Urban Residential Area in Indo-Islamic Context
Case Study - Delhi

Dr. Sarita Dash
Department of Architecture
Meerabai Institute of Technology
Maharani Bagh, New Delhi- 110065

Abstract — **The typical design elements of traditional residential houses are the expression of a culture created by Islam and show an introverted order contributing to privacy. But, generally, through time and tradition and due to the changing requirements of the society, much modifications of the elements of the design have been noticed in the face of modernization to preserve the cultural needs. Are the design elements and the principles of Islamic culture manifested in physical form still relevant and can be linked with the modern patterns in order to satisfy the demands and expectations of the present urban society in a more harmonious way? These are some of the questions to which our effort must be addressed. As the privacy of Islamic family life has always made it difficult to make proper record of houses in their entirety, this is really a big task to generate information in relation to contemporary residential architecture. However, an effort has been made to re-introduce reasonable balance between prevailing socio-cultural values and the urban environment today by analyzing the case-study, South Delhi District – predominantly, a Muslim dominated area near Okhla Industrial Estate. Main emphasis is on the court-yard house and its context in the fabric of the built environment.**

Keywords— Traditional, Privacy, Modernisation, Contemporary, Urban Environment

I. INTRODUCTION

Architecture is the "Poetry of construction and frozen music" as we enjoy at the lay out and look of the buildings which strike deep and solemn chords in our heart. Islamic architecture encompasses a wide range of both secular and religious styles from the foundation of Islam to the present day, influencing the design and construction of buildings and structures in Islamic culture. The architecture of Islamic world has long been admired and the unity of its forms and decoration has been recognized, but a real understanding of the beliefs and life style of the Muslim society and the placement of the Islam architecture in its cultural setting are lacking. Origin of Islamic architecture in India has its root associated with the invasion of Muslim invaders of 12th Century. It was started from Slave Dynasty and gradually succeeded by Khilji, Tughlaq, Sayyid, Lodi and Mughal rulers, who brought their own architectural traditions – styles based on arches, vaults and domes under the forms of floral patterns along with the unique style of writing and painting with mosaics in stones.

Islam as a religion implies an entire social order and a set of rules define all aspects of daily life of Muslims. The Islam court-yard house is based upon culturally defined principles of personal and domestic privacy – unique relationship between the male and the female sectors of the society and the discouragement of the two sectors from intermixing and interacting in the public spaces. This influential role of the particular gender relationship has been a powerful image-maker in the morphology of urban residential environment. A prototype Islamic city, where the urban organization is the physical manifestation of a social system require both segregation of the domestic life and participation in the economic and religious life of the community. The Islamic house is extricably associated with the separation of gender in the domestic space. The constant emphasis on the elements such as visual separation of the court-yard, lattice window and male reception room etc. is indicative of the emphasis placed on the interiority of the house. Distinct changes in the attitudes and life style such as breaking up the traditional joint families into nuclear ones, the rejection of people of the introverted form of houses and limitation of the western way of living, the new technology and expanding commercialization of the old area and the moving out of women have made a great impact on the house form and the manner in which families live. However, the major changes have in a shift from the traditional system of construction and design to contemporary or modern system as a result of the intervention and influence of Western colonial power.

II. RESIDENTIAL ARCHITECTURE IN RELATION TO ISLAMIC PRINCIPLES

Distinguishing motifs of Islamic architecture have always been ordered repetition, radiating structures and rhythmic metric patterns. In this respect, fractal geometry has been a key utility, especially for mosques and palaces. Other significant features employed as motifs include columns, piers and arches, organized and inter-woven with alternating sequences of niches and colonnades. The concept of Allah's infinite power is evoked by designs and repeating themes which suggest infinity. Islamic architecture has been called the "Architecture of the Veil", because the beauty lies in the inner space(court-yards and rooms) which are not visible from out-side(street view). The morphology of residential architectural space is inseparable from its social significance. The principles of Islam are reflected in human attitudes, social rules of conduct, individual pattern of behavior and materialize in related physical forms. The study of the beliefs, life style of Muslim society and the placement of the Islamic architecture in its cultural setting is quite important to understand the urban residential area and the design elements of the Islamic dwelling units.

