

Cross-Cultural Influences in Traditional Residential Architecture of North Western India (15th – 20th Century)

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Abstract - North western India, with present day states of Gujarat, Rajasthan, Delhi, and some parts of Punjab, Haryana and Uttar Pradesh, comprises different cultural zones which have been interacting with each other over centuries. Cultural exchange of traditions and knowledge systems as well as art and architecture is prominently visible in building typologies. Natural setting, socio-economic and political scenario; cultural practices and traditions; and artistic expression of an area or region, are all reflected in architecture of the place and provides with an opportunity to understand human society of a particular time period holistically. Residential buildings of different scales, developed in different parts of this zone have similar concepts like single or multiple courtyard houses. Concepts and designs have travelled across regions with patrons as well as craftspeople, which has led to evolution of residential architecture of the region.

This paper has been focused on various aspects of these cross-cultural exchanges, which led to development and evolution of residential architecture in North western India during the 15th to 20th century CE. Study and analysis of examples of residential buildings and complexes from each zone, like Quila Mubarak in Patiala, Punjab, Kothi of Quila Mahmudabad, Sitapur, Uttar Pradesh, Pol House in Ahmedabad, Rampuriya Havelis of Bikaner, Rajasthan and the Gyan Gopal Ji ka Mandir in Pushkar, Rajasthan, have been done for this research.

Key Words: Culture, residential architecture, North-western India

1. INTRODUCTION

The states of Punjab, Haryana, Rajasthan, Gujarat, Delhi, Uttar Pradesh, Uttarakhand and Madhya Pradesh are different geographical regions with distinctive cultural regions within themselves. These cultural regions within North western India have some similarities in their cultural, and ethnological parameters like language, religious beliefs, cuisine as well as in their art and architecture. Gujarat, Punjab and Haryana, Rajasthan, Delhi, western Uttar Pradesh and northern Madhya Pradesh are different cultural zones in themselves. However, there has been cultural exchanges observed between these zones due to various factors like their proximity, similar social, cultural and geographical settings. Additionally, their rulers who would have built in different parts of this region with similar designs carried by craftspeople and their knowledge systems also contribute to this pattern of cultural exchange. These cross-cultural

exchanges are reflected in architecture of these places and helps to understand the evolution, hybridity and loss of architectural elements in different cases and their variations and adaptations according to different zones due to factors like climate and availability of materials. So, the whole region mentioned above has been delineated as study area and referred as 'North western India' in this paper, as marked in the map below.



Fig. 1 Delineation of area of study

1.1. Objectives, scope and limitations of this research

The study has been focused to identify cross-cultural influences in evolution of residential architecture of North western India during 15th to 20th century CE as well as various concepts and principles associated with them. Case studies of residential buildings of different scales has been done to understand variation as well as influences of different cultural zones in the residential buildings. Planning of residential buildings according to needs and activities of users of different communities in different areas has been studied to identify the similarities and differences in these buildings, if any. Architectural elements like *Jharokha*, *otlas*, ornamentation of structural members, variation in materials of construction according to natural setting and availability of materials have been studied to understand the differences as well as the similarity of architectural vocabulary of different areas.

Cross-cultural study primarily depends upon dimensions like, geographical scope of comparison, size of samples, nature of data in terms of preliminary and secondary sources and dependence on validity of data on a particular

time period or not [1]. The research methodology adopted here, hence, have been defined in geographical scope, with single samples from each case, studied on basis of secondary data mostly, except for samples selected from Gujarat, Rajasthan and Delhi. Also, this study has been done within a particular defined time period, to understand patterns of cross-cultural interactions within 15th to 20th century CE.

2. TRADITIONAL RESIDENTIAL ARCHITECTURE OF DIFFERENT ZONES WITHIN NORTHERN INDIA

Residential architecture and its typologies reflect the overall socio-political and economic condition of a city or town. Hence, the scale and patronage of historic buildings helps us to understand social hierarchy and development of residential areas in North Indian towns during 15th to 20th century CE. Historically, types of residential units in the region were according to geographical setting and climatic context; and the scale of these units varied according to social and economic status of patrons and/or owners.

The residential units varying according to social hierarchy in different zones of study area (with existing samples on site for analysis) is summarized as:

2.1. Rajasthan/ Northern Madhya Pradesh/ Punjab/ Haryana

2.1.1. For kings/rulers/ royal families

- i. **Gadh or Fort or Quila for kings/rulers/ royal families** — Palace with thick and high fortification walls for royal family built on top of hill, strategically located for surveillance of town as well as for defense against any attack. [2]
- ii. **Mahal or Palace for kings/rulers/ royal families** — Palace with high fortification wall built on ground level (unlike *Gadh* or Fort which was built on hill top of strategically higher ground).[3]

2.1.2. Haveli for noblemen and royal employees — Courtyard houses with introverted planning, varying in scale with number of courtyards from one to 8, these houses were for different sizes of families including royal employees and public.[4]

2.1.3. Haveli or Makaan for Common man — Courtyard houses of smaller scale.

2.2. Uttar Pradesh/ Delhi

2.2.1. Fort and Palace for kings/rulers/ royal families — Large residential complexes with fortification walls, either on hills or on plains.

