



**DESIGN PHILOSOPHY OF TRADITIONAL COURTYARD HOUSES  
(Diversity and Similarity across Place, Time and Culture)**

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**ABSTRACT**

*The paper 'Design Philosophy of Traditional Courtyard Houses - Diversity and Similarity across Place, Time and Culture' explores the typology of courtyard houses and aims to understand the deciding factors for universal acceptance of Courtyard as a basic element for habitation design. Examples of courtyard houses from Al-Fustat, Baghdad, and Cairo, Dar of North Africa, Mesopotamia house, Greek Peristyle house, Roman atrium house, Beijing house and Jaisalmer haveli are selected to understand the diversity and shared characteristics of courtyard houses across the world. The paper studies the relationship of spatial planning of a Traditional House with the religious beliefs of people, social lifestyle of the community and climatic conditions of that place. Various spaces and their arrangements are discussed to understand their functions according to the season, day or night time, family members, visitors and men or women residing therein. The design of a house is the result of harmony between social, religious, economic and environmental factors. The paper concludes that the courtyard house typology has the potential and practical usefulness in sustainable architecture even in present times.*

**Key Words:** *Courtyard Houses, Traditional Architecture, Vernacular Architecture, Sustainable Architecture, Spatial Planning, Cultural Diversity.*

**ABOUT THE AUTHOR**



The author, Rachan Puneet Singh is a Conservation Architect with over 15 years of professional experience and a decade of teaching experience at the undergraduate and postgraduate levels. He holds a Master's in Architectural Conservation from the School of Planning and Architecture, New Delhi (2009). His portfolio includes extensive heritage conservation, restoration, and adaptive reuse projects funded by Asian Development Bank, World Monument Fund, Central Government and State Governments across India, including Punjab, Leh-Ladakh, Madhya Pradesh, Tripura and Odisha. Currently an Assistant Professor at Guru Nanak Dev University, Amritsar, his research focuses on historic architecture and traditional building knowledge systems. He employs a student-centred pedagogical approach that bridges theoretical frameworks with professional application.



## INTRODUCTION

A court or courtyard, an open-to-sky space enclosed by walls or buildings, has been in use for residential buildings for almost as long as man has started living in constructed dwellings. The courtyard is a square or rectangular open space, generally located in the heart of the house. The various daily activities are practised and performed in the courtyard. It performs an important function as a modifier for climate as well as for lighting purposes.

### Features of Traditional Courtyard Houses

A courtyard provides the light, air and water to the house. It offers favourable *microclimatic* conditions to its inhabitants. The courtyard climate can be easily modified for a comfortable level of air, temperature and humidity with the use of plants, shading devices and water fountains. The walls of the courtyard are oriented in four different directions and the orientation of the houses is not constrained by the external restrictions. As compared to the detached house, it is covered from all three sides, excluding the front entrance. So, it is less exposed to the direct sun. The front side is also protected from the sun and dusty wind with narrow shaded streets. A psychological consideration of an *inward-oriented* dwelling provided privacy from neighbours with respect to both household activities and material possessions. Therefore, inward-looking form results in both acoustical and visual privacy from the street and neighbours. The house is divided into public and private spaces for the enhanced privacy of the family. *Flexibility* of the interior spaces is another characteristic of the traditional courtyard house. Most of its rooms are multipurpose and are not habitually used for a specific purpose. The central open space becomes what the household members need to make use of it. Most of the rooms face this court, so it becomes like a small garden rather than a backyard.

The courtyard houses also had a religious association. The open interior courtyard had an affinity with the image of paradise; its two lateral dimensions were defined, but its height, the third dimension, was limitless.

### TRADITIONAL ISLAMIC URBAN HOUSE

*Fundamental Principles* - It believed in maximum privacy, protection from strangers and a humble appearance of the exterior of the house. The climatic conditions drew out the physical responses in the houses and were most suitable with the courtyard concept. Initially, houses were preferably not to exceed two stories and the exteriors were kept relatively simple and plain as compared to the richness of the interior.

Water fountains, basins and *salsabils*; and planted or potted trees provided the cool ambience in the courtyard as opposed to the outside heat. Orientation of semi-open spaces such as the *iwan*, the verandah and galleries were made to take advantage of climatic conditions. Malqafs (wind traps) equipped with cooling jars as well as when linked to a vertical air duct, brought fresh and humidified air into the house to create better air circulation in the house, which was further enhanced by the high ceiling in the living rooms. The *trellised bay windows* helped to prevent the glare and provide a pleasant level of illumination in the house.

### Typical Features of House Planning

It had two sections for the privacy and security of the family; one is the *Salamlik*, the public section of the house to receive male visitors and friends, and the second is the *Haramlik*, an isolated private section reserved for the family. In larger homes, the two sections were separated with their respective rooms grouped together around their own separate courtyards. In smaller houses, the separation was done vertically, where *salamlik* was on the ground floor, and *haramlik* occupied the upper level of the house around a single courtyard.

The design of the entrance was also governed by the privacy that was maintained by a wall to inhibit a direct view from the street. The whole house's characteristic was designed to prevent all kinds of visibility by outsiders. Window

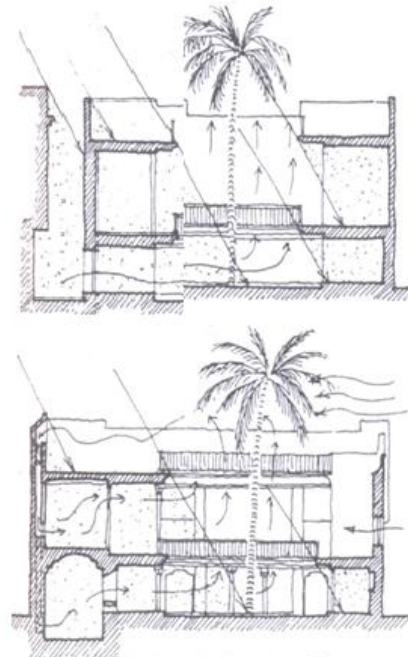


Figure 1: Climate control in courtyard houses  
Source: 6000 years of Housing by Norbert



openings placed in haramlik, either facing the street or the central open court, were protected by a trellised bay window, helping inhabitants to see outside without being seen.