Muslims claim to be adherents of the Islamic faith, its doctrines, precepts and practices which is supposed to be universal. The well-known five fundamental religious duties,

which are commonly called "Five Pillars of Islam" are :- Shahada – attestation of faith i.e belief in God and his prophet Mohammad, Salat – prayer five times a day facing Mecca, Siyam – holding 'Roza'(fasting during Ramzan), Zakat – giving 1/40th of one's wealth every year as charity, Haj – piligrimage to Mecca. Islamic Law "Sharia" literally means "the board road" i.e. man will reach the divine presence by walking carefully on the road of the law "Sharia". It implies an entire social order and a set of rules of conduct virtually encompassing all aspects of life. The notion of "Umma" is a distinct feature of Islamic community based on faith. All members of Islam share a common faith, a common view in life and have a common aim to live together as an "Umma". Another important aspect of Islamic community is "Ulama", which constitutes of people, who specialize in literature, law and doctrines of Islam. Their duty is to preserve the knowledge of the divine will and to sustain the community and give it religious and moral guidance. In Islamic society, the residential quarters have intimately-bonded communities, accommodating extended families and clans, who are brought together by a cohesive culture and its beliefs and systems. Broadly, it is divided into two social groupings :- Khassa – educated wealthy stream of respected lineage, occupying positions of temporal and spiritual authority, Aamma – the majority of urban and rural humanity.

A. Urban Settlements

Islamic urban settlements are neither fortuitous nor amorphous. They reveal a certain hierarchy of spaces from public to private. Off the main central bazaars (domain of men), central streets(Jada) of different quarters(semi-public) are branched out. Off these streets, the narrow alleys(cul-de-sac) are branched out onto which open the doorways of individual dwellings that are women domain. This network further connects to local Mosque and public bath, ultimately leaping beyond to the sub-urban gardens, shrines fields and orchards. The residents of a quarter most often extend their contacts in all directions to include their back to back neighbors. However, the quarters are not architecturally emphasized and are linked with the neighboring buildings of the adjacent quarter. Sometimes, a city quarter may occupy a single street inhabited by a homogeneous group who have come together under similar circumstances.
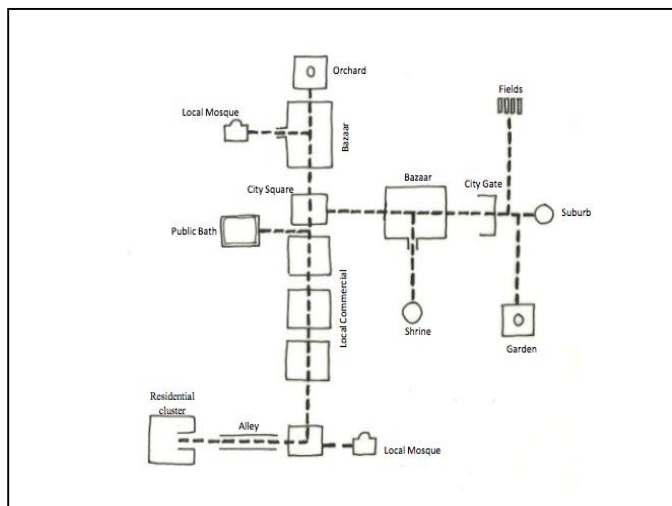
B. Court-yard house

In Islamic architecture, the court-yard is the most characteristic element in all buildings. It is a symbol of life and the center which attracts all other architectural elements. The Muslim home generally is built around a central court-yard, that is well protected and isolated from the street. Privacy, therefore is maintained through the utilization of the interior court-yard without outside exposure. Many functions and celebrations of important family occasions and annual religious fields are usually held in the court-yard. The court-yard also performs an important function as a modifier of climate in hot arid areas. It services both as light-wells in a building type that restricts exterior window area and as air-wells into which the cool, dense night air sinks. The rooms of the Islamic court-yard house surround the court-yard and open to it. The public area is the men's reception room that tends to be located adjacent or directly accessible from the entrance lobby of the house so that male visitors keep away from the family and women's area. Usually, the reception is the most decorated room in the house. Big houses show a distinct separation of the male quarters (salamlik) and female private space (haramlik). Another family reception room separate from the men's room is often provided. However, most interior spaces are functionally non-specific, rooms can be used interchangeably for living, sleeping and other domestic tasks. The room directed to the north are used in Summer for living whereas the southern ones are used in Winter for living. The semi-outdoor covered open spaces like (loggia) are used as open living rooms during the year except in Winter. They also perform as intermediate spaces between the court-yard and inner family space. The service area i.e. kitchen, bathroom and toilet most often is located in any dead corner far away from the entrance of the house.

