

Change in Associations – Courtyards of Contemporary Urban Housing of Ahmedabad, India

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Abstract

Traditional Indian homes have always included courtyards, which serve as multipurpose areas for cultural, social, and environmental activities. However, their function and significance in modern urban homes have significantly changed due to rapid urbanization and changing architectural trends. By contrasting their historical uses with present user attitudes and usage trends, this study investigates the shifting associations of courtyards in modern Ahmedabad homes. The study investigates how people currently view courtyards—whether as a luxury feature, a practical necessity, or a nostalgic architectural element—using a primary survey of homeowners. The goal of the study is to record changes in preferences and spatial associations while pinpointing the major drivers of these shifts, such as climatic factors, space limitations, and lifestyle adjustments. The results demonstrate how courtyards, which were once necessary for daylighting, ventilation, and social interactions, are now frequently transformed into passive green spaces, semi-private retreats, or attractive focal points. This study advances a more comprehensive understanding of courtyard spaces in modern urban living by examining these changing functions. It fills a gap in the literature about courtyards' emotional and practical transitions and their applicability in contemporary urban housing. The study emphasizes that although courtyards are still found in urban homes, their associations have changed because of urbanization, shifting family dynamics, and contemporary design tastes.

Keywords: Aspirations, Evolving, Courtyard house, Contemporary house, Ahmedabad houses

1. Introduction

For centuries, courtyards have been a crucial component of Indian homes' architecture. They have historically functioned as the center of the home, encouraging social contact, improving ventilation, and boosting climate comfort. Family get-togethers, festival celebrations, and the generational transmission of cultural customs all took place in courtyards. However, the function and perception of courtyards in modern urban homes have changed significantly as urbanization picks up speed and space constraints become more noticeable. An excellent setting for researching this change is Ahmedabad, a city known for its extensive architectural legacy. The importance of courtyards in residential architecture was historically best demonstrated by the city's pol houses.

In addition to controlling the climate, these enclosed areas promoted social cohesiveness among the occupants. However, because of space constraints, shifting lifestyles, and shifting aesthetic tastes, modern urban homes in Ahmedabad frequently find it difficult to incorporate traditional courtyard designs. Because of this, the purpose and significance of courtyards in contemporary homes are

changing; they can occasionally be used as decorative elements, somewhat private havens, or empty spaces amidst the dense urban fabric. This study aims to investigate how users' associations with courtyards in modern urban homes have changed because of these developments. The study intends to document changes in perception, functionality, and emotional attachment to courtyard spaces by contrasting traditional and modern interpretations.

2. Literature Review

History of Courtyard

Courtyard housing is the most traditional kind of housing. The historical evolution of the courtyard creates a cross of the world as viewed in ancient civilization, from the Chaldean City of Ur circa 2000 B.C. to the 5000-year-old Kahuna in Egypt. The characteristics of courtyard living are determined by the local environment and culture; for example, courtyards may be used as an indoor garden or as the house's focal point. Sumer and Pharaonic Egypt, the first Middle Eastern societies whose diverse courtyard homes and architecture have been documented for thousands of years, have the oldest examples of the courtyard. This pattern was later adopted by western cultures, such as Greek and Roman culture. In 700 B.C., the old forum in Italy was transformed into a new courtyard design called the atrium home. Its objective was to establish a private outdoor area. The Greek pre-style, which featured a small courtyard encircled by columns and had a different design, met the atrium house. In the Middle East, courtyard homes are a traditional architectural style. They can be found in many historic towns and are prevalent in hot, dry climates. Their function is to provide a peaceful environment for introverted individuals.

Courtyard Elements and Form

Courtyards fit into a specific type of architectural space, known as 'Transitional space.' Transitional spaces can be defined as the 'in-between' architectural spaces where the micro climatic condition of indoor and outdoor climate is moderated without using active strategies [1]. Three main categories could be used to group these transitory areas. Category one includes patios, atriums, and courtyards. The second kind consists of attached semi-open areas such a porch, veranda, arcade, balcony, or hallway. Additionally, the building falls under the third type since it is encircled by open areas like gardens or pavilions. Although there is no particular shape for a courtyard, the most common designs are rectangular, square, and circle. However, more complex shapes such as the U, L, single line, or double line shape (Figure 1) could be adopted to overcome constraints such as site restriction, topography, building orientation, or specific function [2]. A good courtyard, according to Meir (2000), is a semi-enclosed space with a well-thought orientation that could optimize its microclimatic efficiency.

