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## CHAPTER 1. EXECUTIVE SUMMARY

### 1.1 INTRODUCTION

Agra is the city of the iconic Taj Mahal. It is as loved by Indians as it is by foreigners who throng here in large numbers to admire its beauty. Along with Delhi and Jaipur, Agra forms the Golden Triangle of tourism in India. An astonishing number of tourists plan a day trip to Agra just to visit the Taj or sometimes the Agra Fort and few more heritage sites. However most of the people are unaware of the other glories and interesting places within the city.

Agra is essentially a Mughal city. The Mughals have left behind a number of tombs and mosques in the city. The great gardens and houses built by the noblemen of the court have mostly vanished, as have the numerous buildings housing the rest of the city's population. Nevertheless their imprint on the city is still visible in the shape of street pattern and small localities that have evolved within the compounds of forms mansions and caravanserais. Today more commonly found are nineteenth century and early twentieth century buildings than the Mughal counterpart. During this period the main streets of the old city were lined with highly ornate house fronts, while North and South were colonial areas with huge colonial mansions.

In summary, not just the Taj and few other large monument complexes, the entire city and its growth make up for the significance of the city of Agra. The project aims to identify few such areas of architectural and cultural significance and propose a revitalization programme for specific streets. This includes façade conservation of the houses on these streets as well as infrastructure development for the street (which will be dealt with in the minor streets projects).

As an example Façade Improvement along Daresi is proposed. The area comprising of three main roads-Daresi, Rawatpara and Johri Bazar Street is an important wholesale market of modern day Agra and forms an important link to the Jami Masjid for the locals as well as the tourist. A number of beautiful houses have been identified on these streets that display a wealth of architectural features but need upgradation.

### 1.2 AIMS AND OBJECTIVES

#### Aim:

The project aims to conserve and restore the front facades of 45 selected houses of architectural significance on "Daresi" in order to enhance the cultural experience of the city en-route to the frequently visited Jami Masjid.

#### Objectives:

- *Identification of houses of cultural significance.*
- *Detail study of the history/architecture vis-a-vis present condition, user needs and issues.*

- *Giving Conservation proposals that will protect the cultural significance of the houses as well as cater to the future needs of the users*

## 1.3 SCOPE AND METHODOLOGY

### Scope:

Only the house-fronts will be considered for the proposal while the issues related to decongestion of traffic, traffic signals, pedestrian paths, development of any open spaces and other infrastructural aspects will be addressed in project “Rehabilitation of Minor Roads”.

### Methodology:

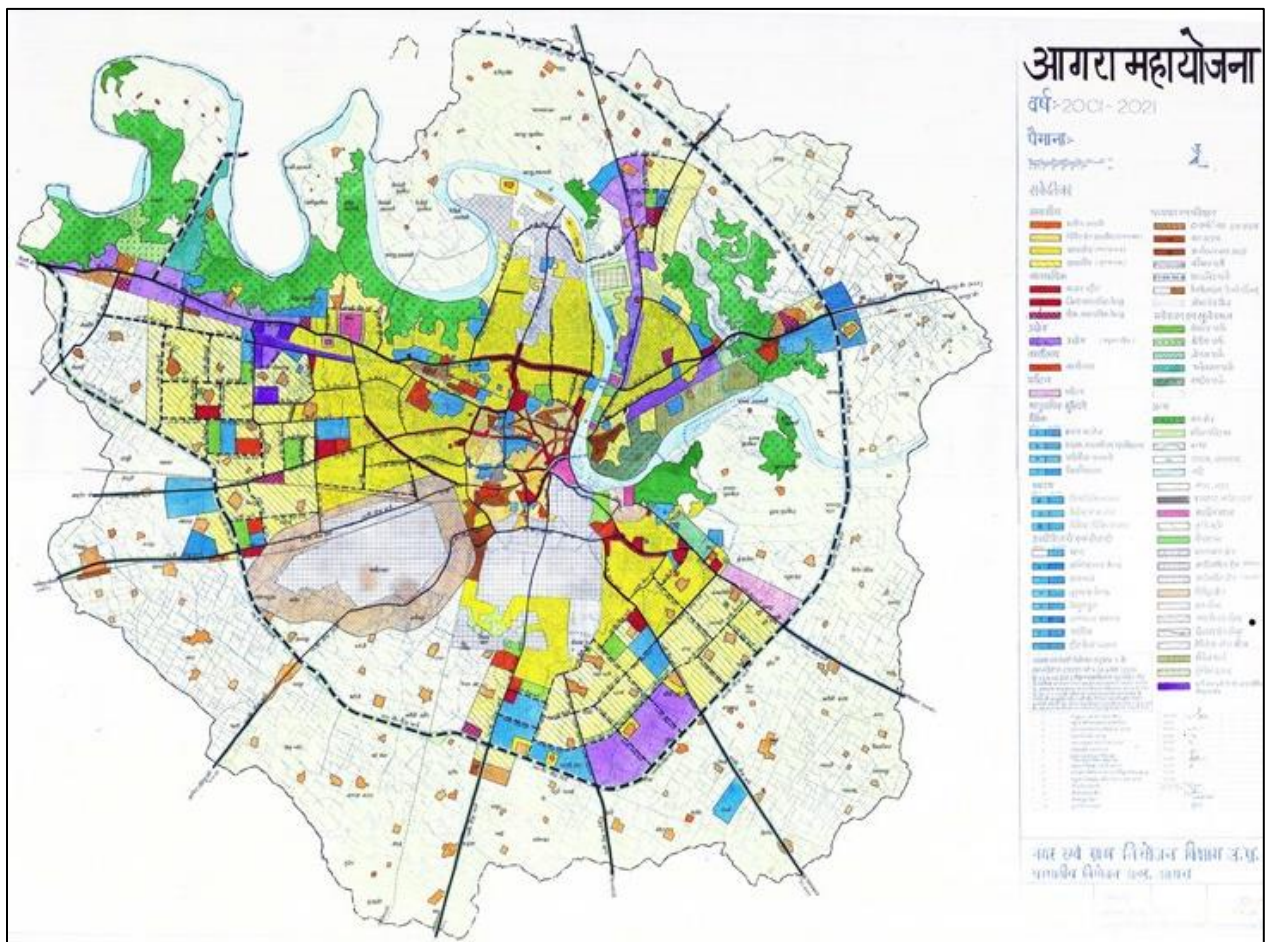
- ❖ Detailed site survey to understand the architecture and present condition of the houses.
- ❖ Architectural documentation: measured drawings and condition assessment drawings of the 45 houses.
- ❖ Literature survey to understand the city of Agra as well as the history, architecture and significance of the Daresi area.
- ❖ Assessment of significance of Daresi area.
- ❖ Identifying the significant character defining features
- ❖ Site study involving personal observations and interviews of users
- ❖ Identifying the issues , needs and constraints
- ❖ Understanding of International principles of conservation and local regulations
- ❖ Making of proposal drawings
- ❖ Framing of an action plan to execute the conservation process

## CHAPTER 2. INTRODUCTION TO AGRA

### 2.1 Introduction to Agra

Agra city is governed by Municipal Corporation which comes under Agra Metropolitan Region. The Agra city is located in the Uttar Pradesh state of India. As per provisional reports of Census India, the population of Agra in 2011 is 1,585,704; of which male and female are 845,902 and 739,802 respectively. Although Agra city has population of 1,585,704; its urban / metropolitan population is 1,760,285 of which 939,875 are males and 820,410 are females.

Figure 1: Agra Master Plan 2021





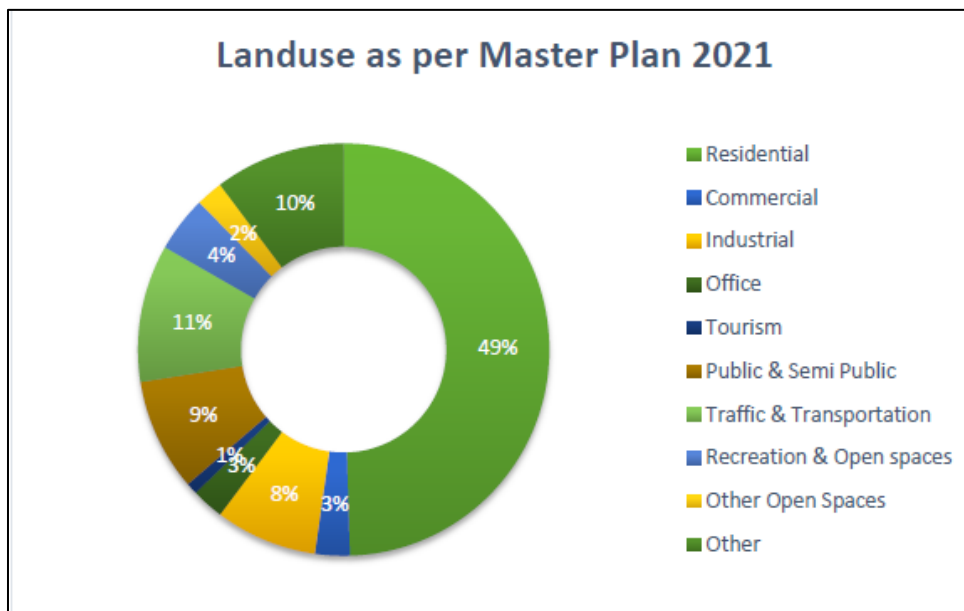


Figure 2: Land use as per Master Plan 2021

It is generally accepted that Agra was both an ancient city from the times of the Mahabharata and yet nevertheless Sultan Sikandar Lodi, the Muslim ruler of the Delhi Sultanate, founded Agra in the year 1504. After the Sultan's death, the city passed on to his son, Sultan IbrahimLodi. He ruled his Sultanate from Agra until he fell fighting to Mughal Badshah Babar in the First battle of Panipat fought in 1526.