While the internal facades of the Islamic traditional house are rich with openings to draw light and ventilation from the court-yard, the street facades of the ground floor are plain walls and the only opening is the entrance portal. If there were any openings in ground floor, they were small, grilled and above the vision of passers-by. The second floor external facade has oriel window (Masharbiya) covered with wooden screens to ensure day-lighting and air-flow while maintaining a developed protection of internal privacy. Generally, the Islamic court-yard house is considered to be an earthly paradise with its natural plants and the fountain. Spacious court-yards of wealthy town houses with interior gardens are richly paved with stone or tiles and lushly planted. Even in the poor houses, the court-yard may

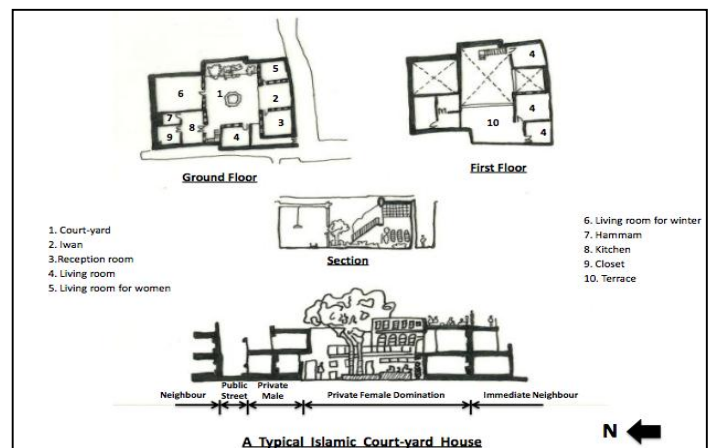Fig 1: Diagram of Circulation System of Islamic Urban Settlement

Fig 2: Layout of a typical Islamic Court-yard house

contain some trees. Thus, it can be concluded that living in a court-yard house provides visual and acoustical protection to the members of the house-hold and necessitates the interdependence among neighbors

III. CASE STUDY - DELHI

Residential buildings have undergone changes and transformations from time to time. Different residential units show differences, at the same time they also show the relevance of traditional elements. The court-yard which was an indispensable element of traditional home life was rejected in early 20th century and disappeared. A central hall or a family room as a psychological replacement of the court is found in the modern houses. In some places, an analogue to the inner court-yard in modern houses is the balcony space. The entrance corridor in the traditional house has now disappeared and taken a different shape in modern house in order to maintain some measure of privacy. Principle of keeping guest room still close to the entrance in modern houses represents a unifying aspect between the traditional and modern forms. Besides this, the bedrooms are still located away from the guest and living area, where as the service area like kitchen, toilet etc. have become more important and have been given better treatment. The placement and treatment of windows have become totally different and the outward openings are reversed from the inward openings.

To trace the modifications of the design elements, sample residential areas have been selected from South Delhi District and the emphasis is done on the court-yard house and its context in the fabric of the urban environment. Based on visual observation and interviews, the analysis has been done and finally the apparent changes in the elements of design which are reflected in several ways in the residential area built today, are defined.

Delhi is situated in north central India on the west bank of Yamuna River. Among its ancient cities Indraprastha, Lal Kot, Siri, Tughlaquabad, Firozabad, Dinpanah, Walled City Shahjahanabad are quite remarkable. There are nine districts in Delhi as shown in map. Okhla is a neighbourhood around the old village South Delhi District with near by areas now as its own parts like Batla House, Zakir Nagar, Zakir Bagh, Jamia Nagar, Abul Fazal Enclave, Shaheen Bagh, Noor Nagar, Haji Enclace etc. dominated by Muslim people.