A: Single type B: Double line type C: L type D: U type E: Enclosed court type

Source: Lee M. et al, 2015 [8]

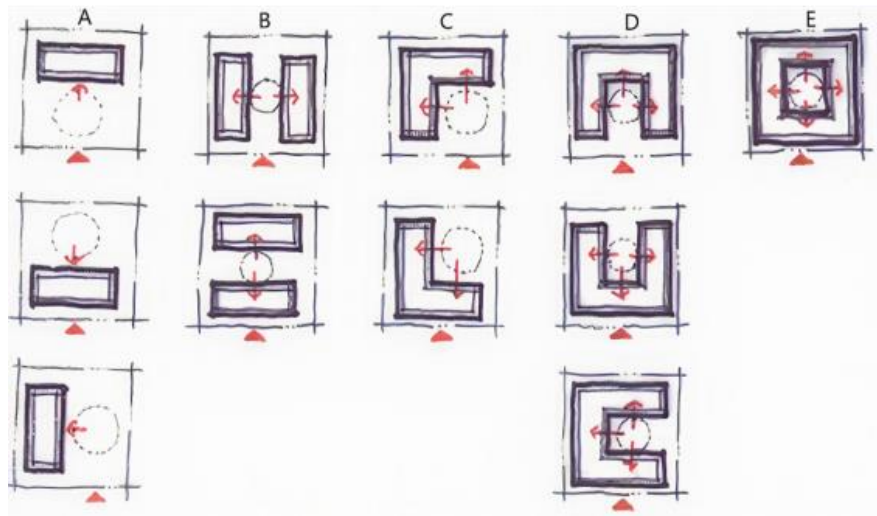


Figure 1. Different designs of courtyard houses

Courtyard Benefits

The physical, psychological, and climatic conditions of the courtyard house are greatly influenced by the courtyard. Because of the courtyard typology's many advantages, scholars have studied the space's potential in social and ecological contexts over the years. As an open yet confined space surrounded by walls, clusters, or the urban fabric, courtyards serve a few social, cultural, and spatial functions. It became very thought-provoking to quantify the benefits of the courtyard based on psycho-social, cultural, religious, climatic, and architectural factors.

Psycho-Social Benefit - The inner courtyard provides a sense of confidentiality and enclosure [3]. Traditional courtyard dwellings provide the utmost level of mental comfort by considering privacy and security [4]. By adding features like shade, vegetation, water features, paved walkways, and vivid colours—all which appeal to the five senses and create a calming atmosphere—courtyards can improve the atmosphere of a house. The therapeutic advantages of courtyards have been confirmed by research from a Hong Kong university. A courtyard that strikes a balance between privacy, security, and visual connectivity can significantly improve the user experience overall.

Cultural Benefit - In many cultures, courtyard homes are significant. Courtyards in Islamic architecture fulfill two functions: they are a calm haven and a barrier that preserves privacy, which is a fundamental architectural idea. Like this, the courtyard, or Brahmasthan, is emphasized as the sacred center of a home in the ancient Indian architectural philosophy of Vaastu Shastra. It is thought to bring harmony and positive energy. In addition to their spiritual and symbolic significance, courtyards serve as key organizing components in the design of a house. Open to the sky, they offer natural light, airflow, and a peaceful haven. To create a private and revitalizing space, they frequently include elements like wind catchers, reflecting pools, or shady seating areas.