## 2.2 Regional Setting

Agra city is located on the banks of the river Yamuna. As one of India’s major tourist destination, the city is part of many tourist circuits such as the Golden Triangle tourist circuit, along with Delhi and Jaipur; and the Uttar Pradesh Heritage Arc, a tourist circuit of UP state, along with Lucknow the capital of the state and Varanasi. Its proximity to the national capital and the well-connected road and rail network has made it a major center in the regional setting.

Table 1: Distance from Agra to different cities

Cities	Distance from Agra	Connectivity Mode
Delhi (National Capital)	209 Km	Air, Rail, Road, (Express Way)
Lucknow (State Capital)	336 Km	Air, Rail, Road, (Express Way)
Aligarh	90 Km	Rail, Road
Jaipur	240 Km	Rail, Road
Gwalior	120 Km	Rail, Road
Kanpur	300 Km	Rail, Road



Figure 3: Agra city-Regional setting

## 2.3 Demographic Characteristics

According to the census 2011, the Agra Urban Agglomeration has a population of 17.65 lakhs. It comprises of the Agra Municipal Corporation area (Pop. 15.85 lakhs), Agra cantonment (Pop. 0.5 Lakhs) and adjacent rural areas. Compared to a population of 12.75 lakhs in 2001, the decadal growth rate of pollution has been 38.03 which is highest in the last five decades. During the post-independence period, commerce showed a phenomenal increase with the associated industrial development and establishment of the industrial estates, which resulted in attracting people to the city.

Table 2: Population Growth Agra

Census of India 2011 Year	Population (lakhs)	Growth Rate (%)
1961	4.62	-
1971	5.91	27.92
1981	7.81	32.15

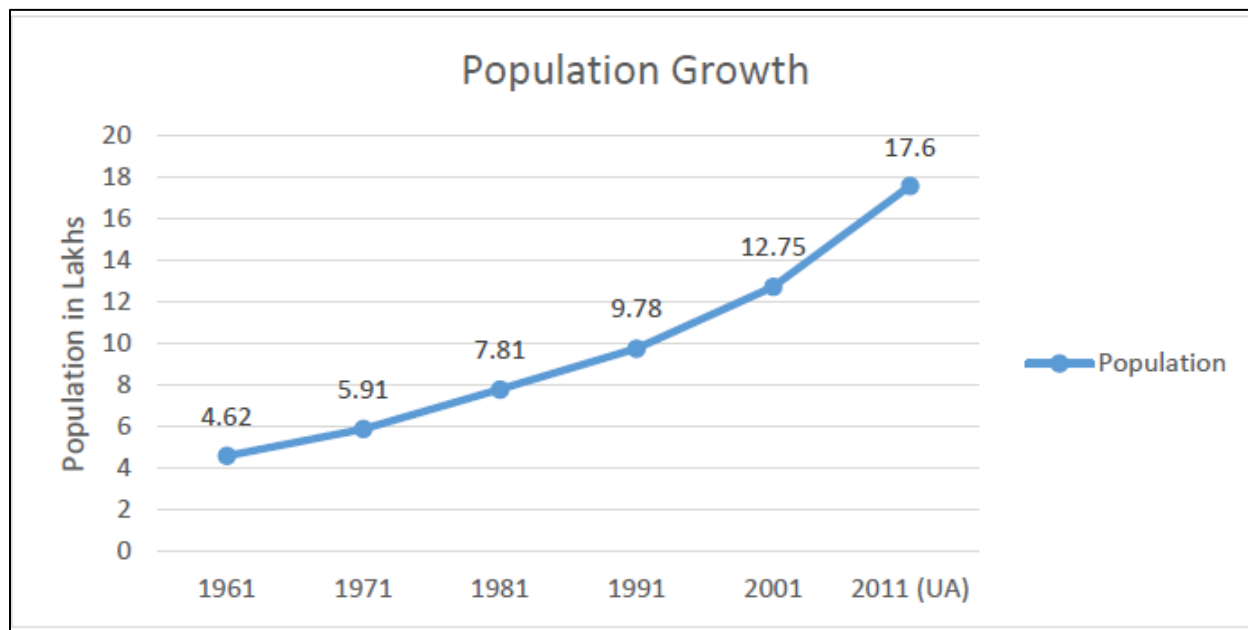


Figure 4: Decadal Population Growth Agra City

Some of the key demographic characteristic of Agra Urban Agglomeration are as follows.

- Total Population: 1,760,285
- Sex Ratio: 873
- Average Literacy Rate: 73.13 %
- Population Density (District): 1,093 persons/ sq.km

In the city of Agra, the core city area holds up a major share of the city population and has a very high population density. The area under the jurisdiction of the Agra Cantonment also has relatively lesser population density due to its land use character. However, the outward growth pockets are sparsely populated. It is important to note that, as per the city growth trends, some pockets along the proximity to main roads has been witnessing an increase in the number of settlements.

## 2.4 Economy

Agra is a tourist city famous for its world-famous heritage architectural wonders such as Taj Mahal, Fatehpur Sikri, etc. Tourism is also the major contributor to the city economy.

Other than its economic engagement through tourism, major industrial activity is in the form of small-scale and household industries. These are mainly located in the old Mughal city particularly Lohamandi, Rakabganj, Kotwali, Taj Ganj areas. The large-scale units are located in Chatta and Hariparvat areas. The city is famous for

its major handicrafts products of marble, leather, carpet, brassware, artistic daringand jewelry crafts. Agra is also famous for its Petha. As far as agriculture is concerned, the area has infertile land and is prone to floods, hence the agriculture has been a subsidiary activity in the region limited to some areas.

Some of the major tourist destinations in the city are Agra Fort, Tomb of I'timād-Ud-Daulah, Mehtab Bagh, Panch Mahal, Jama Masjid, Tomb of Akbar (Sikandara), Moti Masjid, Guru Ka Taal Gurudwara, Ram Bagh,



Mankameshwar Temple, etc. Tourists from all over the world visit the city around

Figure 5: Different types of Local Art Forms in Agra

Table 3: Number of Tourist visit to Agra

	2012	2013	2014	2015	2016
<b>Number</b>	9158976	9114221	9601728	10812435	10332917
<b>Change in tourist numbers</b>	-	-0.49%	5.35%	12.61%	-4.43%
<b>% of Foreign Tourists</b>	14.7%	13.6%	12.3%	12.4%	13.2%

One of the key factors that draw a major number of tourist to the city is the connectivity it enjoys with the Delhi. Agra is well connected with the National capital via road and rail. The following section elaborates the regional setting of the city.

## 2.5 Review of Existing Transport System

The city of Agra has a radial pattern of the road network. The city was formed on the banks of river Yamuna, which also makes it a natural barrier within the city. The railway lines stretching along North-South Direction and East-West direction also act as a barrier cutting the city into different parts. Railway

over bridges is one of the major components that act as a connector. However, ROB experience heavy traffic now a day, leading to congestion in the city. Due to heavy traffic demand, some of the ROB's have been widened. The old part of Agra, being a historical city has a network of narrow roads. Some of the major roads of the city are appended below:

- Mall Road
- M.G. Road
- Taj road
- Idgah Road
- NH 19 towards Delhi and Kanpur
- NH 44 towards Dholpur
- NH 509 towards Aligarh
- NH 21 towards Fatehpur Sikri, Bharatpur, and Jaipur
- Dayal Bagh Road
- Mughal Road
- Fatehabad Road
- Inner Ring Road
- Yamuna Expressway
- Agra Lucknow Expressway