#### SPATIAL PLANNING OF VARIOUS COURTYARD HOUSES

*Al-Fustat House:* The irregular plot shape had a building design with an axial layout that appeared symmetrical and rectangular. The main living spaces and triple arched iwan group in T shape open towards the court. The triple arched iwan was symmetrically and axially planned surrounding the court on one or more sides. The central arch of the iwan was two times larger than the two side arches, which are also simpler as compared to the central one.

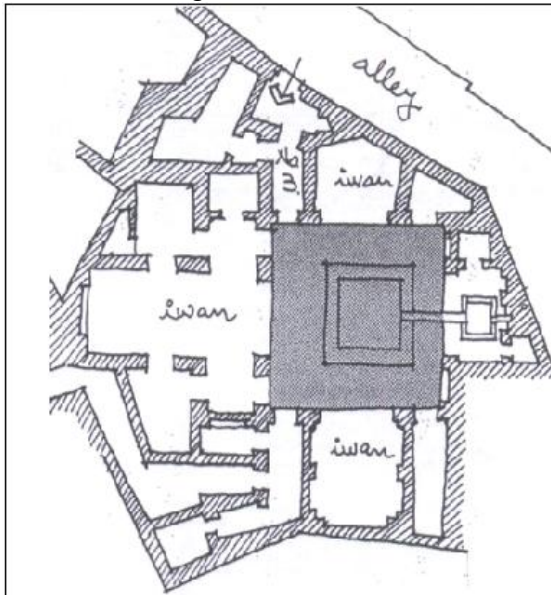


Figure 2: Al-Fustat House (not to scale)  
(Source: 6000 years of Housing by Norbert Schoenauer)

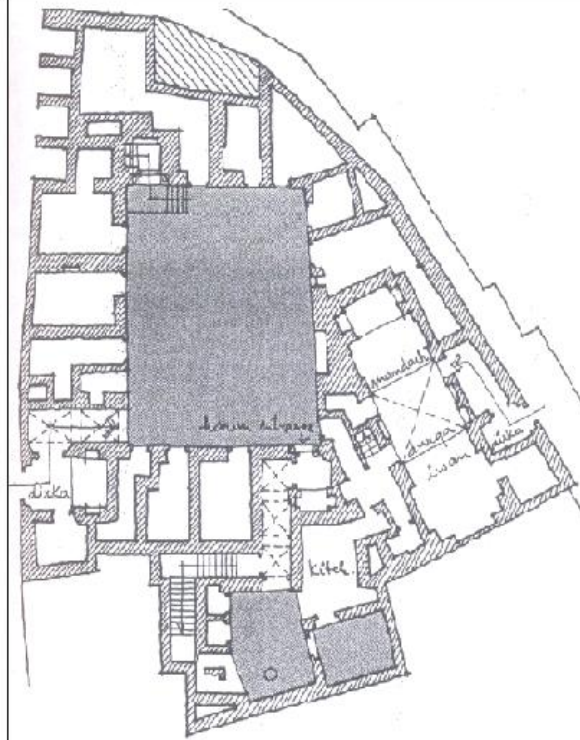


Figure 3: Urban Cairo House (not to scale)  
(Source: 6000 years of Housing by Norbert Schoenauer)

#### The Urban Cairo House

The inward-looking dwelling on an irregular site had a central courtyard. *Durqaah*, the central and cross-vaulted space of Mandarah, functioned as a hallway and servants were stationed here when required. There were iwanat on both sides of the durqaah as reception alcoves with symmetrical wall recesses. A narrow winding passageway linked the mandarah to the hosh. The principal living quarters were on the upper floor level, reached from the hosh giving way to the two main staircases. One led to an open porch, the *maqaad*. On the maqaad opened the khazneh, the private reception hall attached with a projecting balcony and bay window over the court. The second staircase of the hosh, restricted to private use, linked the qa'ah to the ground-floor service rooms.

#### Baghdad House

Spatial elements and their arrangement differ basically in the perception of the functions of a house. The house did not have a bedroom or dining room, but most spaces are multi-functional. For example, a room that was used as a bedroom in winter became the living room in the summer, since the roof terraces were cooler and more desirable for sleeping. Oda and Ursi were used as living spaces predominantly in the cool seasons of the year. *Shenashil* was on the upper floor that inherently featured a large bay window, occupying the full width of the room and cantilevered



over the street. Here, the women of the house gathered socially and observed the street activity through the bay window.