Climatic Benefit - To establish a harmonious relationship between the indoor and outdoor spaces of a building, the courtyard is a crucial transition area. In narrow land parcels, it functions as a natural light well, enhancing illumination and ventilation. Building geometry, shading pattern, orientation, built mass, natural elements (water and plant), material, and airflow pattern produce considerable environmental implications in modifying the microclimate of the courtyard's houses [5]. Additionally, courtyards play a crucial role in climate-responsive architecture, offering an effective passive design strategy that promotes thermal comfort and energy efficiency.

Architectural Benefit – A home's courtyard acts as a focal point, extending the living area while seamlessly tying together various areas and uses. Additionally, they are essential in creating a hierarchy of access, moving from public to semi-private and private areas, and guaranteeing privacy in the design. When thoughtfully planned, courtyards can serve as an acoustic buffer for adjacent rooms and improve visual connectivity. Having served as areas for sleeping, eating, and cooking in the past, they also provide a variety of uses. Courtyards enhance the atmosphere of the house and support the idea of an interior landscape when they are furnished with furniture, greenery, and water features.

3. Method & Materials

To understand the changing associations of courtyards in contemporary homes in Ahmedabad, a mix of qualitative and quantitative research methods were used. Data was collected through the following:

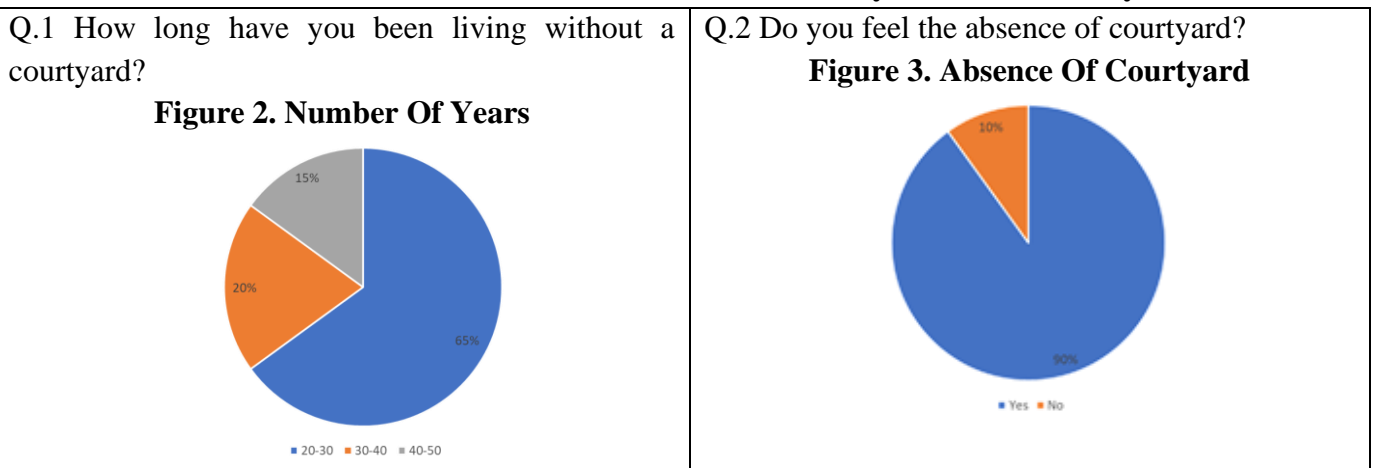
- Literature Review: Explored various academic studies and publications that discuss the evolution, design aspects, and functional benefits of courtyards. This review provided a broader perspective.
- Surveys and Interviews: Structured surveys targeting three specific user groups based on their exposure to courtyard spaces. These surveys helped in gathering insights on personal preferences, spatial experiences, and cultural associations.

The study employs three distinct questionnaire frameworks, each structured to capture perspectives from differentiated user cohorts relative to courtyard occupancy timelines:

- Case 1: Individuals who once lived in homes with courtyards but currently do not.
- Case 2: Individuals who had never experienced living in a courtyard house before but now reside in one.
- Case 3: Individuals who have never lived in a house with a courtyard.

4. Results and Analysis

Case 1: Individuals who once lived in homes with courtyards but currently do not.



Q.3 What was the user usage as per time?