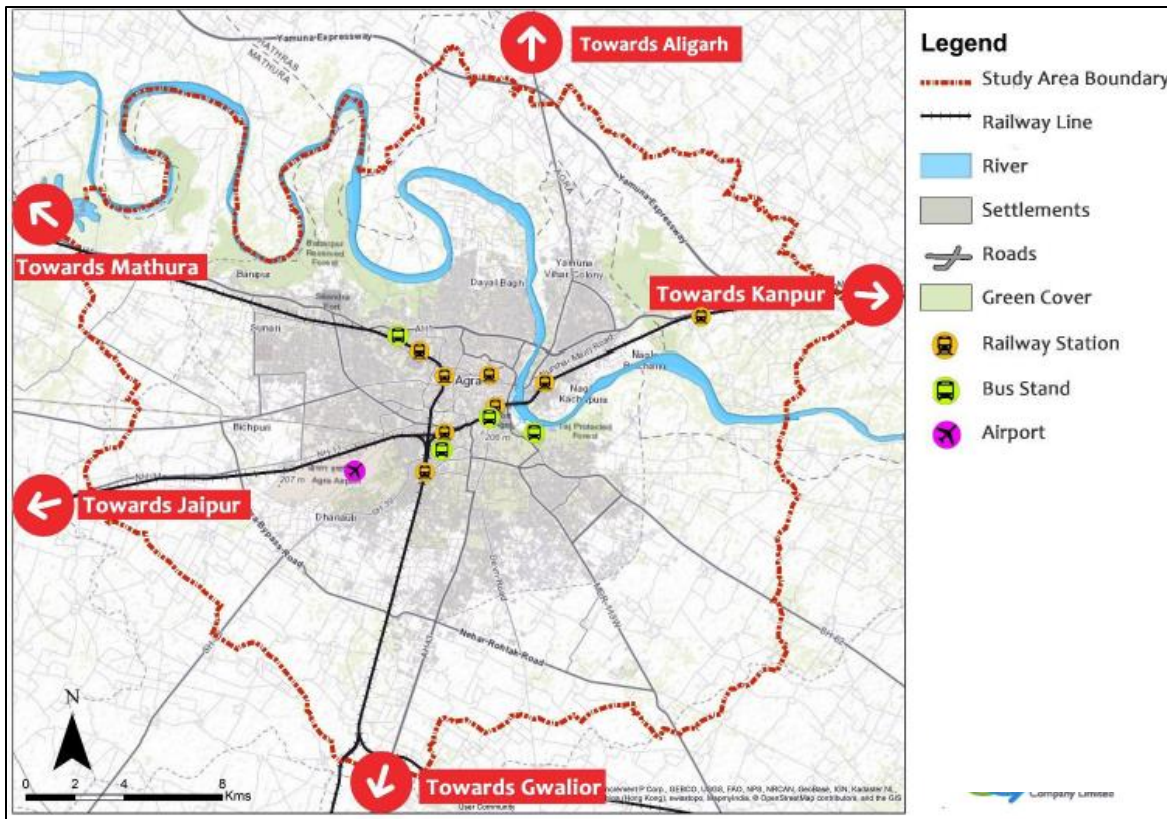


Figure 6: Existing Connectivity and Transport Setting Area

## 2.6 Rail Connectivity

Location of Agra falls on the important railway corridors of the country such as Delhi - Mumbai, Delhi - Chennai. Some trains also connect the city to eastern areas of India via direct trains to the city like Kolkata. The high frequency of trains through these routes makes Agra well connected by rail with other major cities. Apart from the regular trains, Agra city is also connected through tourist circuit trains such as - the Palace on Wheels, the Royal Rajasthan on Wheels, the Buddhist Special Train etc. Agra has following Railway Stations of Indian Railways:

- Agra Cantonment Railway Station, Agra
- Agra Fort Railway Station, Agra
- Agra City Railway Station, Agra
- Raja Ki Mandi Railway Station, Agra
- Idgah Railway Station, Agra
- Yamuna Bridge Railway Station, Agra
- Billochpura Railway Station, Agra
- Fatehpur Sikri Railway Station, Agra
- Etmadpur Railway Station, Agra
- Keetham Railway Station



Figure 7:Agra Cantt Railway Station

## 2.7 Road Connectivity

The city of Agra is well connected by the road. The following points elaborate the regional road connectivity with Agra.

1. Northside connectivity: NH2 highway and recently built Yamuna Express Highway are the two parallel roads that connect Agra to the north. The drive to Delhi is about 4 to 5 hours.
2. Eastside connectivity: Both the NH-2 and Yamuna Express highway continues to the East till Kanpur and Lucknow.
3. Westside connectivity: From Jaipur - NH11, a four-lane highway, connects Agra with Jaipur via the bird sanctuary town of Bharatpur.
4. Southside connectivity: From Gwalior, a distance of around 120 km, takes around 1.5 hours on the National Highway 3, also known as the Agra - Mumbai Highway.

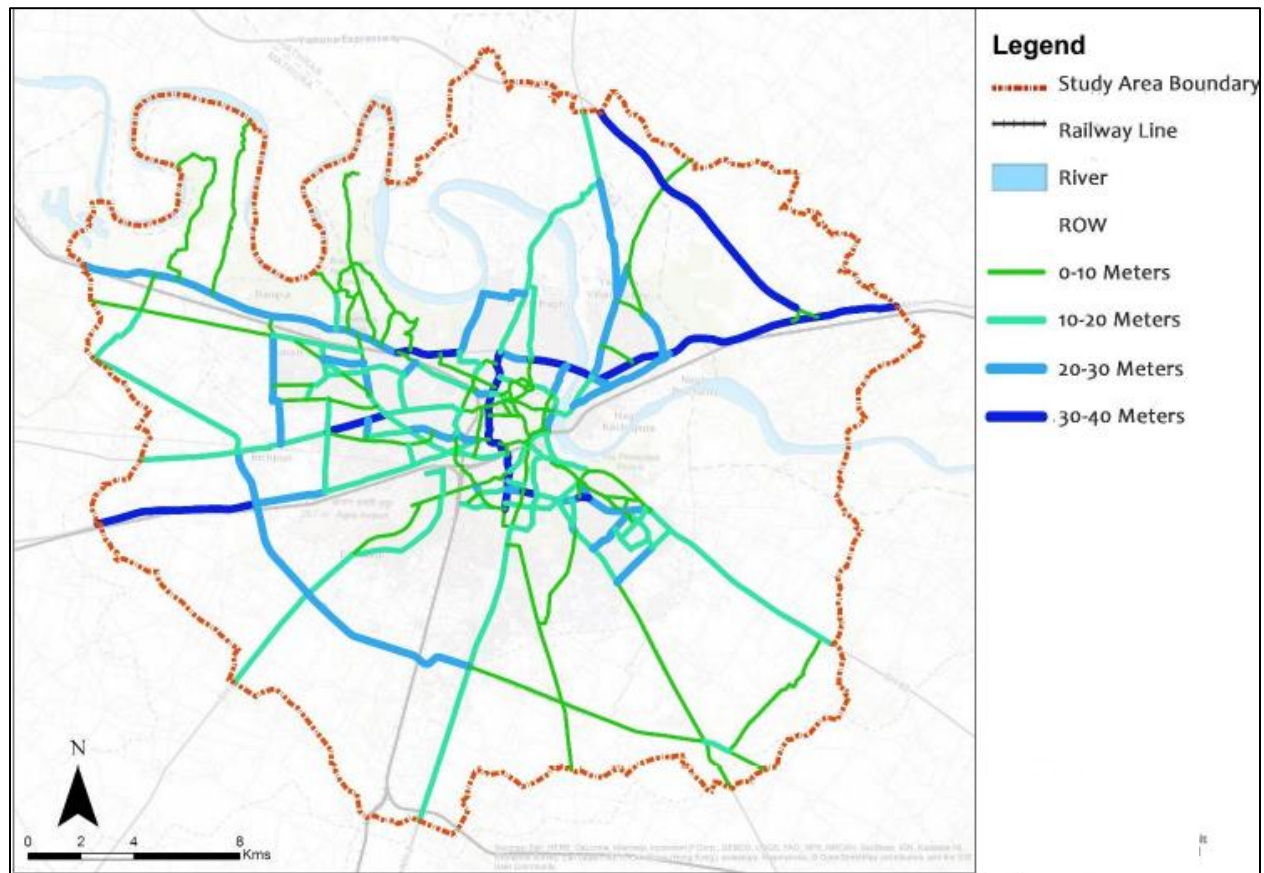


Figure 8: Road Network Inventory

## 2.8 Air Connectivity

Agra is also connected via air through Kheria Airport, Agra. Presently it has direct flight services to Delhi, Khajuraho, and Varanasi. However, Agra currently has only 0.2% share<sub>3</sub> of the passenger air traffic demand of the state. Agra is also supposed to get its direct air connectivity to Jaipur shortly.