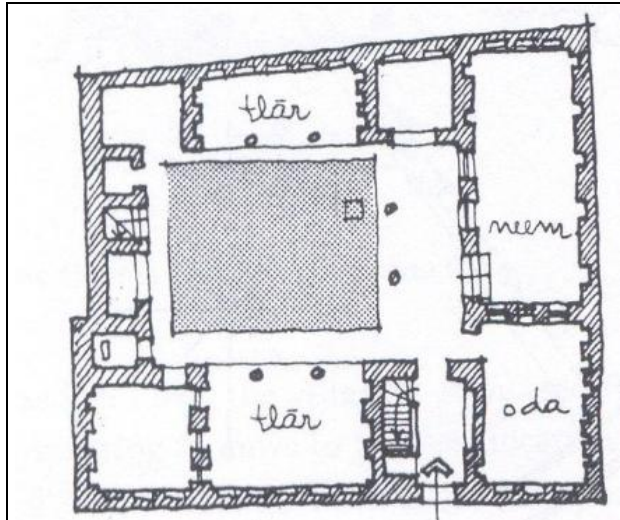


Figure 4: Ground Floor Plan of a typical Baghdad House (Source: 6000 years of Housing by Norbert Schoenauer)

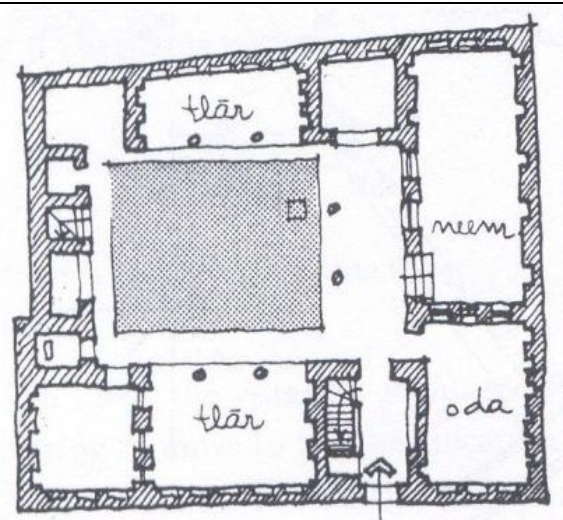


Figure 5: Ground Floor Plan of a typical Baghdad House (Source: 6000 years of Housing by Norbert Schoenauer)

Talar was an elongated rectangular living space with its long axis parallel to the court and was enclosed on three sides, with the fourth open to the Tarmah, which is a porch-like entrance that further opened into the hosh or the courtyard. The iwan (shaded porch) had its long axis parallel to the court. North-oriented shaded talars and iwanat were used during the summer. The south facing areas of the buildings, protected from the cold winter winds, but exposed to the warm radiations of the winter sun, were preferable outdoor spaces during the sunny winter days.

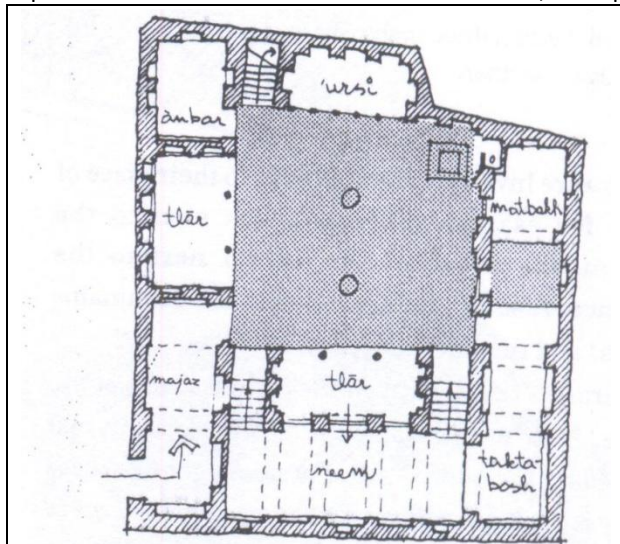


Fig 6: Ground Floor Plan of a larger Baghdad House (Source: 6000 years of Housing by Norbert Schoenauer)

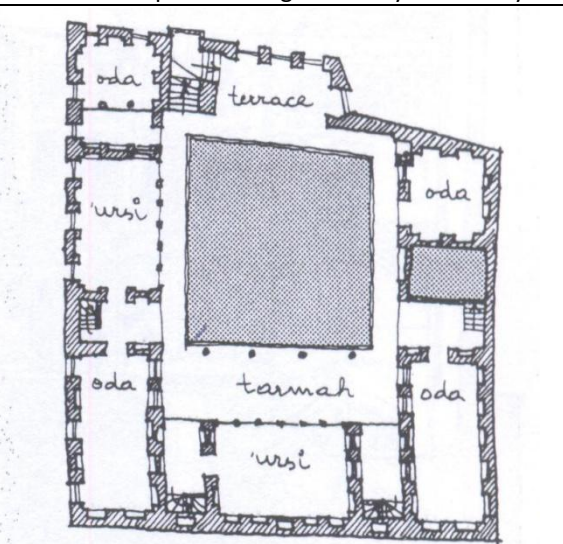
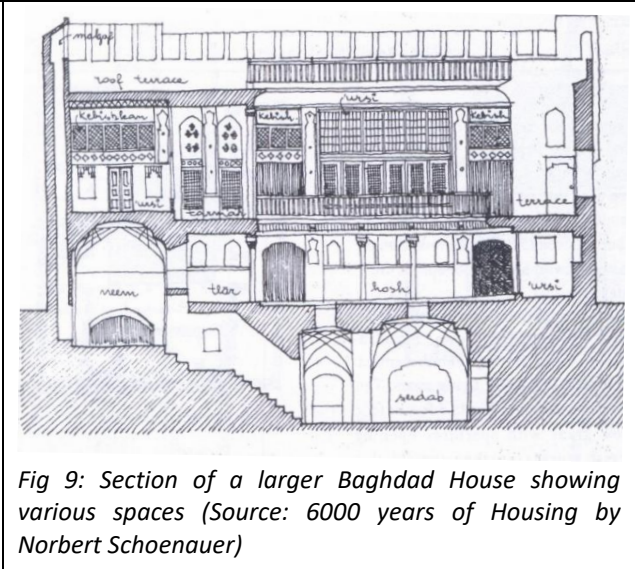
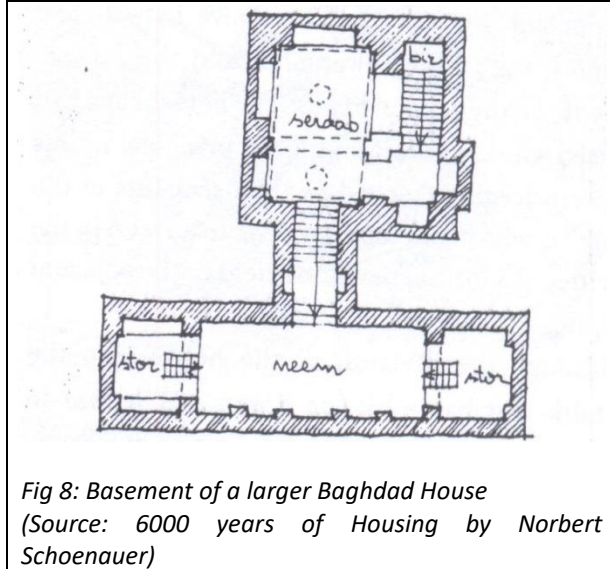