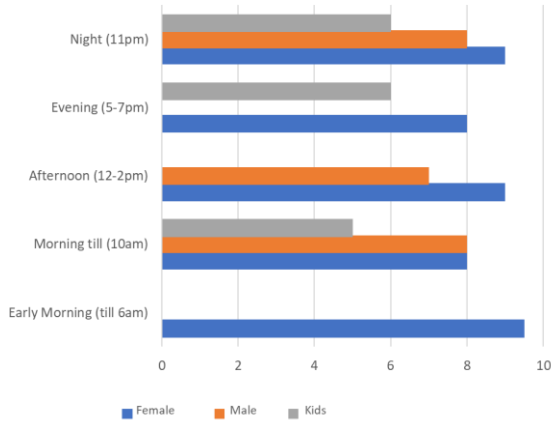


Figure 4. Usage Per Time

Q.4 What activities used to take place in the courtyard?

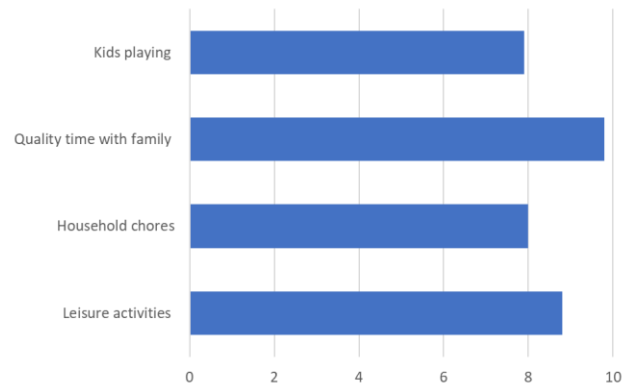


Figure 5. Activities

Q.5 What was the season wise usage of courtyard?

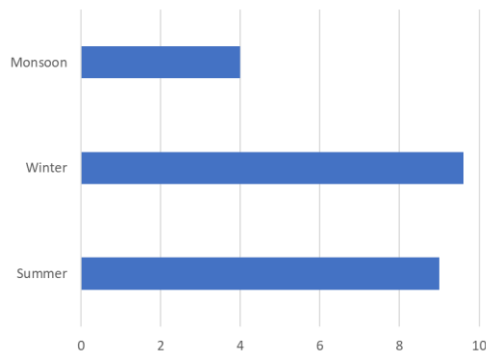


Figure 6. Seasonal Usage

Q.6 What were the features of courtyards?

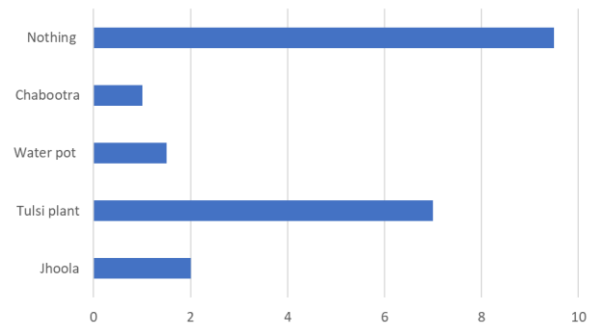


Figure 7. Courtyard Features

Q.7 Was the material used for the courtyard different from the other space?

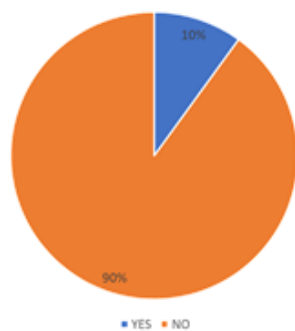


Figure 8. Usage of Different Materials

Q.8 Was the flooring material high maintenance?