## CHAPTER 3. SITE STUDY-HISTORICAL AND PRESENT

### 3.1 History

#### The old city and Daresi area

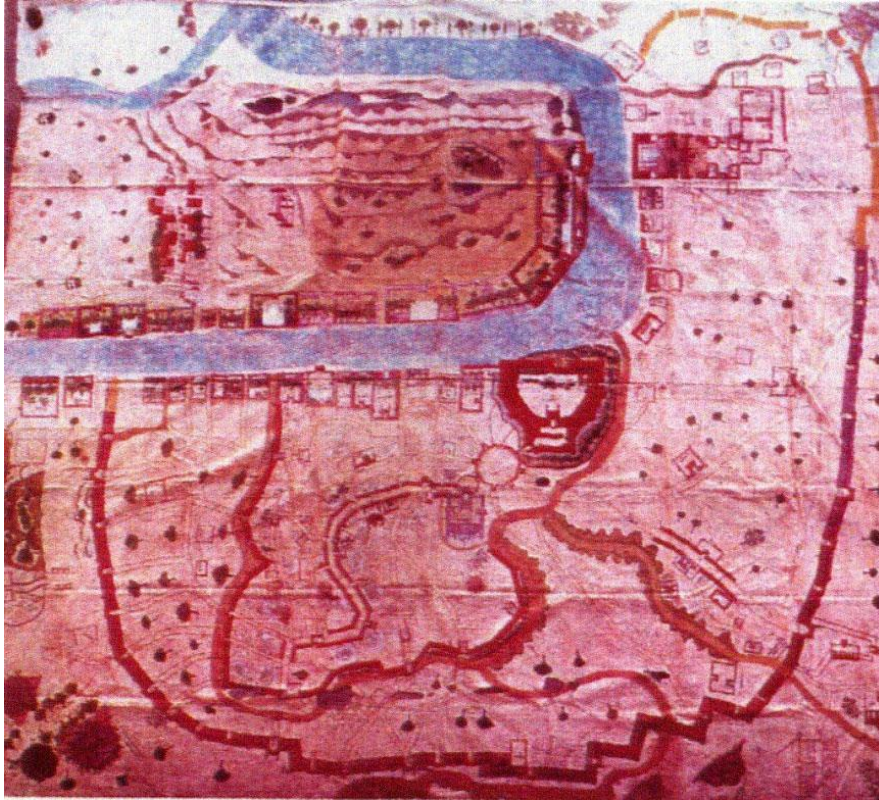


Figure 9: An 18th century map of Agra from the Jaipur Museum. Note the growth of the city around the Agra Fort.

As an imperial capital under the Mughals, Agra became a major trading centre besides being an important local market. There was massive economic and physical growth of the city. The historical maps indicate that the city kept expanding around the Agra Fort. The city was surrounded by a ditch and arched gateways would control the roads entering the city. Jahangir describes three or four storey houses in the city and says it was difficult to move around because of the narrow lanes and overcrowding. Some historians have also described it as a city in stone, with long streets having fine shops. The city suffered a setback during the eighteenth century as the Mughal capital had shifted from Agra and so did trade and commerce. These changes had a negative impact on the architecture too and the buildings slowly deteriorated. The early phase of The East India Company had a depressing effect on trade. However, the city slowly gained its feet in the nineteenth and early twentieth century with the establishment of the administrative capital and cantonment, followed by the industrial revolution and railways. The development came to be slowly visible in houses of the merchant class in the form of size and ornamentation, though not as grand and ornate as the havelis of Mughal courts men.



Colonial influence permeated residential architecture too though sparsely. There are numerous examples in the city of tall residences with extremely fine carved stone facades and doorways and continuous projecting balconies.

Some areas have been selected for street revitalization and façade improvement under the Agra Smart city project owing to their strategic location, linkages and rich architectural heritage. One such area is the triangle formed by three important streets of the old city namely Rawatpara, Johri Bazar and Daresi. The history and significance of these streets is described in the following sections.

Rawatpara is one of the oldest localities of the historic city of Agra. It is located very close to the Agra Fort and the Jama Masjid. The term Rawat is supposed to be a title conferred by the Mughals upon their faithful. Legend has it that the title was given to a Brahmin who protected Emperor Akbar during one of his hunting expeditions. The Brahmin was gifted a haveli and land close to the fort which became the abode for him and his family. The place came to be known as Rawatpara. During Aurangzeb's reign many Rawats from Rawatpara had to flee to avoid persecution. Over the time the place assumed a new identity as a wholesale market for grains, pulses and spices. This area is today the best place to buy the famous Dal Moth and Agra Petha (said to have originated in the kitchens of Emperor Shah Jahan). Many of the shops here are very old, some having origins in the Mughal Period. Most of the houses belong to late 19<sup>th</sup> century-early 20<sup>th</sup> century.

## 3.2 Architecture of the old city: Influences, materials and characteristics

The domestic architecture of the old city was in a way influenced by the architectural pattern followed by ruling dynasties. There were many factors which influenced and shaped the architecture of Agra.

### 3.2.1 Geological influences

Each ruler at Agra used the local materials and craftsmanship to create the magnificent structures which had an imprint on the domestic architecture also though in a modest way. The surrounding regions of Agra district are a rich source of a variety of stones like limestone, sandstone and marble which were used extensively in Mughal buildings.

The most common material was the brick. Most buildings were constructed in bricks and clad with sandstone or lime plaster. Under the British, exposed brickwork became popular. There were several kilns for the production of English bricks in the neighbourhood of the city. The native pattern bricks (lakhori/ kakaiya) were made in Firozabad and surrounding villages.

### 3.2.2 Climatic influences

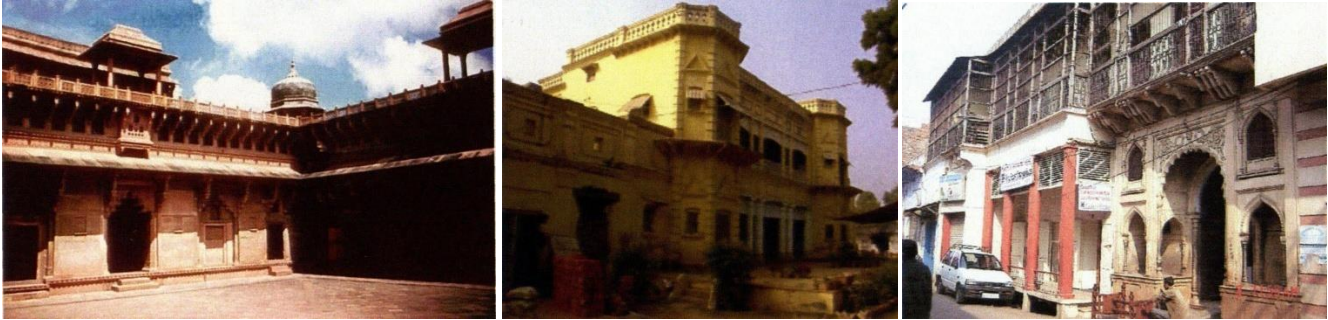


Figure 10: Internal courtyards, colonnaded/arcaded verandahs

The climate of Agra is extreme. Summers are very hot while winters are cold and foggy. Monsoon is marked by heavy rains and humidity. Thus a number of local architectural features used to combat the extremities of the climate such as internal courtyards, chajjas, screens, jalis and arcades were developed to suit the needs of royal as well domestic architecture. British also tried to adapt to the climate by modifying the European mansion in to the bungalow.

### 3.2.3 Mughal influences



Figure 11: Use of arched pavilions and openings, bangaldar roof, chajjas and brackets

A marked influence of Mughal architecture can be seen in the domestic architecture of the old city which is a combination of Hindu and Islamic styles of architecture. Courtyard planning post-beam-lintel construction, sandstone chajjas and balconies supported on carved brackets, pointed arches are characteristic of the architecture during Akbar's time. Arches have been extensively used for entrances, balconies and door-window openings. More commonly found in the houses are the multifoliated/cusped arches which evolved in the late Mughal period. Some regional influences can be seen in both Mughal architecture and domestic architecture. One common feature is the bangaldar roof, a roof style from West Bengal.

### 3.2.4 Colonial influences

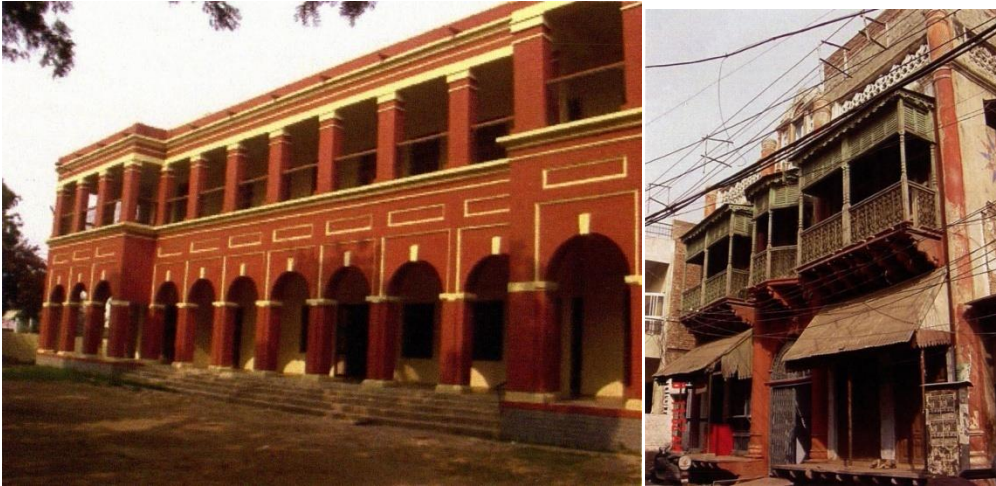


Figure 12: Arcaded/colonnaded balconies/ verandahs, louvered shutters and ventilators

Colonial architecture is basically adopted features from existing architecture adapted to climate and local construction system. The classical orders, Roman arches, colonnades, etc were used in the local syntax to formulate a distinct vocabulary. Thus new elements of continuous projected balconies supported on brackets, arcaded or colonnaded verandahs, wrought iron and wooden grilles, louvered shutters, decorative parapets, jack arches became an integral part of all existing and new buildings.