Fig 7: First Floor Plan of a larger Baghdad House (Source: 6000 years of Housing by Norbert Schoenauer)

In the hot summer months, during the midday's extremely hot temperatures, residents used the *Neem*, a semi-basement room, or the *Serdab*, a cellar living room. An elevated platform at one or both narrow sides of the neem called *Taktabosh* offered a dry floor in contrast to the damp floor of the neem. The space below this platform was excavated deeper than the floor of the neem and was used as a storage space. The *Serdab* was a subterranean and

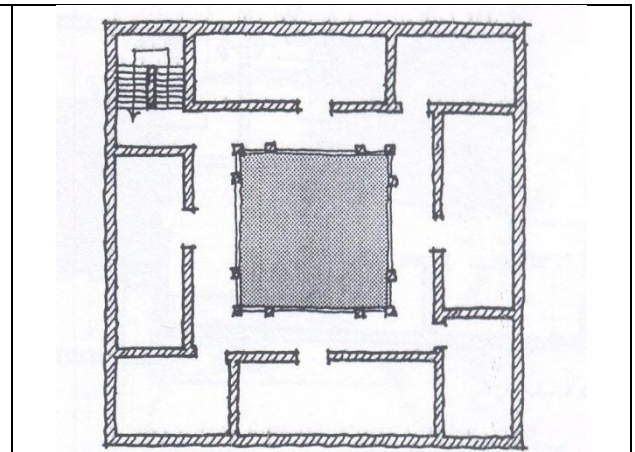
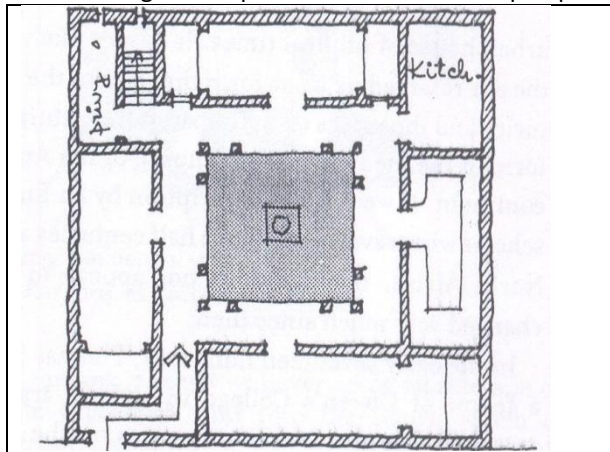


domed living space below the courtyard and was lit through skylights. This had recessed benches in one or more sides. The serdab was accessible through the neem.



**DAR, the Northern African Urban House**

It is a rectangular or square dwelling with a central open court surrounded by rooms on three or four sides with a central doorway for light and ventilation. The open-to-the-sky court, which is required to shield from heat by hanging curtains hung from ropes from one side of the parapet wall to the other.



The central court had two additional smaller courts, one as a service court adjacent to the kitchen and another as a pleasure court garden, facing the open veranda of the main traditional iwan. A large modernised iwan was used for the reception, and a traditional one for daily life. The rooms are long and narrower, with a width not more than three meters, which is limited due to the available length of wood for beams. Staircase, kitchen, bathrooms and toilets may occupy other corners of the Dar. A Dar has two complete stories with a gallery along the courtyard on all four sides. The upper floor rooms get the light from door or window openings in the gallery. Flat terraces with low parapet walls were being used as space for family business, such as drying of linen, preparing figs, and they also enjoyed the cool, refreshing breezes of the evening.

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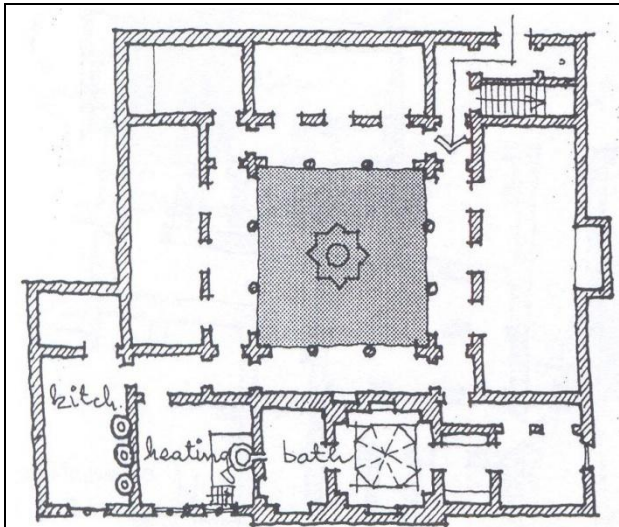