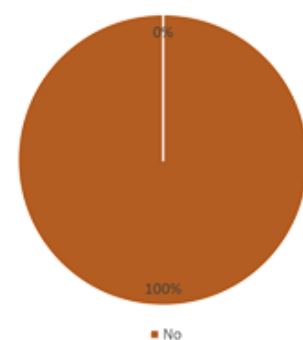
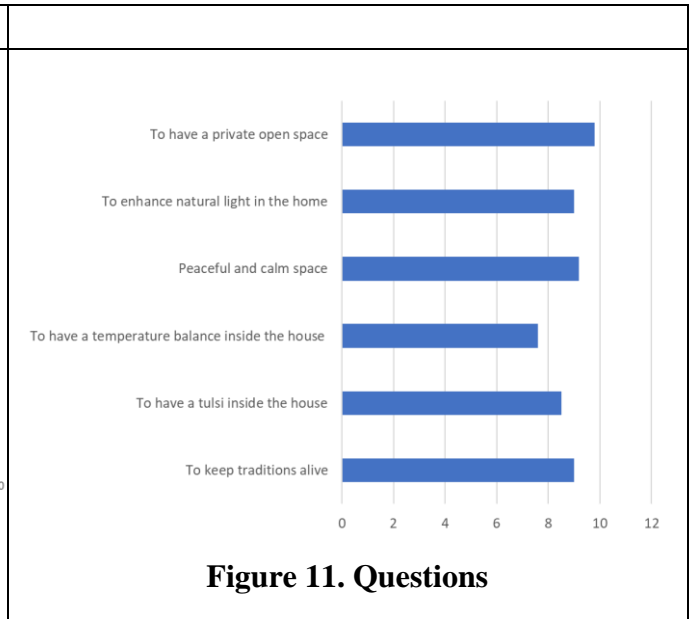
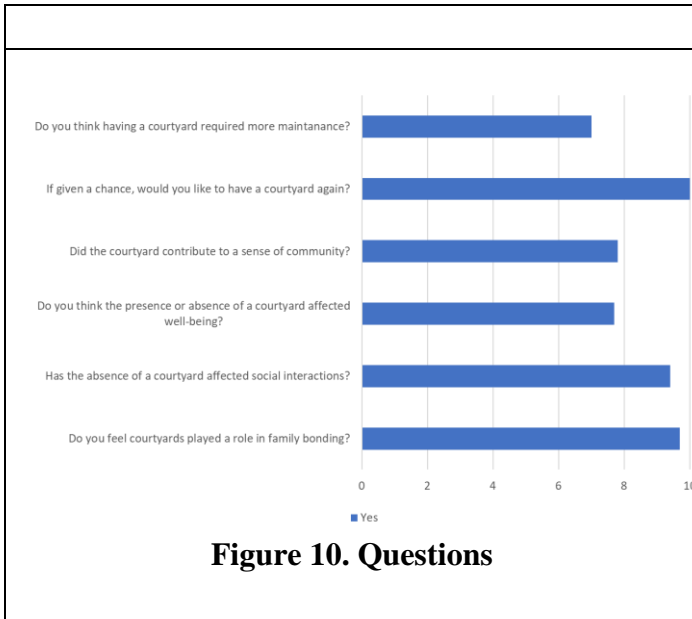
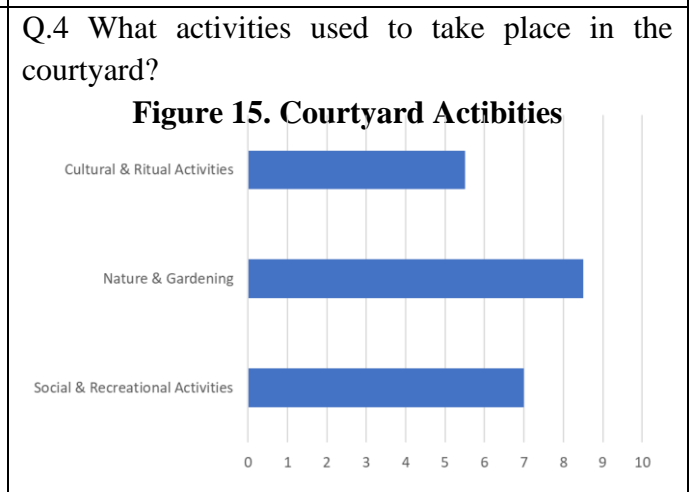