In 1302 A.D. Mughal ruler Ala-ud-Din Khilji built a new capital for himself at Siri. Ghiyas-ud-Din Tughlaq in 1320 A.D. moved south and built the fort city Tughlaquabad. In 1334 A.D. Muhammad Shah Tughlaq built his city in South and gave the city name 'Jahanpanah'. His son Firuz Shah Tughlaq created his own city 'Firuzabad' in 1351. The impact of the above is well observed in South District, predominantly in Okhla Estate. Two types of sample quarters :- pre-colonial more or less traditional, post-colonial contemporary or modern houses from Zakir Nagar and Batla House area have been selected for case-study. Both the areas have undergone drastic transformations which has resulted in the major destruction of the traditional urban fabric, but both exhibit to a great extent a number of common features which are "Typical Islamic" such as:- (i) Highly labyrinthine character (ii) The hierarchy of spaces on all levels (iii) The separation of public and private spaces.
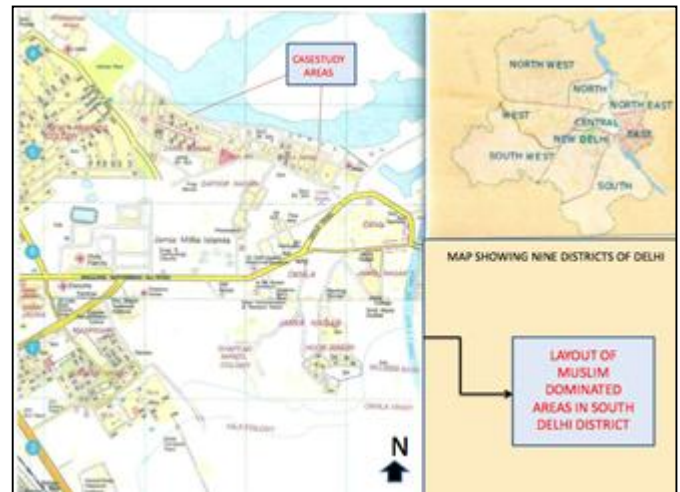

Fig 3: Lay Out Map of Delhi showing case-study areas

A. RESIDENTIAL AREA WITH TRADITIONAL HOUSES :-

Lay-out :- Residential area having traditional type of houses is directly adjacent to the bustling mosque. Buildings are densely clustered together and there is a network of galis, branching off from the main streets and penetrating through the interior of the clusters. The galis are either dead ends or connect to the other galis through chowks. The chowk is often no more than a widening of the street as it turns a corner at the junction of two or more streets. The very compact house with high density low rise buildings are arranged in a manner of hierarchy of spaces, integrating the units into meaningful design, protecting from excessive sun-rays, providing privacy, security and a suitable atmosphere for human interaction with usable common spaces. The hierarchical order of spaces from public to private is continued further to the level of dwellings, where the court-yard is a nodal point and the center of the house. The pattern of front road unit and rear service is also seen. Most of the area have densified over the years with increased ground coverage on the plots as well as vertical growth up to three to four storeys.

Neighborhood :- Commercial facilities and shopping locations are congregated on the periphery of the area and get reduced towards the interior, where the use becomes predominantly residential. Public recreational facilities or open green areas do not exist. The residents are unhappy with the existing environment and also complain about the lack of parking places in the area. Hotels and guest houses are also available as new constructions above the commercials shops of the main roads surrounding the area. All public spaces are the domain of male residents. But, behind the blank walls, screens and barred windows are large or small court-yards which are the domain of women. The potential of the court-yard with each building is best utilized for outdoor activity. Most court-yards are being utilized for washing and drying of clothes, storage or as an extension to the living space. However, based on observations residences do show a strong attachment for the traditional neighborhood due to the strong feeling of privacy and security. During the field study, most people were telling about the co-operation between neighbors and help during sickness, accidents and other calamities. But, they complain very much regarding the invasion of the commercial activities, the congestion and the open drainage system.