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### 3.2.5 Character defining elements for the facades

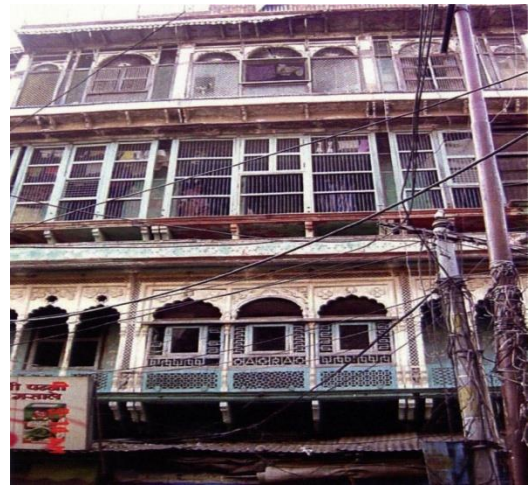
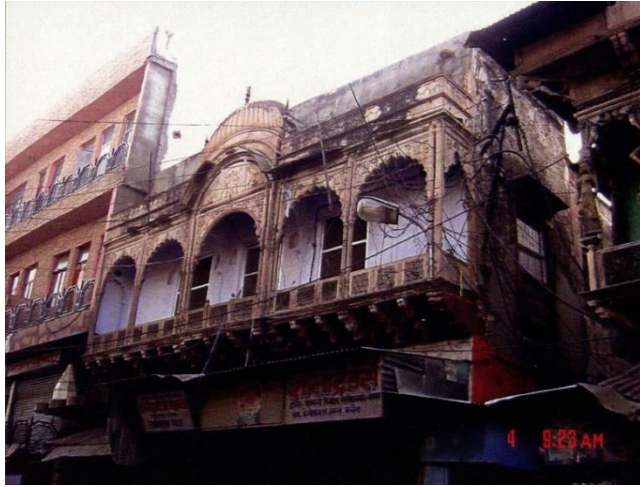


Figure 13: Bangaldar roof , Arched jharokas and projected balconies supported on carved sandstone brackets

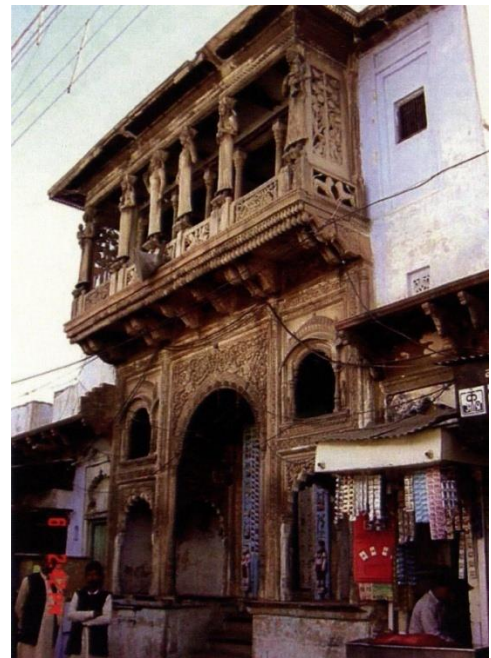
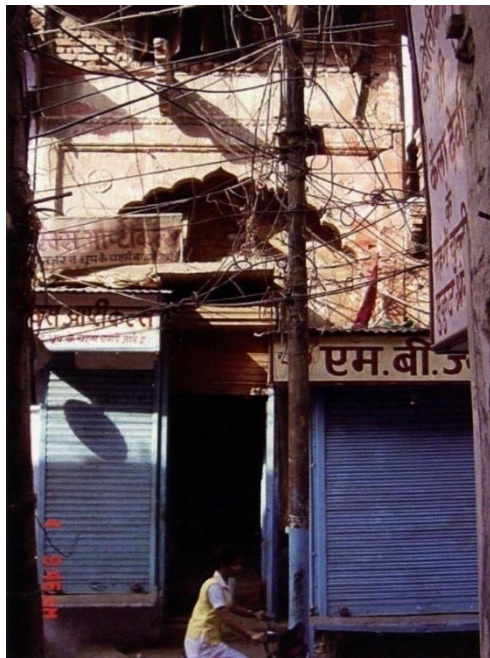


Figure 14: Arched entrances

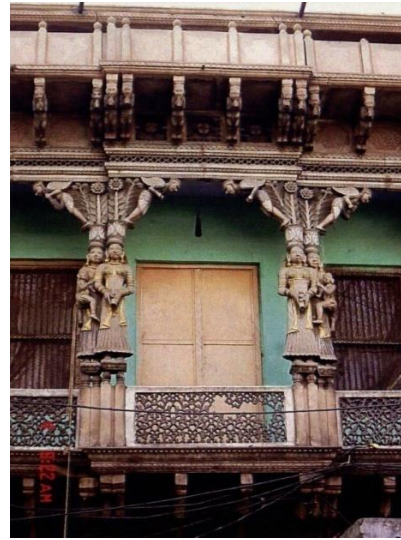
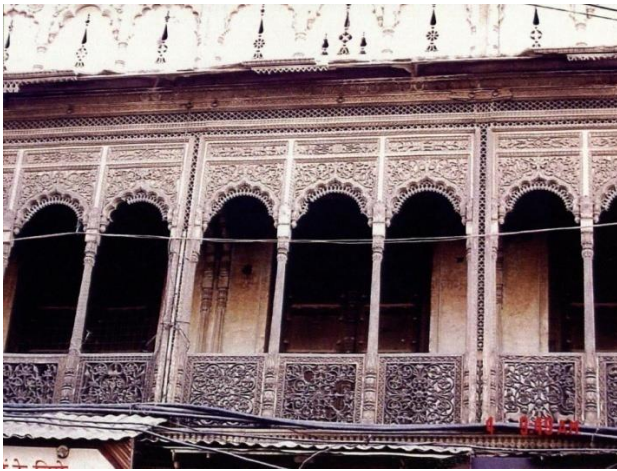


Figure 15: Surface ornamentation in the form of stone carvings or stucco, decorative columns and pilasters

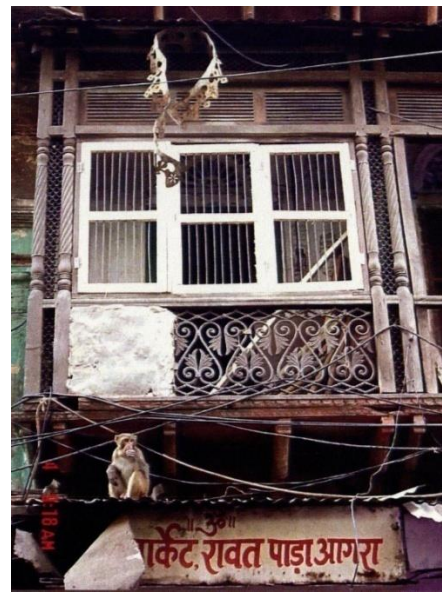
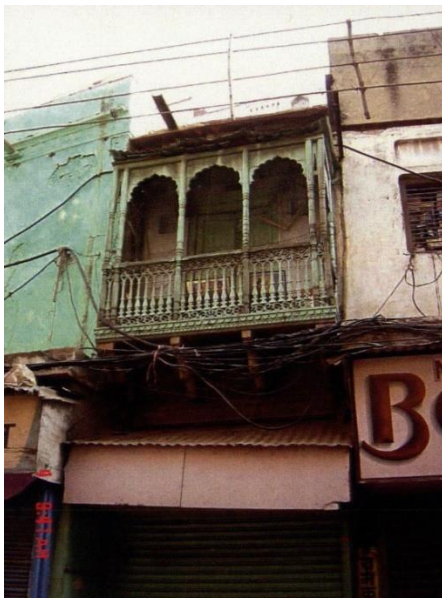


Figure 16: Balcony details with stone chajjas and brackets. Louvered ventilators can be seen in the second picture.



Figure 17: Ornamental crests in stucco or stonework

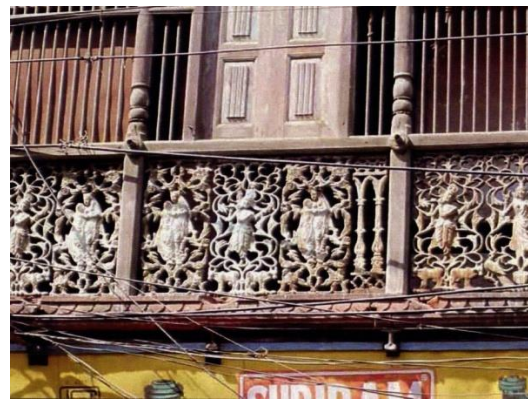


Figure 18: Ornate Wrought Iron and stone jali patterns in railings. Old wooden doors seen in backdrop.

### 3.2.6 Heritage values

**Historical value:** These are amongst the oldest streets of Agra with origin dating back to the Mughal Period. They developed in close proximity to the Agra Fort, River Yamuna and the Jami Masjid.