Fig 12: Ground Floor Plan of a Moorish Dar  
(Source: 6000 years of Housing by Norbert Schoenauer)

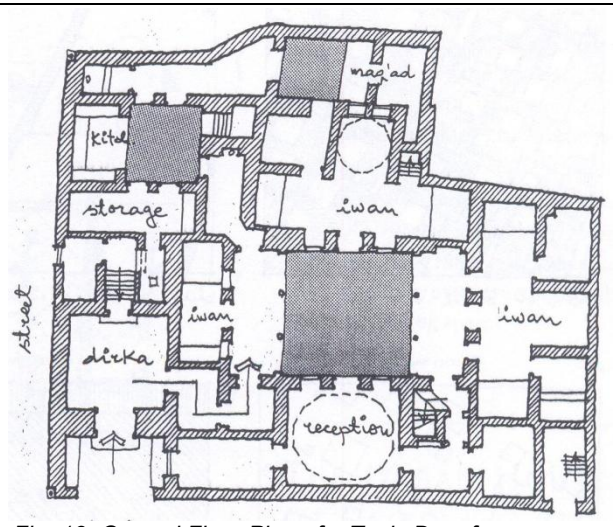


Fig 13: Ground Floor Plan of a Tunis Dar sfar  
(Source: 6000 years of Housing by Norbert Schoenauer)

### Greek Peristyle House

The Peristyle, a courtyard surrounded on several sides by the colonnades, was the central space of this urban house. It had an unpretentious character when viewed from the street; the courtyard principle made it unnecessary to have window openings in external walls, and street elevations were both modest and simple in design. The interior could be lavish, but the social status of the occupants was rarely recognisable by the exterior. Courtyards, an indispensable feature of the house, served as a source of light and air in the surrounding rooms and enabled the inhabitants throughout the greater part of the year to carry on many household activities in the open while remaining in comparative privacy from the outside world.

The courtyard was usually located in the southern part of the house so that the principal rooms might receive better insulation. Generally, a single-storied structure, but occasionally larger houses had two stories with a two-tier colonnade in the courtyard.

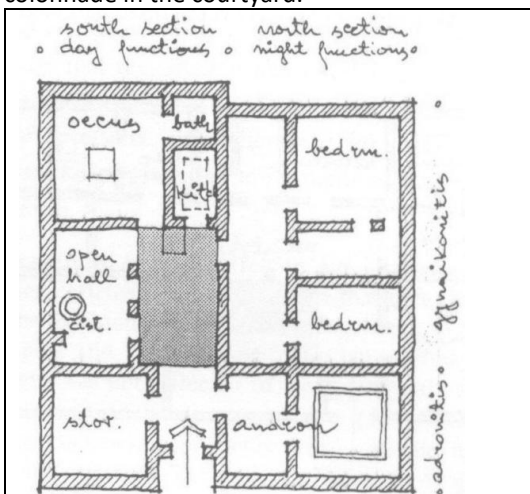


Fig. 14: Greek house showing various lines of division  
(Source: 6000 years of Housing by Norbert Schoenauer)

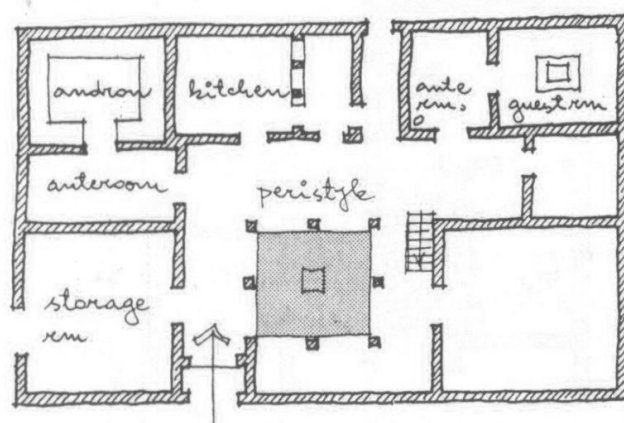


Fig. 15: A typical Peristyle Greek house  
(Source: 6000 years of Housing by Norbert Schoenauer)



The east-facing street facade was a blank wall except for a recessed entrance that did not reveal an interior arrangement. It was a zoned dwelling that separated daytime activities from nighttime activities and the women's sections from those used by the men. The section consisting of an entrance hall, a storeroom to the left, and an anteroom and the *Andron* (reserved for men) to the right was located in the east and closest to the entrance. The remaining portion of the house was reserved for the women and was centred around the courtyard. Principal spaces included a covered open hall facing north, used for eating as well as general living quarters and the *Oecus*, also general living quarters, principally meant for the women, where housework other than cooking was done. It was adjacent to the kitchen and bathroom.

### Roman Atrium House

The typical Roman house, the *Domus*, was a composite architectural hybrid derived from the *Etruscan* and *Hellenistic* house forms. The Etruscan dwelling prototype was characterised by an axial plan with a central hall and open skylight. The principal space of the house was the *Atrium*. Its far end was flanked by two alcoves. At the rear end of the *Tablinum* and accessible through a corridor adjacent to this reception room was a *Hortulus*, an enclosed garden, no doubt affording an admirable vista along the axial sequence starting from the entrance, then through the atrium space and the tablinum, and ending in the small garden.