2.2.2. For noblemen and royal employees

- i. **Haveli** — Palatial residences with multiple courtyards and spaces defined for owners' living areas and a service as well as servant's quarters.
- ii. **Kothi** — Large residences of noblemen and merchants with or without courtyards, mostly the headquarters of residential complex

2.2.3. Haveli or Makaan for Common man — Courtyard houses of smaller scale.

2.3. Gujarat

2.3.1. Fort for kings/rulers/ royal families — Palace with fortifications for royal families, strategically located on safe locations like hill tops, foothill etc., developed majorly during early 15th and 16th centuries during the political tension between Ahmad Shah, Delhi Sultanate and Malwa.

2.3.2. Haveli for noblemen and royal employees — Courtyard houses of different scales built during 17th to 20th centuries, mostly by wealthy businessmen and merchants, varied in size and grandeur according to economic and social status of patrons.

2.3.3. Pol house for Common man — An integral part of community housing, these are smaller courtyard houses organized in dense neighborhood consisting of a set of dead-end streets entered through single gateway, meant for small businessmen and other commoners developed during communal riots and civil disorder during 18th century.[5]

3. CASE STUDIES

According to factors mentioned for cross-cultural analysis of different elements in earlier section, scale of samples (sizes of residential typologies) studied and compared establishes an important aspect of research. Hence, case studies have been selected to understand similarities and differences in cross-cultural exchanges between zones within one cultural region and identification of indicators of transformation in different zones of varying architectural scales. The case studies of Man Mandir Palace, Gwalior; Qila Mubarak, Patiala; and Kothi of Qila Mahmudabad, Sitapur, Uttar Pradesh have been done with help of secondary sources and case studies of Mungewali Haveli, Shahjahanabad, Delhi; Pol Houses of Ahmedabad; Bohra Kunj, Pushkar and Bhanwar Niwas, Rampuria Haveli, Bikaner, Rajasthan have been done with help of primary data collected during different visits to

these sites over a period of last five years. An attempt at selection and comparison of residential buildings of varying scale as well as typologies have been done for analysis of cross-cultural influences across all scales and typologies. Also, case studies have been discussed chronologically to understand evolution with time. The following elements and features have been analyzed systematically to compare them:

- Historic Evolution (Socio, economic, political and cultural scenario)
- Location, site setting and climate responsiveness
- Relationship with the neighborhood
- Spatial planning with respect to socio cultural practices
- Construction system and techniques
- Manifestation of cross-cultural influences in architectural vocabulary (in elements like columns, arches, brackets, *chajja*, overhangs and ornamentation bands)

3.1. Man Mandir Palace, Gwalior, Madhya Pradesh

Man Mandir palace is one of buildings in Gwalior fort, built during late 15th century CE by Raja Man Singh Tomar. After 12th century Muslim invasions in the country, most of the North western part was in a political turmoil. Gwalior, which had earlier been ruled by *Guptas*, *Hunas*, *Pratiharas* and *Kacchawas*, was also captured during Delhi Sultanate's rule, and later reclaimed by *Tomars* in late 14th century CE. Located centrally in the country, Gwalior was vulnerable to any attacks from all sides, as well as had opportunity of much cross-cultural influences, especially in art and architecture. Around the time, Man Mandir palace was built, a fusion between indigenous and Muslim art and architectural styles and techniques must have had already started, as was noticed in Man Mandir.

Earliest structures of Gwalior fort had been built around 5th century CE on a flat plateau of Vindhyan range, and has multiple layers of construction in form of temples and Jain rock cut sculptures. The Man Mandir Palace, which was the first palatial construction of this fort built during Raja Man Singh's time, was located towards the northern end of the fort complex. It was positioned considering the need for King's surveillance of local's settlement on north eastern slope of the hill as well as climatic consideration of light and ventilation with series of *jharokhas* and overlooking pavilions.



Fig 2 Plan of Gwalior fort drawn during 1911, showing location of Man Mandir Palace

Designed around two courtyards, with corridors on ground floor level, residential rooms on upper floors and rooms with water structures and relevant functions, the palace was an extraordinary seven storey building with extremely distinct construction techniques and artistic impressions of that time.

Construction system with sandstone shows a beautiful amalgamation of local roofing systems like flat slab roof supported by brackets in some chambers, and improvisation of Islamic vaulted roofing systems but with local construction systems as inspiration. Entire structure of palace, is otherwise, supported on columns and beams with brackets supporting in places required.