**Associational value:** Rawat para is associated to the Rawats during the Mughal era. In today's context Rawatpara is famous for Agra Petha and Dal Moth. Johri Bazar is a famous wholesale cloth market. Daresi Road faces the Agra Fort Railway station.

**Architectural value:** The buildings are fine surviving examples of nineteenth century and early 20<sup>th</sup> century residential architecture of Agra which developed in accordance with the climatic, socio-cultural and other factors affecting the region. The architectural vocabulary shows influence of Mughal and Colonial architecture.

**Socio-economic-cultural value:** The streets form major linkages to the Jama Masjid and Agra Fort railway station. The famous Mankameshwar temple is also approached through them. These are amongst the most famous market streets of Agra and play an important role in the economics of the city.

### 3.2.7 Statement of significance

Daresi area is significant owing to its fine 19<sup>th</sup>-early 20<sup>th</sup> century buildings exhibiting Mughal (Indo-Islamic) and few colonial architectural features and its role as a famous commercial street of Agra. It is culturally significant as it forms an important link connecting the city to the Jami Masjid.

## 3.3 The site today

Facade Improvement along Daresi road is proposed, while retaining the heritage wealth of the area, through creating open spaces and pedestrian focus, tackling issues of traffic congestion, creating space of parking, vending zones, heritage walk while enhancing infrastructure levels. This project covers all type of facilities and amenities.

### 3.3.1 Project Location

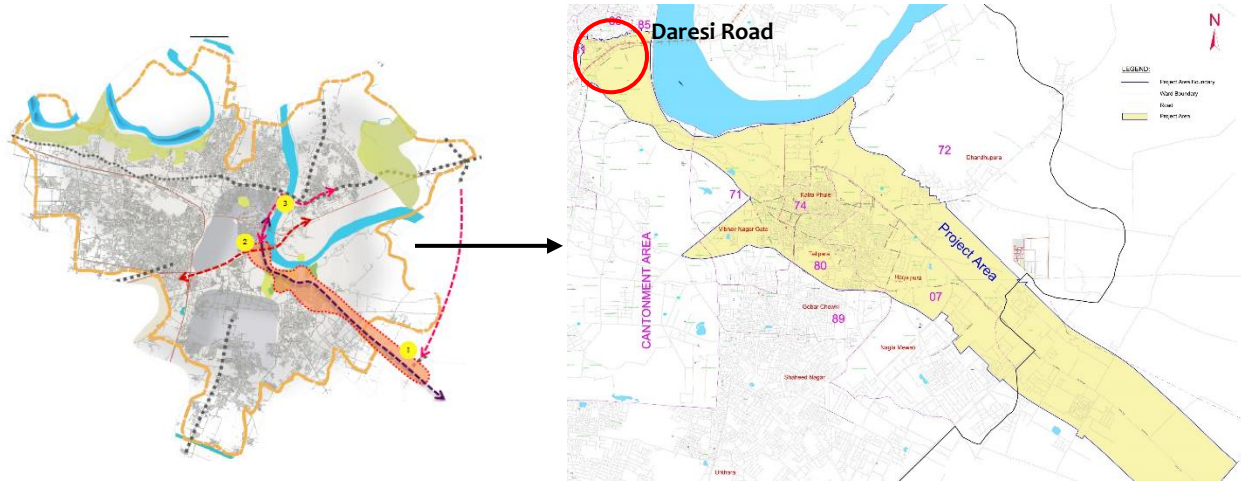


Figure 19 Project Location in Agra



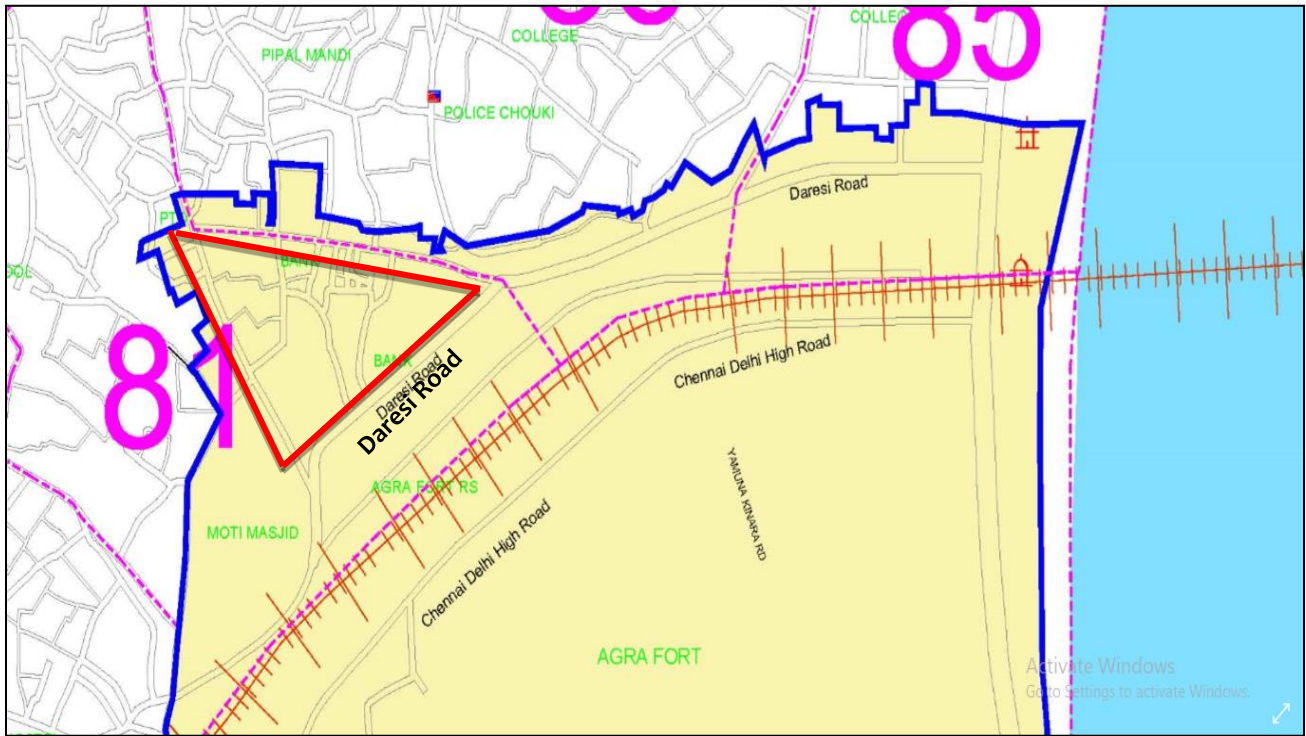


Figure 20 Project Location



Figure 21 Location of Façade Improvement

### 3.3.2 Assessment of factors and issues affecting the area:

Table 4: Assessment of factors and issues affecting the area

	Owner's needs	Present condition	Constraints
1.	Need for weather protection at the entrance	Tin sheds have been added	Tin sheds have covered the original arches and the carved panels above the entrances thus diminishing the architectural significance.
2.	Requirement of safe and strong doors for the shops at ground floor facing the street	Wooden doors have been replaced by metal shutters	They have partly covered the entrance arch. Sandstone columns in the front have been defaced and painted over. This is destroying the heritage character.
3.	Expansion with growing family size etc.	Extra floors have been constructed.	This could be in contradiction with the local byelaws. The structural safety has to be reviewed.
4.	Need for advertising	Hoardings/business name plates have been placed in a haphazard way	They are shrouding important architectural elements and spoiling the aesthetics
5.	Need for protection from nuisance of monkeys	Grilles have been added to upper floor balconies.	
6.		Damaged /missing architectural elements	Lack of skilled craftsmen to do the particular details High costs
7.	Need for electrical supply	Haphazard electrical wiring in front of the houses and shops	

## 3.4 Conservation policy

### 3.4.1 Principles of conservation relevant for the site

The following guidelines have been outlined keeping in view the international principles of conservation and local building regulations vis-a-vis the site condition and requirements.

(Ref: Burra charter, International Charter for vernacular heritage, International charter for historic towns)

- The façade and essential historic features must be preserved.
- Traditional techniques and methods are preferred. Modern techniques and materials should be used only if necessary.
- Any change is undesirable if it reduces the cultural significance. Such changes should be reversible.

- Any new work or addition must respect and have minimum impact on the cultural significance of the place.
- Every effort should be made to carry out the required treatment (such as waterproofing) to increase strength and longevity of the structure.
- Any fixed signage should match the age and character of the façade of the buildings.
- Problems encountered in the conservation works of each historic building will be tackled on a one to one basis.
- Maintenance is fundamental to conservation. Maintenance is necessary to retain the cultural significance of the place.
- Participation of the community, users and persons in responsibility is a key to success of the conservation process.