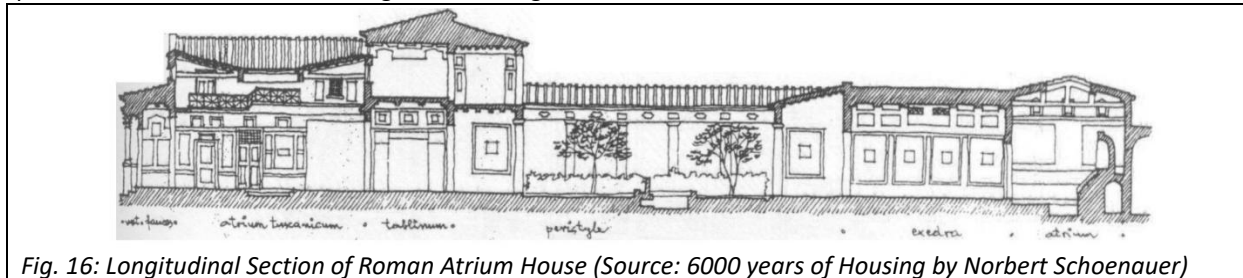


Fig. 16: Longitudinal Section of Roman Atrium House (Source: 6000 years of Housing by Norbert Schoenauer)

The peristyle area was used for family activities and was usually larger than the atrium. The rooms surrounding the Peristyle were the bedrooms (*cubicula*), which had stone slab beds; the dining room (*triclinium*) with couches; recesses for conversation (*alae*); the family reception room (*oecus*); and the kitchen (*culina*) with its ancillary storage rooms. The atrium served as a centre for the more public functions and was surrounded by small rooms and recesses. Some of these rooms were used as bedrooms for the guests, and others were used by slaves. Recesses were used as either reception rooms or conversation rooms. A protective roof, supported on brackets projecting from the wall, gave shelter around the periphery of the atrium.

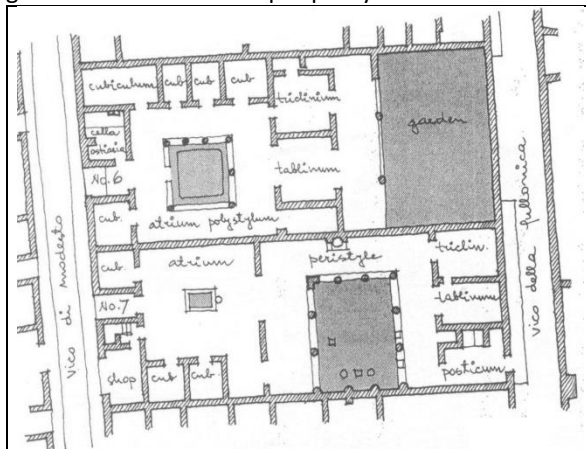


Fig. 17: Two arrangements of Roman house types (Source: 6000 years of Housing by Norbert Schoenauer)

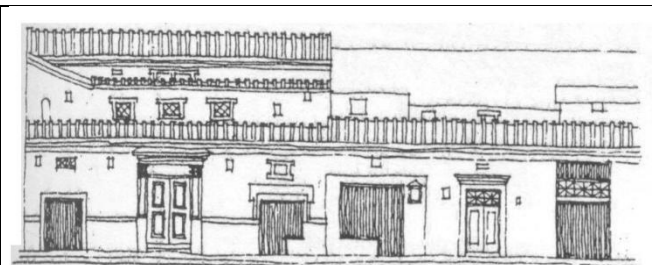


Fig. 18: Street elevation of a Roman house (Source: 6000 years of Housing by Norbert Schoenauer)



### Mesopotamia House

The typical urban house consisted of several rooms around a central court. A reception room, kitchen and other ancillary household rooms faced the courtyard at ground level. In two-story structures, bedrooms and private family rooms were located on the upper floor, also facing the courtyard. Single-floor houses had used the roof as a sleeping platform, while the reception room of the humbler dwellings was used as a bedroom. Small and large homes, presumably occupied by poor and rich families, were intermingled, but the central court and the shielded entry-way were two basic design features that were common to all. Such intermingling is not surprising when the dwelling is inward-looking.

In larger houses, the street entrance door led into a vestibule with a privacy wall. The staircase was immediately next to the entry leading to an upper-level gallery surrounding the court, which served as a veranda for bedrooms on the upper floor. The reception was on the south side of this court, which was linked through an anteroom to the larger family court garden. The main family room with small bedrooms was on the west side of the family court. The southernmost corner was occupied by the bathrooms. The south side of this court gave access to other living accommodations, while the east side probably contained the workrooms of the master. Each of the two main living rooms had two wall recesses with alabaster shelves to support water-filled, porous earthen vessels to cool and humidify the interior.

A medium-sized dwelling had an entrance near the northeast corner and led through a passage into a large courtyard, and on the north side of this passage was a washroom. The north side of the court was occupied by the kitchen and other ancillary facilities, while the west side was a two-room interconnected apartment. The multi-room family suite was located in the southern and shadowy part of the house and hence protected from the heat of the midday sun. The reception room facing the court garden was in the south of the entry passage.