Design Elements of Houses :- Initially, dwelling units were single storeyed built on small plots with front set-back space acting as a front-yard and a transitional area between the dwelling unit and the street. In most of the houses, internal court-yard which is the characteristic of the traditional house is replaced by front or rear yard that provides light and ventilation.

i. Entrance :- In most houses, the entrance door is arched and decorated not giving immediate access to the domestic space, but, it leads to a lobby. In some cases, the entrance lobby has a stair-case leading to the first floor without invading the privacy of the ground floor inhabitants. In most cases, there is no entry hall, the entrance door opens immediately into guest and living room. Entrance hall acts as a central space to distribute movement between the spaces of the house. However, entrance to the other floors are approached through a stair-case which is mostly placed in the narrow corridor which was originally connecting the front-yard with the rear-yard. In some cases, living room accommodates the function of the entry hall. This dual function of the living room creates problem related to privacy.

ii. Central space and open space :- In big houses, a verandah is attached to the court-yard "Aangan", which has two divisions. The outer portion is 'Daalan' and inner portion 'Dar-daalan', which is less open and more private. In most houses, spaces are available in a form of front and rear yard, where the ground floor people make advantages of them as an extension space of the house. Front-yard is used as a parking, where the rear-yard is used for many domestic activities due to its private location away from the public road. First and second floors are only opened to narrow balconies facing the street.

iii. Rooms :- Every house normally has one reception room 'Baithak' which is large enough to entertain visitors. It tends to be located adjacent to and directly accessible from the entrance lobby. In some houses, there is no separate guest room, but the father or grand-father's room often located near the entrance is used for reception. A living room is provided in addition to reception room for entertaining visitors by the females in particular. The bedrooms are generally located in the rear and sometimes they do not have light or ventilation.

iv. Service area :- Normally kitchen is located in the rear-yard or center of the house, which is accessible from the central corridor or court-yard. Bathroom and toilet are located away from the public area of the house, but in some cases, in entrance lobby to be easily accessible by guests. Mostly service areas are accessed from the inner court-yard or from terrace in first floor and considered as private spaces.

v. Openings :- Internal facades are full of carefully designed windows, where the external openings on the outer facades are few and high, unless they are the windows of a male guest room. Many balconies are covered with screens to provide privacy for the users and not to be seen from outside.

Modifications :- Mostly, the traditional court-yard houses in residential areas are now breaking under the pressure of traffic, high density population and mixed land use, each of which is pushing the residents out. Many residential streets and court-yards are becoming parts of bazaar and store houses. Modern brick and mortar structures are systematically replacing the traditional building components and sometimes the complete structure. But, the characteristics of the new houses resulting from the portion of the big houses are still inherent in :-

(a)Court-yard type houses (b)Architectural elements directed inwards (c)Independent units with independent entrances, which emphasizes privacy of the house-hold. The traditional elements of the house design are strictly preserved and show an introverted order contributing to 'Privacy' in Islamic Society.
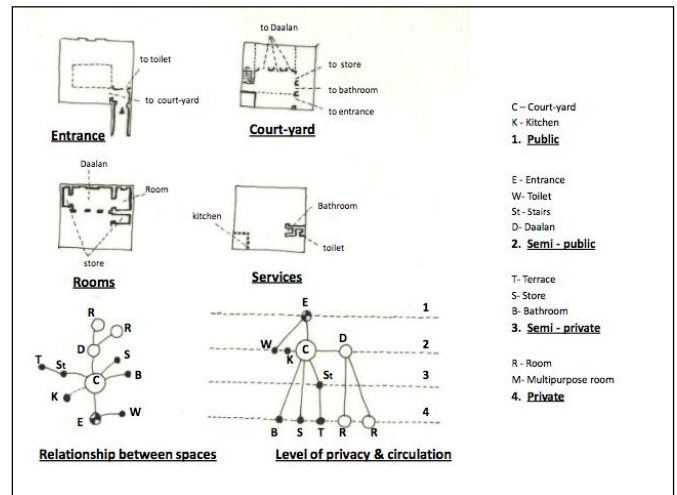

Fig 4: Design elements of a traditional court-yard sample house

RESIDENTIAL AREA WITH CONTEMPORARY HOUSES

Lay Out :- Lay out plan follows traditional methods of creating shade and cross ventilation and attempts to solve the contemporary problems of parking and vehicular movement. The peripheral roads are connected to cul-de-sac parking squares. The central spine of the layout is served by narrow, shaded pedestrian pathways which weave through a variety of semi-public enclosures. In keeping wiyh the nature of the society, a sense of traditional Indian cities is introduced through a series of court-yards, which are accessible from within the building cluster.

Entrance :-The entrance vestibule or front-yard of traditional house is disappeared and replaced by stair-case lobby. The entrance door of the residential unit leads from the stair-case lobby in upper floors or from the covered passage in ground floors immediately to the guest room.

