in the middle of the main side or the front of a hall porch or other space that is a suitable place for elders to sit (Documents and Research Center, Faculty of Architecture and Urban Planning, Shahid Beheshti University, 1383: 11).	—	 Shah Neshin, horizontal section of the first floor, Moshirdivan Mansion, Sanandaj, Qajar	—	Shah Neshin
		•	—	Symmetrical spaces on the upper floor and sides of high spaces, such as halls and porches, usually overlook them.	—	 Ghoshwar, House Salar Saeed, Sanandaj, Qajar	—	Goshvar
•			It is the house's largest and most luxurious room, which is used to receive guests. Its area is equal to the area of two bedrooms.	Five doors is a large room with five tall windows in a row, and its proportions are formed based on them, and its entrance or entrances are located on the sides, i.e., the shorter sides. This room is used as a reception. (Documents and Research Center of Faculty of Architecture and Urban Planning, Shahid Beheshti University, 1375: 11).	 Catering, Khaneh Ahmadzadeh, Sanandaj, Pahlavi	 Habibi House, Sanandaj, Qajar.	catering	five doors
	•		A room near the kitchen or the reception room (sometimes a part of the reception room) is special for family and especially guests to eat (Rafii Sareshti, Rafizadeh, Ranjbarkermani, 1382: 196).	—	 Dining room, Memar Bashi house, Sanandaj, Pahlavi	—	Dining Room	—
•			It is a room to relax and sleep and be alone.	A three-door is a room with a square or rectangular base with three tall windows side by side facing the courtyard. Its proportions are formed based on them, and its entrance or entrances are on the sides.	  Bedroom, Arabzadeh house, Sanandaj, Pahlavi	 Three doors, three-dimensional image, Malek Al-Tajjar House, Sanandaj, Qajar.	bedroom	three doors
•			The kitchen in modern houses is a special and multipurpose part, such as storage, cooking and eating, washing dishes and clothes, and sometimes hosting guests is also done in the kitchen. Nowadays, the kitchen is built close to the guest house and the entrance (Rafii Sareshti, Rafizadeh, Ranjbarkermani, 2012: 44).	This space was usually square or rectangular and was built near the reservoir and water well. The local kitchen for cooking, wood storage, an oven for baking bread, and a ledge for placing cooking tools and food are built into its walls (Rafii Sareshti, Rafizadeh, Ranjbarkermani, 2013: 44).	 Kitchen, Mimarbashi House, Sanandaj, Pahlavi	 Kitchen, first-floor horizontal section, Khosroabad Mansion, Sanandaj, Qajar.	kitchen	Matbakh

CONCLUSION

The Pahlavi II period in Iran represents a transformative phase in architecture, where tradition and innovation coexist harmoniously. Through the findings of this study, the dynamic relationship between tradition and innovation in Pahlavi II architecture, particularly in Sanandaj, has been unveiled. Comparing the added and removed spaces in traditional and modern houses has provided valuable insight into the evolution of architectural practices during this time. Examining buildings from the Pahlavi II period in Sanandaj highlights the remarkable fusion of tradition and innovation that characterizes this architectural style. Modern elements were successfully integrated while preserving Iran's cultural heritage, resulting in an architectural expression that resonates with a modernizing nation's past and aspirations. One significant shift observed in Pahlavi II architecture is the spatial organization and usage transformation. In traditional houses, the central courtyard was a prominent feature. However, new spaces were created to accommodate the changing lifestyles and needs of the middle class. This shift demonstrates modernism's influence and urban living's impact on architectural design during that era.

Furthermore, this study sheds light on rediscovering traditional spaces within modern Pahlavi II houses. These houses showcase a seamless blending of old and new spaces, effectively reconciling tradition with the advances of modern architecture. Some traditional spaces, such as Sedari and Shahneshin, were removed while new spaces, such as entrance vestibules, bedrooms, and dining rooms, were added. As a result of this integration, Pahlavi II architecture successfully integrates tradition with innovation.

The research findings contribute significantly to the preservation and appreciation of the architectural heritage of the Pahlavi II period. Architects, historians, and preservationists can better understand Pahlavi II's architecture by understanding the added and removed spaces analyzed in this study. These insights have a lasting impact on contemporary architectural design, offering insight into the intricate relationship between tradition and innovation. The case study of buildings from the Pahlavi II period in Sanandaj further enriches our understanding of the fusion of tradition and innovation within this architectural style. It reveals the successful revitalization of traditional Persian architectural spaces while incorporating innovative concepts and materials. The Pahlavi II architecture serves as a testimony to the aspirations of a modernizing nation while honoring Iran's rich cultural heritage.

The examination of modern houses in Sanandaj during the Pahlavi II period showcases a spatial organization and usage shift. The central courtyard, once vital, loses prominence as the connection with nature diminishes. However, Pahlavi II's architecture reflects the influence of the middle class and their positive approach to modernism, adapting to their changing lifestyle and needs. The integration of old and new spaces within Pahlavi II houses reflects the evolving nature of Iranian architecture, with distinct areas emerging. The integration of tradition and innovation in Pahlavi II houses showcases the entry of modernism and the impact of intensified urban and suburban living. This research unearths the intricate relationship between tradition and innovation during the Pahlavi II era through a comprehensive analysis of added and removed spaces.

These findings contribute to a deeper understanding of the transformation of architectural practices and the evolution of the built environment during the Pahlavi II era, ultimately preserving and promoting the unique architectural heritage of this period in Iran. Architects, historians, and preservationists can gain valuable insights from this study, enabling them to appreciate and conserve the architectural legacy of the Pahlavi II era. The fusion of tradition and innovation observed in Pahlavi II's architecture inspires architects worldwide and leaves a lasting impression on the contemporary architectural landscape.

AUTHOR CONTRIBUTIONS

Kh. Azzizadeh performed the literature review and experimental design, analyzed and interpreted the data, and prepared the manuscript text and edition. S. Molanai performed the experiments and literature review, compiled the data, and prepared the manuscript. L. Balilan helped in the translation and manuscript preparation.

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CONFLICT OF INTEREST

The authors declare no potential conflict of interest regarding the publication of this work. In addition, the authors have completely witnessed ethical issues, including plagiarism, informed consent, misconduct, data fabrication or falsification, double publication or submission, and redundancy.

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