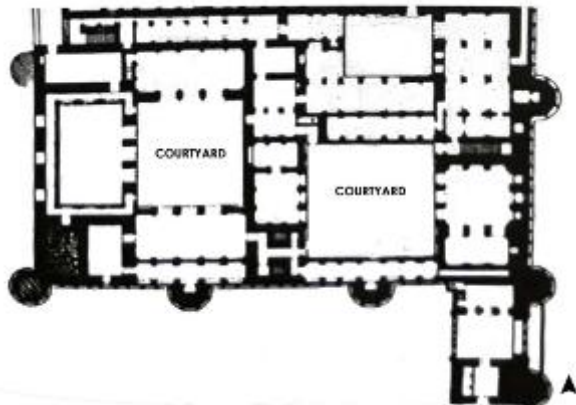


Figure 3 Layout of Man Mandir Palace



Figure 5 A stage or *Manchika* along terrace overlooking the courtyard in Man Mandir Palace



Figure 4 An example of improvised roofing system, with inspiration from vernacular roofing systems (Source: Google earth Photos)

Basement floors, with excellent construction techniques considering the importance of light and ventilation in form of ventilators and *jharokhas*. Water tanks and water channelizing system suggest inspirations from the earlier water structures like *baolis* existing in the fort only. The floors above ground floor consist residential rooms and stages along terraces overlooking courtyard. These stages would provide privacy to onlookers from being seen themselves —Concept similar to both i) local social traditions where female quarters were planned for privacy as well as surveillance of activities within building, and ii) the concept of planning separate *zenana* (female) and *mardana* (male) areas followed in Muslim traditions.

The most interesting part about this palace is the various cross-cultural influences visible in elements like overlooking *jharokhas* and *chhatris*; in ornamentation like glazed tile work finishes and hybrid animal brackets. These can be attributed to inspirations from art and architecture of hinterland, local art and folk as well as from different architectural styles and artisans that came into India with the Muslims. Use of arch along with traditional load transferring system of beams and lintel is seen here. It could be attributed to Islamic influence on the local architectural construction system. Massive columns with corbels and brackets present along courtyards was a very distinctive feature of this palace. The brackets in shape of hybrid animals (lion's body and elephant's head) seems something inspired from folk art and paintings of the region and the *chajjas* seems to have been inspired from *Khaprel* (mud tiles used for roofing) roofing system in vernacular tradition of India as well.

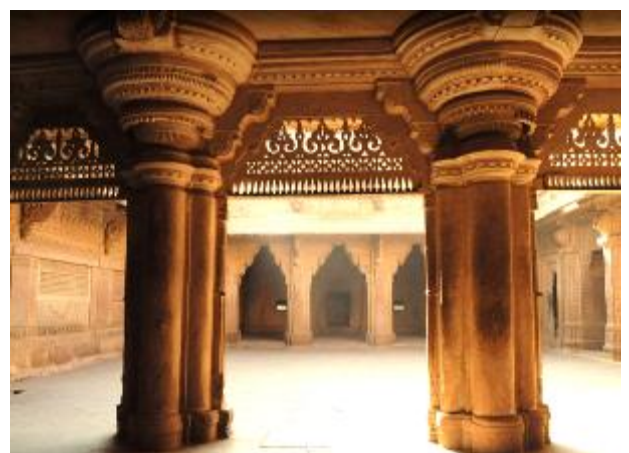


Figure 6 One of views of courtyard in Man Mandir Palace showing massive columns and corbelling (Source- Google Earth)



Figure 7 View of one of sides of courtyard in Man Mandir Palace showing the massive columns along with arches supported with beams, a combination of architectural construction systems (Source- Google Earth)



Figure 8 Image showing massive brackets supporting *chajja* in courtyard of Man Mandir Palace (Source- Google Earth)



Figure 9 Image showing hybrid animal shaped brackets in courtyard of Man Mandir Palace (Source- Google Earth)

Use of coloured tiles work for decorations in both interior and exterior facades of the palace, was something, which could also be attributed to the Islamic influences from ornamentation used during late Delhi

Sultanate (Lodi period) building constructions. The mosques and small tombs built near Hauz Khas tank during late 15th century showcase this feature. In fact, there are a few mentions that Muslim artisans, who had come to India during Delhi Sultanate's rule, would have helped in achieving excellent finish of glazed tile work along with local artisans for both tile work and stone carving. The motifs used for ornamentation are both geometrical like in Islamic buildings and natural icons and patterns like animals present in earlier buildings in India built by non-Islamic patrons. [6]



Figure 10 Exterior facade of Man Mandir Palace with coloured tiles used for decorations (Source- <http://anarchytect.blogspot.in/2013/01/gwalior-man-mandir-palace.html>, accessed on 4th April 2018)



Figure 11 Ornamentation done with help of coloured tiles in the interiors of Man Mandir Palace (Source- Google Earth)

Interestingly, this is one of the few buildings in India, which had influenced design of palaces and forts built by Mughals, especially Akbar [7]. This use of glazed blue or yellow tiles, later influenced Mughal residential architecture of all scales, as inlaid mosaic facades were an important part of ornamentation in houses during subsequent time period.

3.2. Pol houses of Ahmedabad

Ahmedabad was found in 1411 CE along eastern bank of river Sabarmati, by Ahmed Shah at a location close to then important trading centre of Asaval or Karnavati [8]. The city was located on major trading route with connectivity with all parts of country through ground as well as sea routes. His capital was developed to become a commercial and industrial settlement of all beliefs. Weavers, craftspeople and traders were major part of the social structure of the city. It remained being a prosperous and wealthier settlement despite political turmoil of invasions and changing rule between, Mughals, Marathas, Portuguese and British because the town did not have divisions and conflicts despite having a social composition of Muslim and Hindu craftspeople and Jain as well as Hindu merchants and financiers. It was an excellent example of a trading and business town, with exports and imports from all parts of country as well as world.