Central and open space :- The residential units are characterized by a central family hall located in the heart of the house, functioning as a multi-purpose space and a circulation space leading to all spaces like guest, sleeping and service spaces. Balconies are treated in a way to provide proper privacy and are not located above each other and are not overlooked by neighbors or passers-by. Each one is given a double single height. In ground floor, a private garden or court-yard is provided with an eye-view level wall and with double high ceiling.

Rooms :- In most of the houses, the guest room is directly accessible from the main entrance door and leads to a family room and then to the rest of the spaces. The residents are not happy about disturbing guests while using the room as the passage to get out or into the house. Where as the residents are happy about the family room, which they use for getting together and for many domestic activities as an alternative to the court-yard of the traditional house. In some houses, the family room and guest room are clubbed together into a single space. To provide privacy for the living area, light materials like

wood screen or pieces of furniture have been used to separate the living space from the guest space. Bedrooms are mostly located farthest from the main entrance followed from the living space through a corridor or a small hall.

Service area :- Almost in all houses kitchen, bathroom or toilet are situated in two separate locations accessible from the living room. Kitchen is separated from bathroom and toilet, which are related to a utility space having a wash-basin. It is observed that residential areas are based on a deep understanding of the traditional social value and also in respect of contemporary needs. High satisfaction of the residents are observed about their built environment indicating the validity of the traditional concept and value. Absence of public entrance and combining guest area with the living room has made it difficult to achieve privacy. People behave in a way that reflects their social and cultural values, hence they are controlling the house spaces to provide different levels of privacy.
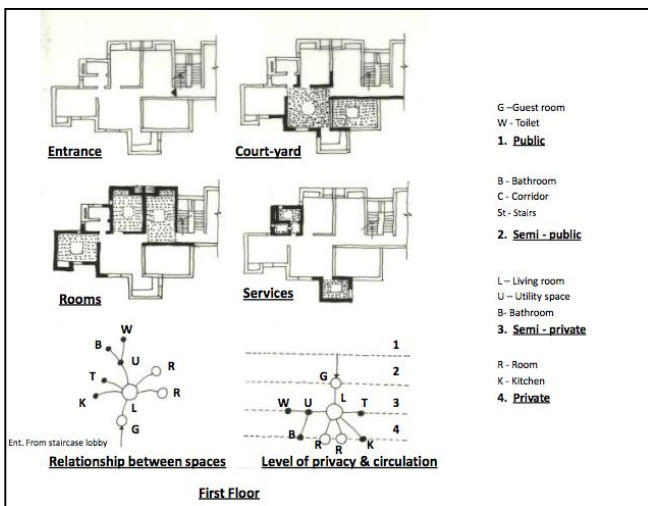

Fig 5: Modified design elements of a contemporary sample house

B. INTERPRETATION

i. In traditional area, the court-yard buildings are densely clustered with network of 'galis', where in areas having modern houses, a sense of traditional urban fabric has been introduced by method of shade and cross ventilation, a series of court-yards and covered passageway.

ii. The overhanging second storey that span over the street in traditional area has disappeared in modern area. Parking vehicles in traditional area in narrow streets is a major problem, where in modern houses cars can be parked on the front court-yard or in parking area available inside the cluster.

iii. Traditional court-yard houses were originally two or three storeyed high occupied by joint families. But, now they have been divided into many smaller units due to break up of joint family as people are opting for individualistic existence in a nuclear family. Modern dwelling units originally were on small plots and single storeyed, but, later densified by increasing ground coverage and vertical growth up to three to four storeyes for rent or sale purpose as a source of additional income.

iv. The court-yard 'Aangan', which is an indispensable element of traditional home has been rejected to satisfy contemporary needs. A central hall or a living room is the replacement for this in modern house.

v. The entrance of the hall has considerably receded from the street and is approached only through the front-yard sensing as transitional area, where staircase and lift are serving as cul-de-sac.