### 3.4.2 Action Plan

On the basis of the above study an action plan has been formulated which broadly outlines the tasks to be undertaken for the façade improvement in Daresi area. Individual studies have been presented in the later sector with detailed condition assessment and proposals for each building. The action plan shall be divided into four stages according to the importance of work. The stages of intervention have been described below:

1. **Immediate:** Any structural consolidation work that is required to protect the building/ building parts from collapsing or disintegrating shall be performed on an immediate basis.
2. **Short term:** The second level of intervention includes other civil works that would ensure longevity of the building. Following tasks can be performed in the second stage:
  - Cleaning of wall surfaces to remove dirt or algae deposition
  - Treatment of Plinth, DPC, rain water seepage, roofs, etc.
  - Repair of walls and balconies
3. **Medium term:** The third stage would involve the following measures:
  - repair and restoration of architectural details like arches, sandstone cladding, wall/lintel panels, railing details, etc
  - Painting and other finishes if required
  - Necessary fixtures
4. **Long term:** Since the beginning of the project the various groups and individuals who are associated with the place and involved in the management should be sensitized about the significance of the place. They should be given opportunity to participate in the process. Periodic maintenance and assessment of the work done needs to be carried out in order to protect the cultural significance of the place. This has to be through a joint effort by the users and the authorities.

## CHAPTER 4. CASE STUDY: AMRITSAR

### 4.1 Land

The project does not propose any intervention on physical ground as far as the façade improvement is concerned. Under this scheme, only facades of the buildings from Hall gate to Golden Temple and back to walled city exit near Hathi Gate are proposed to be taken up for restoration. Hence no land acquisition is required to proceed with construction. A ‘No Objection Certificate’ has been provided in form of resolution passed in the Municipal Corporation for commencement of work. The details on the numbers of façades in the project areas are summarized ahead. The total length of the street under the project area is 2.42 Kms, while the total length of building facades is around 4.5 kms.

### 4.2 Design Components for Street Façade Improvement

The entire length of the street was surveyed and studied in detail. After many design exercises, 10 components of facades were identified which shall be considered for overall improvement. These components are marked on the street elevations shown above and are listed on the facing page. Each component is described and dealt with in detail in the pages ahead. List of these components is as follows:

- A. Traditional Parapet Styles
- B. Traditional Balconies
- C. Traditional Jharokas
- D. Traditional door/window/ventilator styles
- E. Etched glass and display windows
- F. Ornamental columns & pilasters
- G. Exterior walls
- H. Traditional Chajjas Styles
- I. Commercial sign board
- J. Street lamp post
- K. AC Screens on Street Facades

#### 4.2.1 Traditional Parapet Styles

Precast Jali in exposed brickwork. This design is mostly found in buildings constructed during the Colonial period. Majority of the surviving old facades in hall Bazaar Street belong to this era. Precast Jali in plastered masonry work. Many facades in art Deco style of architecture are present in Bazaar Street and have balcony and terrace parapets in similar pattern. Metal Jali in exposed brick work along with cornice at the bottom in specially cast exposed brickwork. Plain exposed brickwork in between brick piers along with cornice and beading at the bottom in exposed brickwork.

The proposed design for parapet walls at terrace borrows from traditional architecture. The building system of a precast jali in exposed brickwork shall be followed along with the options of providing either a projection

or a cornice at the bottom of new parapet. The entire street façade shall follow similar system of construction. Water proofing shall also be done in order to avoid any maintenance issues after the Façade improvement has been executed. The existing variations in heights of the facades shall give the street a skyline much more in coherence with its historic nature. The work involves demolition of all the existing various types of parapets on street facades, and reconstruction as per the proposed design. The parapets of existing traditional facades shall not be demolished, but shall be restored in original construction system, design and material. This is to retain their authenticity and importance as per prevailing conservation norms.



Figure 22 Traditional Parapet Styles

#### 4.2.2 Traditional Balconies

The component most identifiable with Amritsar architecture is the wooden balcony component, with its assembly of posts, railings, door shutter, sloping roof and Jhalar at the bottom. The balcony is supported on I Section street girder below.

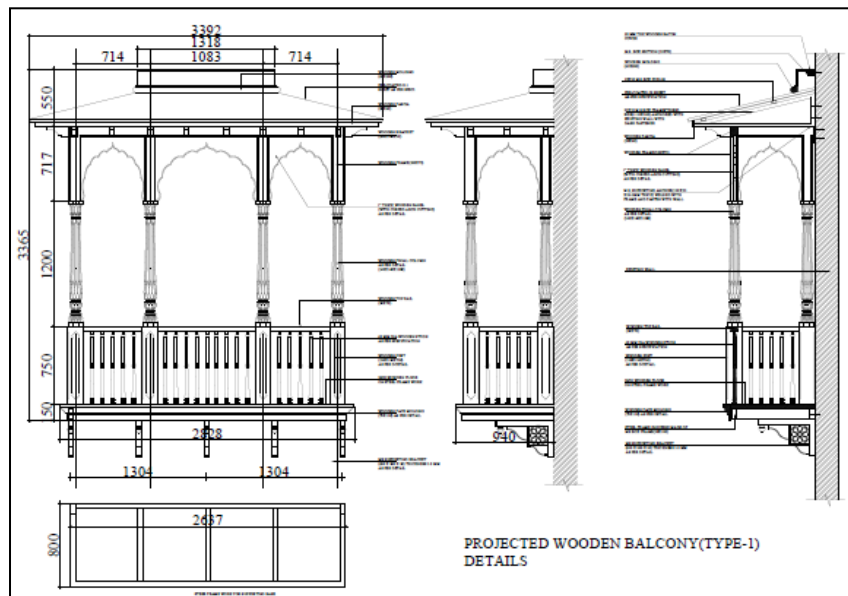


Figure 23 Balcony Projections

Another example of a traditional balcony without the door shutters and Jhalar at the bottom. The balcony is supported on brackets below.

An example of a traditional balcony hidden behind commercial signage of the shops, even at upper floors. Many unique architectural elements are not seen due to this, and hence cannot be maintained.

Two sets of interventions are proposed. One, the balconies of the traditional facades are proposed to be restored to their original form using the original materials which include wood, cast iron, steel and lime mortar brick masonry where required. The roof is proposed to be clad with a modern water proof. Material like High Pressure Laminate(HPL) which has a wood finish and appearance.

Second intervention is to demolish and redesign the balcony projections of the new facades. The materials used will be RCC, Steel and brick masonry in cement mortar, Glass Reinforced Concrete (GRC), HPL, Texture paint and wooden laminate flooring. Water proofing is also proposed to avoid any maintenance issue after the façade improvement has been executed. The sketch above illustrates the building system and materials.

#### 4.2.3 Jharokas

Jharokas is another element most identifiable with Amritsar architecture, mainly because it is here that it is found constructed in wood and not in stone. A typical design is with an ornate base and top, wooden shutters for windows with colored glass and steel railing in ‘jalebi’ design. have different design for elements like railings, eave boards, Jhalars etc.

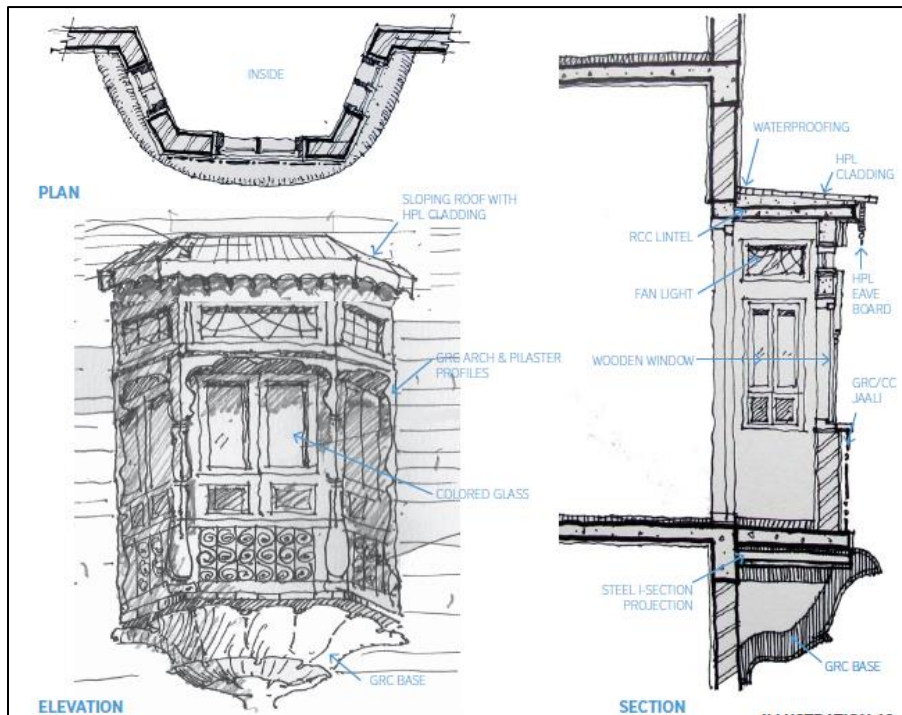


Figure 24 Traditional Jharokas

#### 4.2.4 Traditional door/window/ventilator styles

A typical design of door cum window found in the residential architecture of most old Indian cities. The room inside doubles up as a balcony in this case. The door window shutters are made in wood while the railing is in steel. An example of a similar set up in a building designed in Art Deco style of architecture. Only difference being that the room cannot be doubled up as a balcony, since the railing has been replaced with a masonry wall.