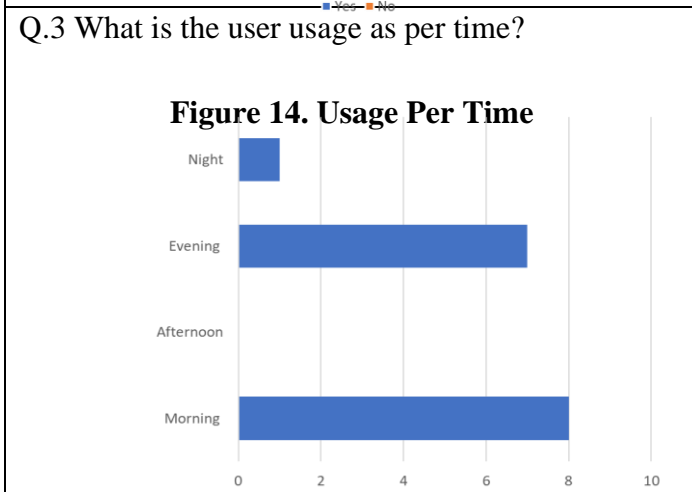
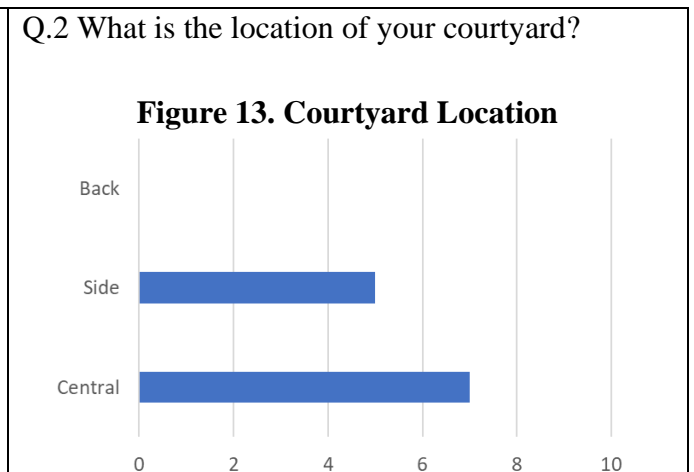
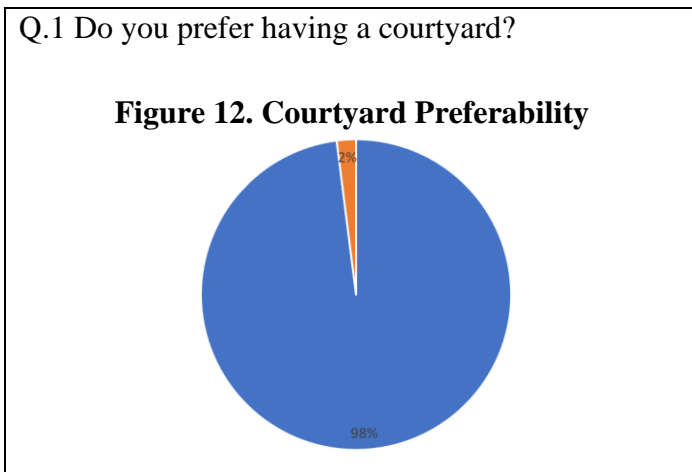