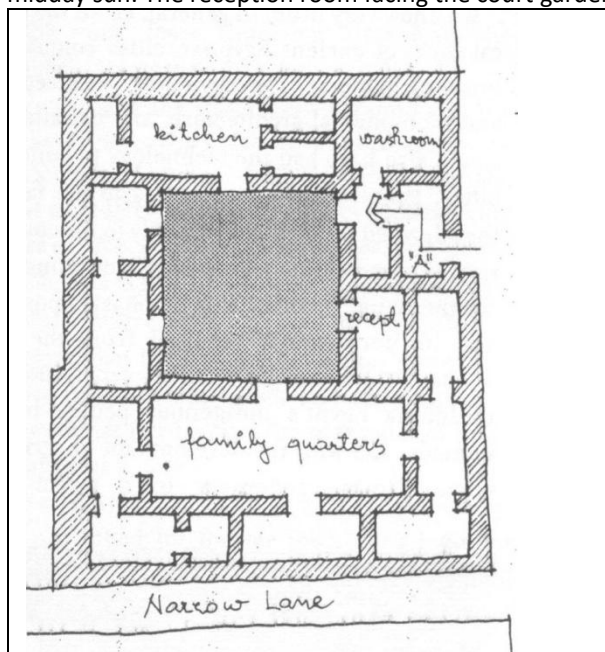


Fig. 19: A Typical Layout of a Mesopotamia court house (Source: 6000 years of Housing by Norbert Schoenauer)

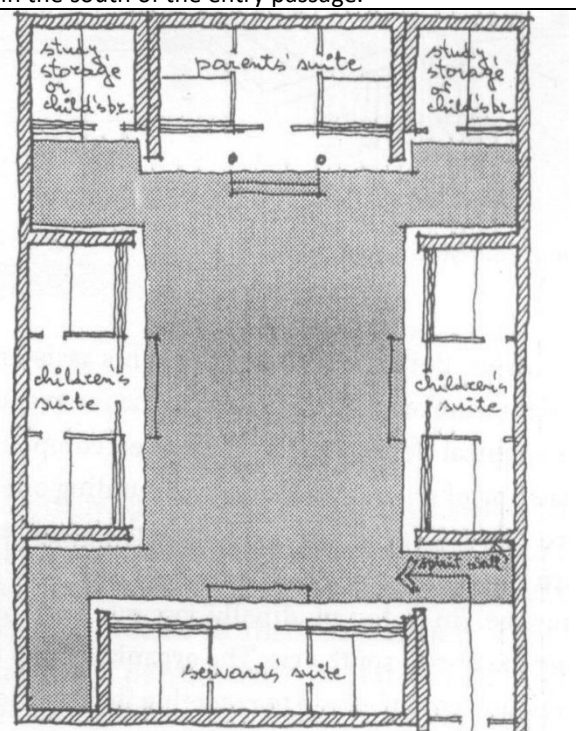


Fig. 20: A Typical Layout of a Beijing court house (Source: 6000 years of Housing by Norbert Schoenauer)



### The Beijing House

The house is a walled compound consisting of several buildings surrounding one or more courts, laid in sequence in a longitudinal symmetrical plan along the north-south axis.

The typical urban house of a richer family was *Siheyuan*, a walled enclosure consisting of four buildings around a quadrangle with a north-south axis. Four buildings surround the central court garden. The main building at the rear of the plot, facing south, was occupied by the head of the family that had the highest status in the hierarchical sequence. The two side buildings opening to the east and west were occupied by unmarried children or by married sons with their families. The least important one was the south building, which was occupied by servants and was used for household functions.

A bay of such structure has usually been a rectangle with a proportion of the width of two to the depth of three. The size of the house was expressed in terms of the number of bays or modules. The door had carved panels, a transom with latticework and transparent paper. Windows had elaborated latticework covered with thick translucent paper. In spring, the papers were rolled up, and throughout the warm season, rooms were open to the courtyard. Portable charcoal braziers supplied the necessary heat for most rooms during the cold season. Kang, the other heating method where there was a raised heated dais extending over part of the room, which was heated from below and served as a sitting area during the day and a sleeping platform at night.

The kitchen space was either a part of the veranda or completely in the open. There were no bathrooms as such; washing and bathing were done in private rooms, and residents used portable basins and bathtubs. The toilet was a small outhouse tucked away in a corner near the street wall that was cleaned every night.

### Jaisalmer Haveli - Indian Traditional Courtyard House

**Entrance:** The typical urban house is attached on sides and at the back with front openings to streets, which has no openings at the ground floor except the entrance door. Near the entrance is an elevated platform or porch, and within the doorway is the privacy wall to block the direct view of inside from the street. The toilets are generally placed next to the entrance. The entrance hall is a spacious room, and it is called *Poli*, which serves as a transitional area leading to the courtyard and sitting room.

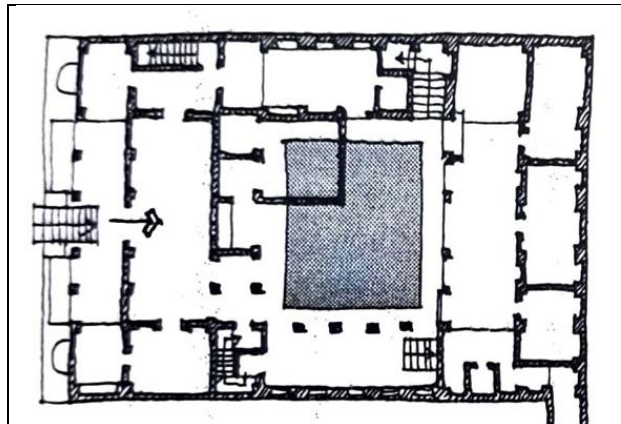


Fig. 21: A Typical Layout of a Jaisalmer Urban House  
(Source: 6000 years of Housing by Norbert Schoenauer)



Fig. 22: Street façade of an urban house in Jaisalmer  
(Source: 6000 years of Housing by Norbert Schoenauer)

**Courtyard Planning:** From the central courtyard, one or two steps lead up to *chaupala* or *pattasala*, the living room, around which several rooms are grouped. One of these rooms is used as a kitchen and the other as a store room or *Ovra*. Women's activities are centred in *chaupala*, where spinning and weaving were also done, and the family took their meals as well as took mid day rest.