Due to communal riots between three major communities living in Ahmedabad, during Maratha's rule, Pol houses within walled city were developed as close-knit community group housing, with densely packed houses, all opening into a dead-end street entered through just one gateway [9]. This planning pattern developed is also influenced from traditional neighborhood planning of Gujarat called '*Khadki*', which meant a group of houses along both sides of a street with rear walls (without any openings) of each house acting together as a boundary of the cluster, and when multiple *Khadkis* like these open into one wider street with only one gateway or entrance, it becomes Pol [10]. So, in a way, each *Khadki* in itself was a group of building with a courtyard for activities as well as light and ventilation with least portion of each building being exposed to the hot and dry climate and self-shading within buildings allowing light but no direct sunlight.

Pols were organized community wise and people of all religion lived in this kind of housing only. In fact, each pol, with group of houses were formed on the basis of occupations of people living there. Pols and *khadkis* are interesting example of social harmony within neighborhoods, as residents of all economic status belonging to same community would live together in a *khadki* and would participate in all cultural and social activities equally.

Pol houses, were planned like typical courtyard houses of Northern India, but were different in volume, as most of Pol houses were 3 to 4 storey high (on an average) with narrow and small frontage open to street of the Pol, side walls shared with adjoining houses and rear wall either adjoining house at back or built extra thick

and without any openings, almost like for protection. The entire house would be planned along the courtyard, which is, called *chowk* in this case. The spaces or rooms were multifunctional except for three spaces. The room along the entrance gateway with specific purpose of *baithak*, the kitchen or *rasoda* and *pooja* rooms were only defined spaces. This was similar to haveli planning of the Rajasthan. Also, in case of craftspeople's house, the front rooms would be used as their workshop.

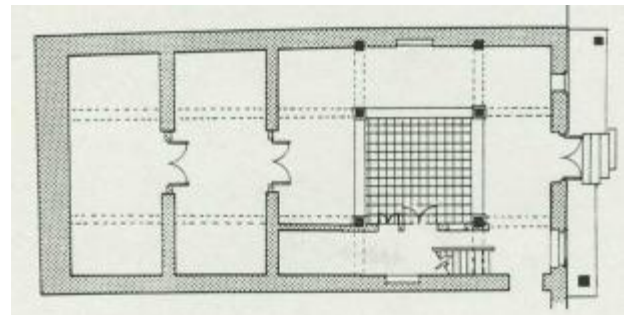


Figure 12 Typical plan of a Pol house (Source-Ubbelohde, M. Susan, Loisos, George, The Ahmedabad Pol House: Courtyard Strategies in a Hot- Dry/ Hot Humid Climate)

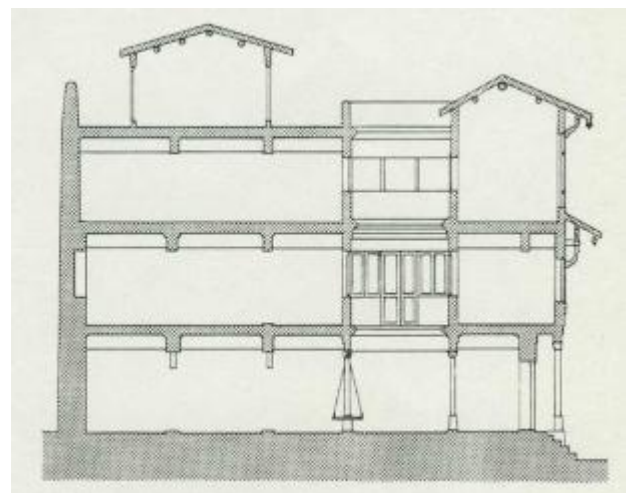


Figure 13 Typical Section of a Pol house (Source-Ubbelohde, M. Susan, Loisos, George, The Ahmedabad Pol House: Courtyard Strategies in a Hot- Dry/ Hot Humid Climate)



Figure 14 Courtyard/ chowk of a pol house in Ahmedabad

Timber structural system with beams and columns and bricks as infill was the typical construction framework for these houses. Flooring systems were also timber beams with combination of bricks and mud, which is typical roofing detail for north western India.

European and Islamic traders and rulers had made their impression on social and economic aspects of Ahmedabad. This was reflected in types of architectural typologies and other planning aspects of the town along with the ornamentation and artistic expressions on architecture of pol houses. The front facades, open to street were most ornamented facade of house with intricately carved wooden columns, brackets, doors and windows. Despite the foreigner's influence, the elements of ornamentation, were influenced from the local traditional beliefs of Gujarat, visible in intricately carved timber facades.