Figure 9. Maintenance of Materials

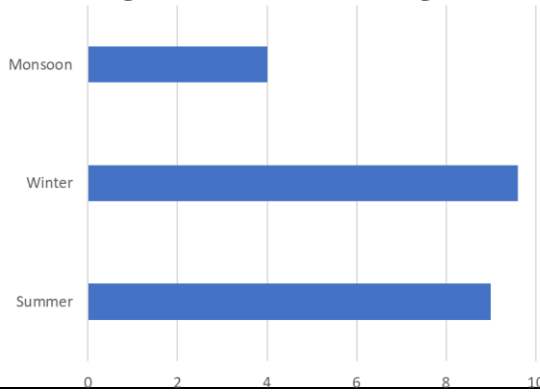


Case 2: Individuals who had never experienced living in a courtyard house before but now reside in one.



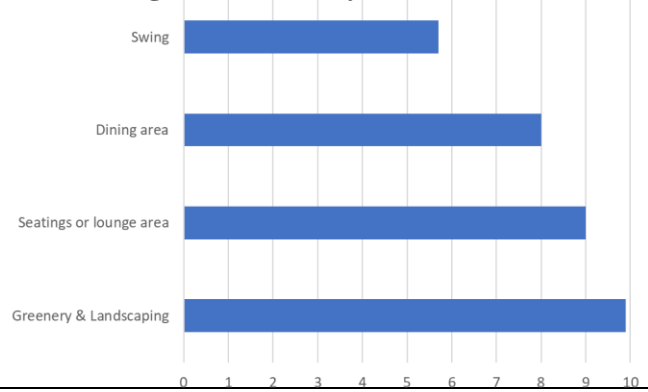
Q.5 What is the season wise usage of courtyard?

Figure 16. Seasonal Usage



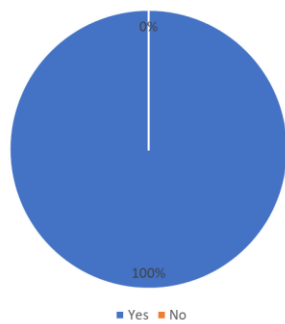
Q.6 What are the features of the courtyard?

Figure 17. Courtyard Features



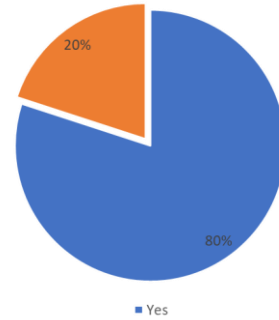
Q.7 Was the material used for the courtyard different from the other space?

Figure 18. Material Difference



Q.8 Was the flooring material high maintenance?

Figure 19. Material Maintenance



Q.9 What type of landscape is been used?

Figure 20. Landscape In Courtyard

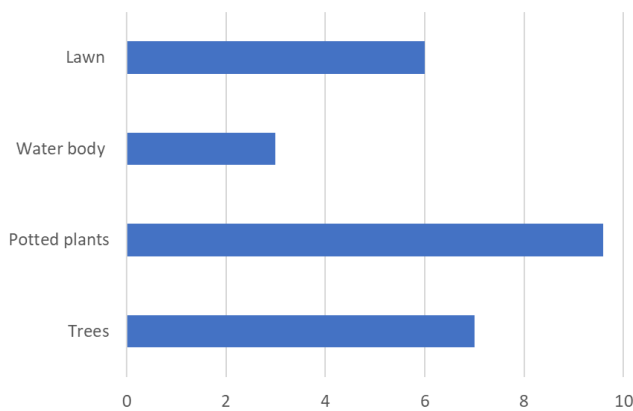
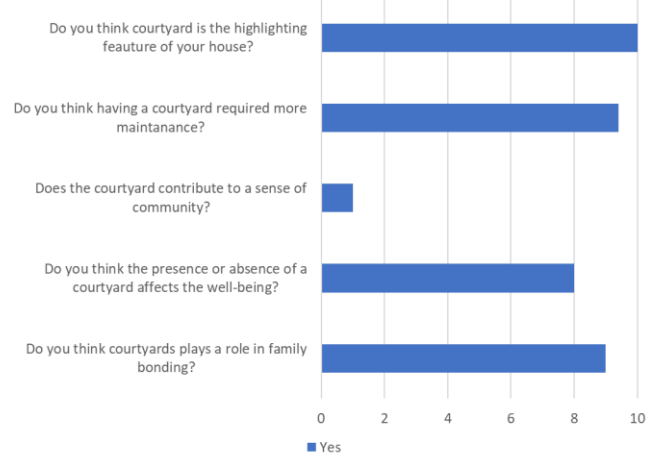


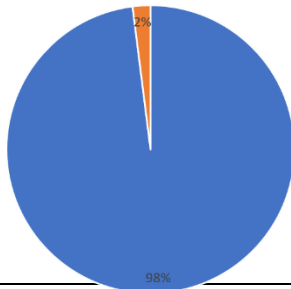
Figure 21. Questions



Case 3: Individuals who have never lived in a house with a courtyard.