vi. Specialization of space has become a significant trend in residential units built today. In traditional houses, rooms are used simultaneously for eating, sleeping, recreation or other domestic tasks, where in modern houses different domains are defined for various remarks of family such as parent bedroom, kid's bedroom, guest room etc. Built-up furniture has come back in new houses in an up-to-date manner providing convenient and clean storage space. Kitchen in traditional house is located in one corner. But, in modern houses, it has been shifted to a place within the house almost at center and provided with modern gadgets and fittings. The bath and toilet are also within the house with easily maintainable cleaner arrangements and efficient system.

vii. The court-yards in traditional houses has become economically non-viable due to high land prices and its unsustainability for renting out purposes in contemporary houses. In addition, there are a set of building bye-laws, that has decided the building envelope on the site. Again, the role of the court-yard as a natural cooler and regulator of the micro-climate has become insignificant due to the use of coolers, air-conditioners etc. as impact of new technology.

viii. The need of introverted traditional houses to keep the women secluded and confined inside is becoming insignificant as the moving out of women for their education and search for greater challenges has a profound impact on society. So, now-a-days, the houses are becoming more extrovert, but, at the same time, they are characterized by emphasizing privacy and traditional design elements.
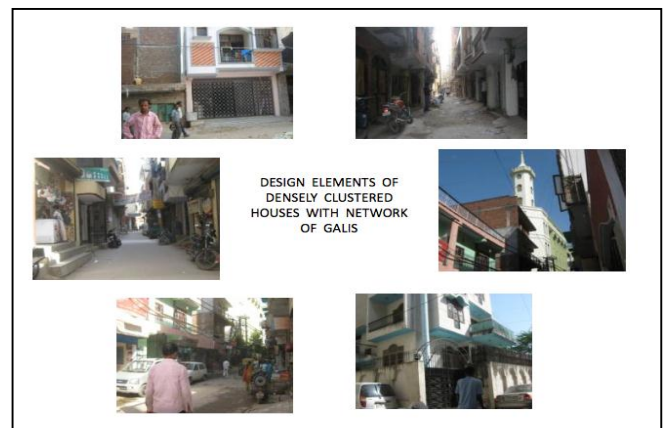

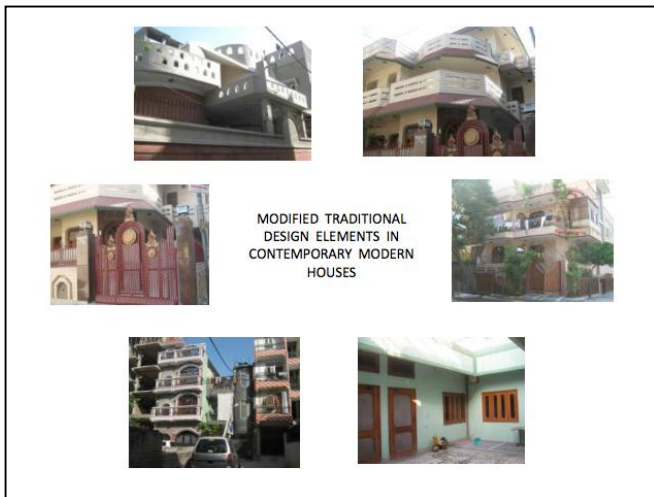Fig 6: Residential area with modified traditional houses

MODIFIED TRADITIONAL DESIGN ELEMENTS IN CONTEMPORARY MODERN HOUSES

Fig 7: Residential area with contemporary modern houses

IV. CONCLUSION

The traditional solutions have promoted the introverted residential pattern and incorporated social values. People have modified their houses to suit their cultural norms. The modifications are striking as an indicator of conflicts between the new built environment and the people's needs and culture. As for the areas which have developed in the recent past and have the sense of tradition in very up-to-date manner, they confirm to the continuity of a time honored tradition which brings life to the community and helps to develop new identity. The traditional elements are not outdated, they are linked and still valid for the present Islamic Society. Privacy was and is still remained as the main concern of Islamic Society. The elements of design have undergone drastic change. Still such elements are called Islamic? Yes, if we refer to these elements not in a physical sense, but, rather in a purely cultural and social context because the physical and material standards are susceptible to modification and change. Understanding the complexities of the residential fabric of Islamic Architecture is a fundamental requirement for development and designing for the future. If neglected, that will cause disruption of culture which has been inherited by generations and lasted for centuries. For contemporary life, progress and transition are necessary and should never create a gap between the old and new, but should be a continuation providing healthy and peaceful environment.

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