Figure 15 Intricately carved timber elements of a Pol House in Ahmedabad (Source: Ahmedabad Municipal Corporation, World Heritage Nomination Dossier - Historic City of Ahmadabad, 2016, UNESCO)



Figure 16 Carving in one of Pol house facades showing Lord Krishna —faith of locals (Source: Ahmedabad Municipal Corporation, World Heritage Nomination Dossier - Historic City of Ahmadabad, 2016, UNESCO)



Figure 17 Front facade of one of the pol houses, Ahmedabad

3.3. Androoni Quila, Quila Mubarak, Patiala, Punjab

Patiala was found during late 18th century after much of political tension in Punjab was neutralized and Sikhs were ruling the area. Close to Sirhind, which was on Grand Trunk Road, the town was found by Baba Ala Singh by starting the construction of Quila Mubarak. Built on top a hillock in centre of the area selected for the town, the *quila* (fort) was located strategically for surveillance of the settlement from a higher elevation.

Patiala, and in fact, most parts of Punjab had cross-cultural interactions with Rajasthan and Delhi and hence reflection of these interactions were evident in the built form as well, and so is the case of *Quila Mubarak*.



Figure 18 Location of Quila Mubarak, with reference to settlement around

The palace, called *Quila Androoni* (meaning inner fort) was residential building meant for rulers of the empire. Built in a time period after Mughal architecture had established its roots in most of India, this palace is an amalgamation of Mughal and Rajasthani architecture, especially the fort architecture of Rajasthan, as evident from the visual analysis and interpretation of the building. Quila Androoni is at the centre of complex, with the building designed as a fort within the outer fort. Planning of the building is along multiple courtyards and series of staircases leading to floors and terraces at multiple levels. The multiple levels of terraces and courtyards with gardens, definitely appear as an influence from palatial complex planning during the Mughals. Also, interestingly, the planning of Quila Androoni, with octagonal bastions on four corners, and semicircular bastions on mid-point of all four sides is a typical pattern followed in other contemporary forts of Punjab.



Figure 19 Layout of Quila Androoni in Quila Mubarak Patiala

Not much have been documented or recorded about construction and design of the palace, hence, social traditions and factors effecting planning of the building cannot be commented upon. Materials and techniques of construction, however, are in accordance with the local construction of the area with bricks and lime being the main materials for walls and timber beams with brick layering being the roofing system.

Different elements of the building show influences from different regions of country in this case as well, like the *Bangladhar* roof on top the gateways and bastions is an element that travelled across country, along with Mughal kings and artisans and has been used in almost all of North western India. In fact, this same detail of gateway, with *Bangladhar* roof and chhatris on sides is found in buildings of same time period in Rajasthan as well (Pushkar and Ajmer). Multi foliated arches and late Mughal columns had also been used in this building.



Figure 20 One of courtyards of Quila Androoni with multi levels of terraces along sides



Figure 21 One of the broken sides of quila Androoni Quila, showing different materials of construction



Figure 22 Gateway and front facade of Quila Androoni

3.4. Bohra Kunj, Pushkar, Rajasthan

Bohra Kunj is a small Haveli built by Bohra family from the hinterland of Pushkar during early 19th century CE as a donation to local *Brahmin* family as a part of *Jajman Pratha* {*Jajman pratha*- A system, where some merchant or member of royal families would build temples or *dharamshalas* or rest houses or havelis, and hand it over to a Brahmin family (sometimes donated or sometimes just to take care) to perform religious

rituals and take care of the property. Also, for the upkeep and maintenance of the building, they would donate a village or make some arrangements so that the Brahmins didn't have to spend anything to take care of the building. So, most of the original patrons of these buildings could not be identified properly, because of ownership issues that have emerged due to abolition of the *pratha*.}. Most of important buildings of Pushkar were built by kings, wealthy merchants and traders, as a part of the belief system that donation or doing some service in the holy town of Pushkar {which is religiously very significant for Hindu Pilgrims as Pushkar is considered the Guru (head) of Teerthas/Pilgrim destination}, would be very auspicious for them. In fact, it would not be wrong to say that, most of historic buildings that exist in Pushkar today, have been built by donations and grants, but not by families which reside in them now. Also, in town of Pushkar, there were four major foci along which settlement evolved through centuries, i.e., holy Pushkar lake, Brahma temple, Varah temple and Kapaleshwar temple. These are most important elements of town, which exist ever since the town was revived back by excavation of the lake in centre and establishment of few temples around it in 7th century CE. So, over centuries, locations of havelis, temples, *dharamshalas* and resthouses depended upon social and economic status of patrons of these buildings. Bohra Kunj is located on the street connecting Pushkar lake to Kapaleshwar temple, and is a haveli gifted to Brahmin family as their residence. So, it can be said that the *Bohras* were important economically as well as socially to had built on such important location.



Figure 23 Plan of Pushkar showing location of Bohra Kunj

It is a double courtyard Haveli, with an amalgamation of traditional Rajasthani architectural elements with cross-cultural influences from Mughal architecture (which was itself evolving in different parts of their ruling extents within the country). Planning, selection

of materials and spaces are all according to traditional havelis of Rajasthan, with a foliated arched entrance leading to corridor which connects with first courtyard of the haveli. A series of corridors on opposite side of entrance connects to second courtyard.