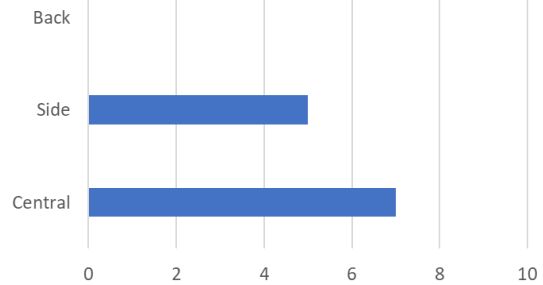
Q.1 Do you wish to have a courtyard in your house?

Figure 22. Courtyard Availability



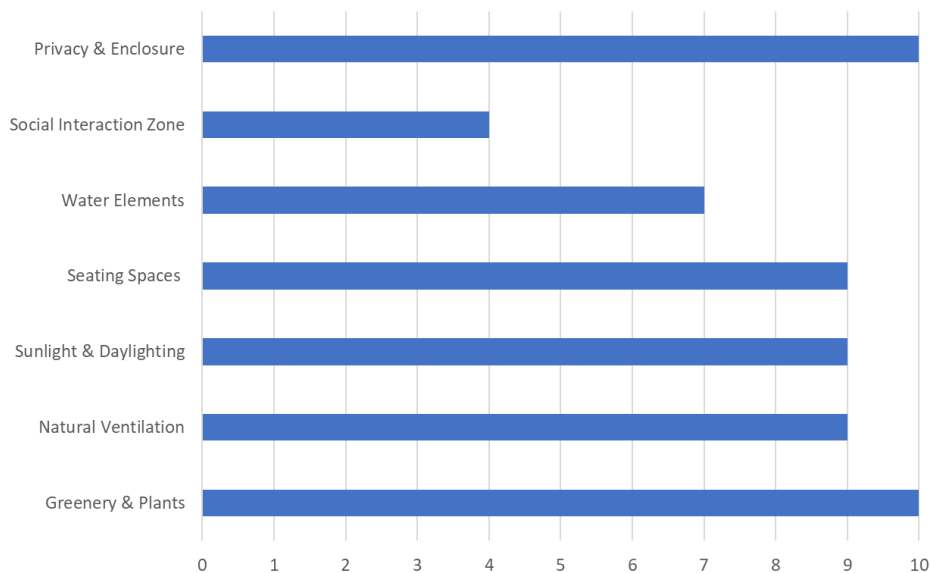
Q.2 Do you think courtyards can enhance the quality of living spaces?

Figure 23. Quality of Life



Q.3 What design features do you associate with courtyards?

Figure 23. Courtyard Design Features



5. Conclusion and Inferences

The user’s perspective on the placement of the courtyard has undergone a significant shift due to the growing demand of enhanced privacy. The change shows the preference towards a more secluded and intimate space within the overall design. Ensuring the courtyard serves as a private retreat than a more open or communal space.

There has also been a noticeable decline in courtyard usage across different seasons. Traditionally courtyard played a vital role in the winters serving as a space to soak in the warmth. However, in the modern days the preference is towards more private indoor areas for comfort. The shift reflects changing lifestyles, evolving architectural designs and a growing emphasis on privacy and convenience.

Courtyards were an important part of cultural and ritual activities in traditional houses. However, in the modern times courtyards are mostly used for landscaping, trying to create a peaceful indoor-outdoor connection.

Contemporary courtyards feature distinct flooring material and patterns that set them apart from the surrounding spaces. This design feature highlights the courtyard as a unique and visually striking element. It also enhances the courtyard's role as a focal point, making it the defining feature of the house. Traditional courtyards were primarily designed for public gatherings, common activities. Whereas contemporary courtyards emphasize on privacy and relaxation. Contemporary courtyards often incorporate water features, green elements, enhancing their aesthetic and environmental appeal.

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