**Staircase and Upper Floor:** The staircase located by the side of the *chaupala* connects with the upper floors. The open terrace was used for sleeping in summer, and the *Chitrasali*, with a balcony and arched niches over *ovra*



served the purpose of a bed and drawing room. The adjacent room was for keeping valuables, a money chest, and private records. This room is called as *Medi*.

*Seasonal Functional Spaces*: If there is a third storey, it is a terrace all over with only a room on one side used as a bedroom in the rainy season or summer nights. Most of the spaces change both diurnally and seasonally for their use. In the late morning, kitchen activities are performed in the courtyard; household chores are done here in the afternoon. In winter, cooking is done on the terrace, the space which is used for sleeping on summer nights.

#### ENTRANCE AND SEGREGATION OF ZONES

Location	Entrance	Segregation of Zones
Al Fustat	It had a street entrance door facing a privacy wall to block the view from outside into the house, and a bent corridor to link the entrance hall to the court.	The house is designed around one or two central courtyards and divided into two sectors called <i>salamlik</i> and <i>haremlik</i> .
Cairo	Two street entrances, each with an offset passageway, called <i>Dirka</i> ; one led to the <i>mandarah</i> (public reception hall), the epicentre of <i>salmlik</i> , and the second led into the <i>Hosh</i> or central court garden of the harem.	It had two distinct parts - a formal or public and an informal or private.
Baghdad	The entrance was either through <i>Majaz</i> , an angular entrance hall with a privacy wall facing the doors, square or octagonal domed hall equipped with a second set of doors preventing a direct view from the street into the courtyard. These entrance types were provided with benches on both sides.	Houses were divided into public and private family sections, but it was less rigid. Various spaces of the house were not perceived as living rooms, bedrooms etc., but each space is viewed in the light of its optimum usefulness in different seasons (winter and summer) during the different times of a day (morning, afternoon, evening and night).
North Africa	Entrance is through a Porch or Gateway, with benches on each side, where the family head receives the visitors. The entrance hall is on one of the corners of the plot, shaped to obstruct the interior view from the street, even if the door is open.	Dar isolates its households from outside, sheltered from the public and also from extreme climatic conditions. In case of joined dwellings, one Dar becomes the private or informal domain of the family, and the other becomes the reception or formal area of the household.
Mesopotamia	Entrance is through an oblong vestibule with a privacy wall at its end facing the front door that blocks any direct view from the street into the house. At the far end of the vestibule, adjacent to the privacy wall, an entry leads to the courtyard. Some houses had a double vestibule rather than a privacy wall.	In double houses, one was used as the formal and public dwelling and the second one as an informal and private dwelling. The larger dwelling units had two courts. An entrance court surrounded by housekeeping rooms formed the public ( <i>babanu</i> ) section, while a larger central court garden with the family quarters was the private ( <i>bitanu</i> ) section.
Greek	Access was through a single or double recessed door so as to give shelter and protection to the visitors. Through this recess ( <i>prothyron</i> ), one entered directly or by the way of a short corridor ( <i>thyron</i> ) into the courtyard and was screened by a wall called <i>herkos</i> only if it is contiguous to the street.	The southern part of the house was used for daytime activities, and the northern part, the most private section, reached through a corridor, was used only at night. There were intersecting lines dividing the house, one divided it into a men's and women's section and the other into a day and night section.



Roman	The main entrance to the house had a recess, called a <i>vestibulum</i> , before the inner hallway, the <i>fauces</i> . <i>Atrium</i> was opposite the entranceway and was linked to the <i>Peristyle</i> area by narrow passageways as well as by an open reception room, which could be curtained off.	It had two rectangular court gardens; the smaller called the <i>atrium</i> and the larger, the <i>peristyle</i> while a third outdoor space, a small rear garden was also quite common. The <i>atrium</i> with its surrounding area formed the more public section, while the <i>peristyle</i> section, the more secluded area, was the private or family quarters.
Beijing	A house was a well-protected place with only one opening in the form of an entrance door at the south-east corner of the plot, sometimes with a small porch. A Spirit Screen, privacy shadow wall was in front of the door to prevent a direct view from the street into the courtyard.	A house had graduated zones of privacy. A stranger was allowed to come into the entrance hall only, while guests were invited into the court garden and reception rooms. The very close friends or relatives were allowed to enter the private areas.
Jaisalmer	The only access to the haveli is the entrance door. The privacy wall within the doorway prevents the direct view of the interior. The entrance hall is known as <i>Poli</i> .	The entrance hall serves as a transitional area leading to the courtyard. The living room is accessible from the courtyard. Other rooms, including the kitchen, are grouped around the living room.

**CONCLUSIONS**

The courtyard houses have been designed and built throughout the world with many variations to suit the local culture and traditions. It may be a privacy wall, a bent corridor, an angular passage, another set of doors, a double entrance hall or an entrance hall at the corner of the plot, but all the houses discussed here are provided with some kind of feature to provide a visual barrier between the street and the inner house. Similarly, each house had its own zones of privacy and hence was divided into public and private areas, men’s and women’s sections, and areas for daytime and nighttime activities. The courtyard may have varied scale and form, but it is the central and private open space that remained the most important among all the intrinsic characteristics and attributes of this inward-looking dwelling. It is one of the enduring architectural forms, surpassing regional, cultural and historical boundaries. The comforts offered by a courtyard, such as air, light, privacy, security, and tranquillity, are universally desired for human housing. The courtyard is considered the heart of the house, and its features contributed to the universal acceptance of a courtyard house.

Also, the courtyard housing can be considered as a sustainable form of contemporary low-rise high-density urban housing that has existed for thousands of years in various geographical regions. Therefore, there is a genuine need to increase awareness about the unexplored potential of this kind of house form among the public and decision-makers, through experimental and inventive contemporary projects.

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