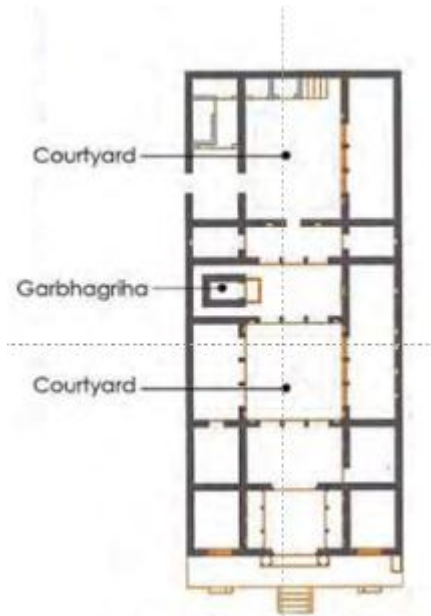


Figure 24 Layout of Bohra Kunj

This direct entrance into first courtyard and side entrance into second one is a concept influenced by *zenana* and *mardana* courts as per Islamic planning patterns, which has been reflected here. However, this concept was not at centre of design of this Haveli, as entrances into both courtyards are along one axis, causing no screening between both. Also, according to the rituals and practices followed in Pushkar, mostly all houses have a Garbhagriha or a pooja room meant for housing deity. In this house, it is along end of the corridor connecting both courtyards, which is an influence from local traditions.



Figure 25 Courtyard of Bohra Kunj

Other elements of ornamentation are all a hybridization of Mughal and Rajasthani elements like twin columns with floral capitals and base, *jharokhas* and brackets. *Bangladhar* roof, is one important element that reflects cross-cultural influence due to travelling of craftspeople along with kings and royals from Bengal to Rajasthan.



Figure 26 Elevation of Bohra Kunj



Figure 27 Bangladhar roof at entrance gateway of Bohra Kunj

3.5. Mungewali Haveli, Katra Khushal Rai, Shahjahanabad, Delhi

Mungewali Haveli was one of residential houses constructed in Shahjahanabad during late 18th century CE, built by a trader of gems (*munga*). Shahjahanabad was planned to segregate the royalty and locals, with noblemen and important personalities getting the location along main axes of walled city and rest of the places developed as *Bazaars* (markets).

Mungewali Haveli is in similar such *Bazaar*, called *Kinari Bazaar* (*Kinari* meaning sides of cloth which would be lined by various laces and gems). Hence *Kinari Bazaar* was meant to be selling gems and laces, and the owner of Mungewali Haveli was one of the largest stockist of Munga in the country at that time. The location of this Haveli, hence is on a prime location with highest elevation point of that area, which also reflects the owner's high social and economic status in the area.



Figure 28 Location map, showing Mungewali Haveli within Shahjahanabad

Designed and built during late 19th century, the building has been planned according to typical Haveli planning, with two courtyards (one *zenana* on the inside and other *mardana* on the outside). Series of corridors connecting to rooms along the interior courtyard is separated from the corridors along the outer courtyard

through corridors called *dalan*. This type of planning was to suit the traditional cultural practices of the family, as activities and functions and meetings and gatherings with outsiders would happen in the outer, larger courtyard and women of the house could see through the *jharokhas* and balconies on floors above or through the veiled *dalan*.



Figure 29 Layout plan of Mungewali Haveli [12]

The construction systems and materials also reflect the layers of history that this Haveli would have been through, as well as the techniques and practices of each time period. The lower two floors, which was the original floor of Haveli were built in brick, sandstone and lime with wooden beams supporting roofing system. *Shahjahani* columns with wooden beams transferred the load for this portion.

The floors above, however, had been constructed in cement and a double heighted room was added on top of old timber beams. The room has stained-glass windows, which was a new construction trend at that time.

The elements of architectural vocabulary also vary according to time period of construction in this case. The arches, columns, wooden carved brackets, sandstone railings and *jharokhas* present in the lower two floors of the building are evident Mughal influence. These timber brackets, are in fact, similar to one used in contemporary *Havelis* of Rajasthan (Bikaner), also.



Figure 30 Arches and columns-Mughal style on first floor



Figure 31 Timber beams used in Haveli

The floors constructed above, in later stages have different vocabulary of architectural elements influenced from the colonial architecture developing during that time period. For example the new room added later during British time on top of terrace, had semicircular arches and stained glass doors and windows, with different materials of construction and finish as well.



Figure 32 View of room added later on terrace with different architectural vocabulary

3.6. Kothi of *Qila* Mahmudabad, Sitapur, Uttar Pradesh

Qila at Mahmudabad was originally built during late 17th century CE along with the Kothi. However, it was destroyed during India's first war of independence in 1857 and reconstructed during that time period only on the original base of Kothi. Hence, it is being discussed as a late 19th century construction. Mahmudabad, a part of traditional cultural region, Awadh, had been ruled by Delhi Sultanate, Sharqi Sulatanate, Mughals, and the Nawabs of Awadh till this time. The Nawabs were also given their status and power during the Mughal time period only. Hence, the architectural style developed here, referred to as Awadhi architecture was primarily influenced by Mughal architecture. The Kothi at Qila Mahmudabad is built in pure Awadhi architectural style.

The Kothi, along with *Qila* (fort), had been built along a higher plain in the undulating terrain of the area, with water body on three sides of fort walls. Kothi-the residential palace for royal family was built along the southern portion of the complex as this was the side with flat land where earlier settlement would have grown, and the Nawabs could overlook the settlement.



Figure 33 Map showing location of Qila Mahmudabad with respect to the settlement



Figure 34 Layout of Kothi, Qila Mahmudabad

Kothi had been planned with two courtyards of different sizes and rooms flanked corridors along them.

The entrance porch was from northern side of building, leading into the first smaller courtyard, with further set of rooms and corridors leading south towards the second and larger (almost double sized) courtyard. Not written records mention, but the sizes of courtyards help us interpret that the first and smaller one would be for outsiders for clerical works of the Nawabs; and the second and larger one would be for different activities related to family and servants. The concept of *zenana* and *mardana* in these courtyards may or may not be actually assumed as a central corridor or passage has been provided for passage of vehicles through the building.



Figure 35 Side view of Kothi, from eastern side, showing the central passage for vehicles

Awadhi architecture, is what is significant about this building. In fact, influence of Mughal architecture on the Nawabs of this region, which led to the development of an architectural style inspired by them, is interesting here. Also, since this particular Kothi was built by the British, the influence of British architects/engineers is also evident here. Use of semicircular arches in combination of floral cusped frame, similar the various Awadhi buildings in Lucknow, is a beautifully conceived composition. The semicircular porch or verandah projecting out of building, as shown in the image above, is also a typical feature of British period buildings or colonial bungalows. Also, due to British influence, the kind of doors and windows used in this building are of colonial style (semicircular arched and timber framed swinging windows).



Figure 36 View of a portion of Kothi showing the variety of wooden doors and windows

3.7. Bhanwar Niwas, Rampuria group of Havelis, Bikaner, Rajasthan

Bhanwar Niwas was one of Havelis of the Rampuria Group of seven Havelis built by three brothers of Rampuria family during 20th century. The group of Havelis is located in centre of fortified city of Bikaner which was found in 15th century and was situated on very important historic trade route. The social status of the Rampurias, who were one of most powerful and wealthy traders of town, seemed to have provided them the location in core and on highest elevation of the fortified city, as well as near to important streets of the town. The other smaller havelis of less significant traders and merchants were located from in to outwards according to social and economic status in town.

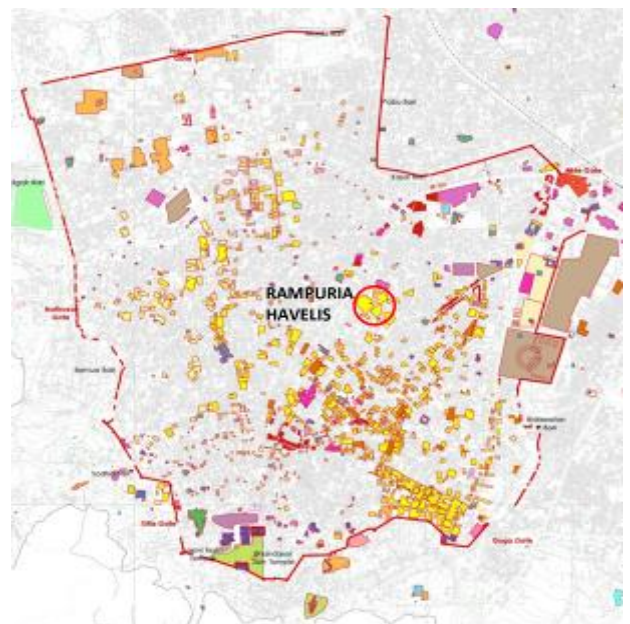


Figure 37 Map of Bikaner showing location of Rampuria Havelis

Bhanwar Niwas is an example of European and Mughal influences on traditional Rajput architecture. Planned typically, like traditional Havelis of Rajasthan, this building is also designed along a rectangular courtyard with built area designed to follow street patterns as well as regular geometry of courtyard. Corridors along all sides of courtyard connecting to further rooms, again a typical courtyard house planning, has been followed in this case.

Selection of materials for construction was traditional, i.e., local Dulmera stone, red in colour. However, the appearance of facades with elements like pointed and two- and three-point arches, circular windows and horizontal grooves along stone joineries (making an appearance of exposed brick work), is what makes it appear more of a colonial building. Keystone of arches became prominent, traditional elements like *jharokhas* were hybridized with European balconies and *chajjas* became less in width with smaller and much simpler brackets.



Figure 38 A view of courtyard of Bhanwar Niwas, Bikaner

Use of different motifs like flowers and intricate patterns, is another important cross-cultural influence of the European architecture in the Haveli. Hence, it can be stated that Bhanwar Niwas was a Haveli designed with traditional planning principles and European influences on the ornamentation and small architectural elements like arches, windows, *jharokhas* etc.



Figure 39 Ornamentation of facades, a combination of simple traditional brackets with influenced patterns



Figure 40 Key stone of arches used an element of ornamentation, a distinct European influence

4. SIMILARITIES AND DIFFERENCES IN TRADITIONAL RESIDENTIAL ARCHITECTURE OF DIFFERENT ZONES OF NORTH WESTERN INDIA

During the defined time period, these states witnessed a shift in socio-cultural scenario due to change in rulers as well as change in social settings according to influences from interacting cultures brought by rulers who came in power. This was reflected in architecture and planning as well; not only in typologies of residential typologies but in various influences in designing of these buildings as well, like courtyards with *zenana* (female) and *mardana* (male) areas and *jaalis*, domes, multi foliated arches and *jharokhas* in these areas influenced from Islamic architecture. The vast expanse of Mughal rule also allowed for exchange of designs and construction techniques developed within India, but carried to different parts by artisans and kings travelling across the area of rule, like *Bangladhar* roof, developed in Bengal during Islamic rule inspired by vernacular huts of the region suitable for that region and its climate, were carried to Rajasthan and became very prominent feature of buildings of this time period in the state [11]. Effects of

cross-cultural influences like change in planning and spatial composition, evolution of architectural construction techniques like domes and arches and elements of ornamentation has been reflected in all scales and typologies of residential typologies across the region. The *Bangladhar* roof, for example, is found in palaces and havelis of all scales in Ajmer and Pushkar.

Large palatial scale gateways were another important element which had travelled across different parts of North western India and was present in all scales of buildings, mostly because of being a symbol of status for economically superior group within society. Hence, there are multiple factors responsible for evolution of residential architecture typologies as well as formation or arrangement of residential clusters in historic towns of time period.

4.1. Planning

Organization of residential neighborhoods- Across the entire region, planning and locations of residential units within historic core of cities, is according to socio economic composition of town, as well as occupational pattern of residents. Most strategic locations suitable for trade or business-like streets and roads along major spine with regional connectivity, are mostly occupied by merchants and traders with residences along with their *karkhanas* and godowns. Towns in almost all parts of defined region, have a planning with havelis and Kothis of most important noblemen and merchant in interior core or along or within fortification of royal residences and houses or clusters of smaller havelis or pols on the exterior of the settlement.

Residential building typologies- Building typologies in all parts of North Western region, that developed during this time period are mostly courtyard houses with variation in number of courtyards according to scale of building required for size and economic status of owners. This was a concept known to the region, which was influenced further during this time period in terms of activities and cultural practices and believes like *zenana* and *mardana* sections. Lots of spaces and activities were also influenced from Mughal palatial spaces, like concept of Diwan-I-Aam was reflected in spaces like *baithaks* in Havelis and Kothis.

4.2. Climatic Considerations and selection of Materials

Selection of materials is the major factor effected the least by cross-cultural influences, majorly because of availability of materials in respective zones and suitability of these materials according to local climatic situations. Hence, stone, bricks and wood have been used majorly as building materials in residential buildings of region.

4.3. Activities and Traditional Practices

Traditional practices and activities had always been an important factor for designing of residential typologies across the region. Daily lifestyle practices like household activities of drying spices and chips in courtyards, had made the design of each one contextual to the region, which would reflect on size and shape of courtyards. Number of these courtyards would depend upon types of activities happening in the house, like workshops or business activities would have a separate courtyard and household activities would happen in other. The interface of buildings also solely depended upon the occupational patterns of residents like extra rooms in front for workshop of a weaver or other craftsperson in case of Pol houses in Ahmedabad.

4.4. Architectural elements

Architectural vocabulary and ornamental elements showed maximum of cross-cultural influence in form of artistic expressions of the wood carver or the set definite pattern of floral motifs and bands amalgamated with geometrical patterns brought by the Mughals. Use of semicircular arches in combination with multi foliated arches in havelis and palaces of the region, reflects the influence of both British and Mughals. Travelling of craftspeople and their experience and skills was another major factor influencing evolution of artistic expressions over the region. Change in materials, and location of buildings was also not a factor that changes their skills and expressions, like in case of Gwalior fort. Patronage and the patron's interest and taste in art and architecture was most important element effecting the whole design of building.

5. CONCLUSIONS

Cross-cultural influences from local traditions as well as cultures from outside the country, like Mamluks, Khijlis, Tughlaqs, Saiyyeds, Lodis, Mughals and British, who have interacted with the culture of India, have been reflected upon the architecture during this time period. These influences have reflected upon all parts of defined region across all scales of residential buildings. Artistic expressions in terms of designing of arches, columns, brackets, carvings, and ornamentation bands have reflected these cross-cultural influences the most. However, other aspects of buildings like planning of spaces and their nomenclatures vary region to region, but inspirations and influences have shown majorly in form of ornamentation only. Other factors like location and setting, and material and climatic response of these buildings did not have major influence from such interactions. Socio economic and cultural patterns of each region definitely had an effect from overall scenario of changing rulers and interactions with different cultures, but direct reflection of this in architectural manifestation was not observed. Instead, the visual aspects of building culture

that they brought with them, had major role to play in influencing the architecture of North western region. Interaction of cultures within the country, due to common ruling umbrella was another important aspect of cross-cultural interactions, which had led to evolution of architecture and artistic expressions across entire region. Travelling and interaction within craftspeople from within as well as outside India due to above mentioned factor, also influenced the evolution of artistic expressions.

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