A typical setup of a window and a ventilator found in many cities of Punjab. Both are made in wood and plain glass.

An example of a traditional balcony being taken into the room by providing a pseudo railing and window shutters only. Pilasters are also seen in place of posts.

All components of the traditional facades are proposed to be repaired and treated appropriately to deter further decay. The doors, windows and ventilators of new facades are proposed to be replaced with traditional designs as per site conditions.

As mentioned earlier, a lot of buildings are being converted to commercial use in the project area. Hence showrooms requiring large display windows are starting to come up on upper floors of buildings too. An example of similar new façades under construction is shown here.

- A commercial complex with a glass façade in the project area
- The Ramada Hotel building in the project area
- Design references such the Jalebijali pattern can be used to create etching design on shop display windows
- Design references of a typical balcony set up may be etched on the shop display windows to give a coherent historic touch to the new facades

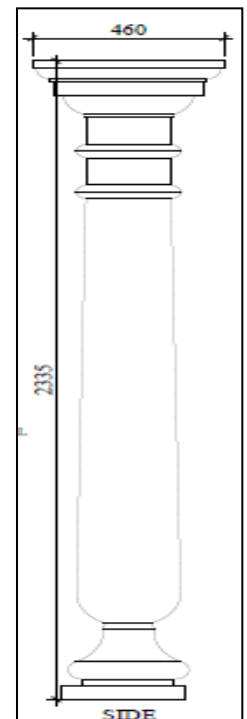
#### 4.2.5 Etched Glass

In order to provide a solution to the new commercial establishments coming up on the upper floors of the buildings in project area, and the other newer building with large areas of glass facades, a design proposal for etched glass has been conceived. Wherein reference from traditional architectural elements such as those described above will be etched on large glass panels to give some level of coherence to these glass facades with their historic surroundings.

#### 4.2.6 Ornamental Columns & Pilasters

The images above show the different architectural styles of pilasters and columns.

The current interface of shops at ground level with the street and pedestrian traffic is very chaotic as are other aspects of the project area. In order to enhance the user, experience the shop front are proposed to be treated



in a more aesthetically pleasing manner that befits a heritage bazaar. Taking references from the columns and pilasters designs, the shops frontage shall be improved as shown in the sketch above.

The materials used will be Glass Reinforced Concrete (GRC) and cement plaster PVC conduit for electrical wires, telephone wires and other cables along with accessories in surface/recess including cutting the wall or will run through Pilasters & columns PVC conduit for electrical wires, telephone wires and other cables along with accessories in surface/recess including cutting the wall or will run through Pilasters & columns.

A façade immediately next to a traditional building presents a very contrasting appearance due to its blankness and lack of artistic detail. Large portions of the new facades are either painted in coherent colors or are left unpainted and unfinished. It reflects poorly on the heritage zone of a historically significant city. An example of a new façade with balconies and Jali in a simple contemporary design. These may be replaced with traditional design and large wall areas may be painted in complimenting colors.

#### 4.2.7 Exterior walls

The image of Amritsar brings to the mind the color and texture of brick, since majority of the older buildings and to an extent even newer buildings are built in the same material exposed. Hence, the color themes imparted to the project are proposed to be different shades and textures of a clay brick. The finishes used include smooth or textured paints as applicable to different situations, exterior brick tiling, pointing of existing exposed brick exterior walls in lime mortar or cement as applicable.

##### A. Traditional Chajjas Styles

- An example of Chajjas over window, made in wood
- An example of a chajjas over window cum balcony, made in metal.
- Interventions are proposed in two situations. One is to provide a single Chajjas component to all windows present on the facades in the project area. Second is to provide a Chajjas above the shop fronts in order to attain certain level of uniformity in design of projections for sunshade.

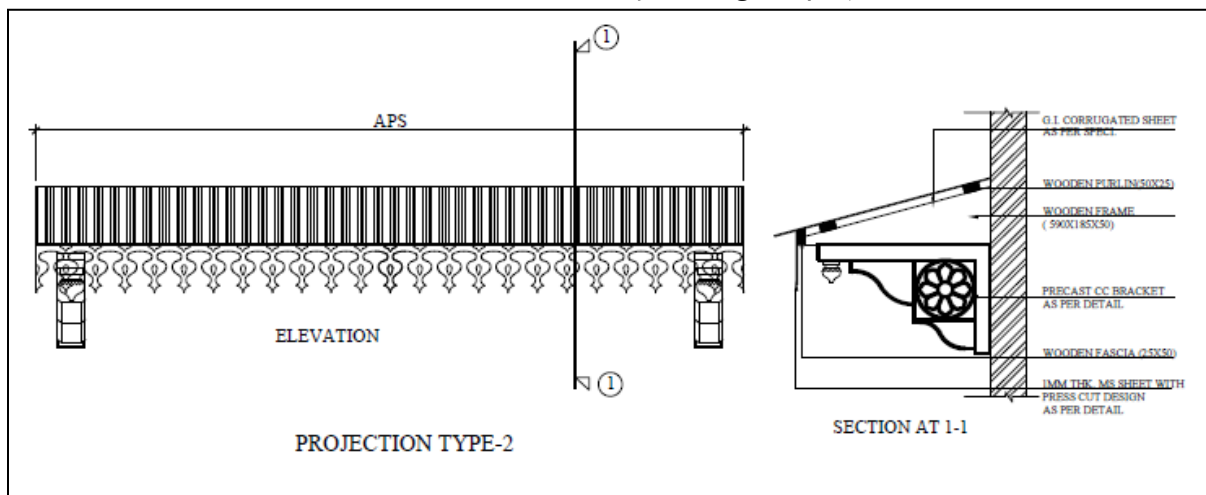


Figure 25: Traditional Projections



## 4.2.8 Commercial Sign Boards

### *Pattern of existing commercial signage*

All the above images show the current patterns of the commercial signages, which is almost overshadowing entire elevations of buildings. Some of these bigger hoardings are illegal also.

Uniform signages with white titles against a black background are proposed, one for each business establishment. These are proposed with aluminum casing and backlit vinyl boards, to be hooked onto building façade above the shop front as shown in the image above. In addition to these, side hung sign boards may also be provided where ever space is available. These may be in decorative cast-iron frames or simple steel frames. All commercial signage in the project area shall be of a 3 feet uniform height while the width will vary as per shop width. The language, font & graphics of the signage will vary as per shop width. The language, font & graphics of the signage will be as per the discretion and need of the business owner/establishment. No additional lighting shall be permitted, since the signage is already proposed as a back lit signage.

## 4.2.9 Street Lamp Post

The project area consists of a variety of street lighting fixtures. There is no uniformity or consistency in their style, design or purpose. In order to ensure coherence with the street façade improvement, a framework is given for the street lamp post fixture design and style. Where the street width cannot accommodate a lamp post, wall mounted units for street lighting will be used. The budgeting for this component is not being proposed under Central Financial assistance, as already has an allocated budget with Municipal Corporation of Amritsar.

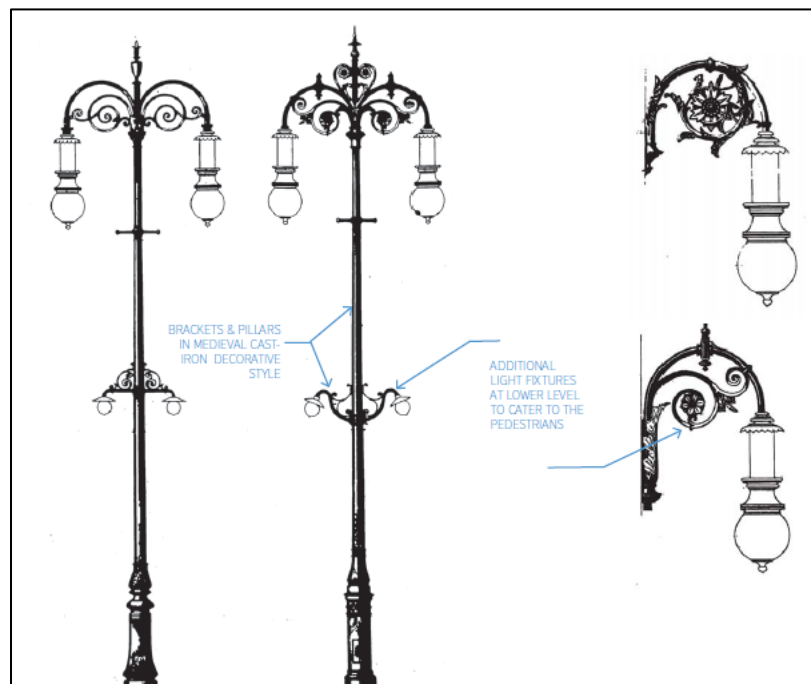


Figure 26 Street Lamp Posts

## CHAPTER 5. PROPOSAL FOR FAÇADE IMPROVEMENT ALONG DARESI ROAD

Façade Improvement of about 45 Traditional Households have been proposed along the Daresi Road, while retaining the heritage wealth of the area, through creating heritage walk while enhancing infrastructure levels. This project covers aspects related to façade improvement.

The following map shows the households selected for Façade Improvement.

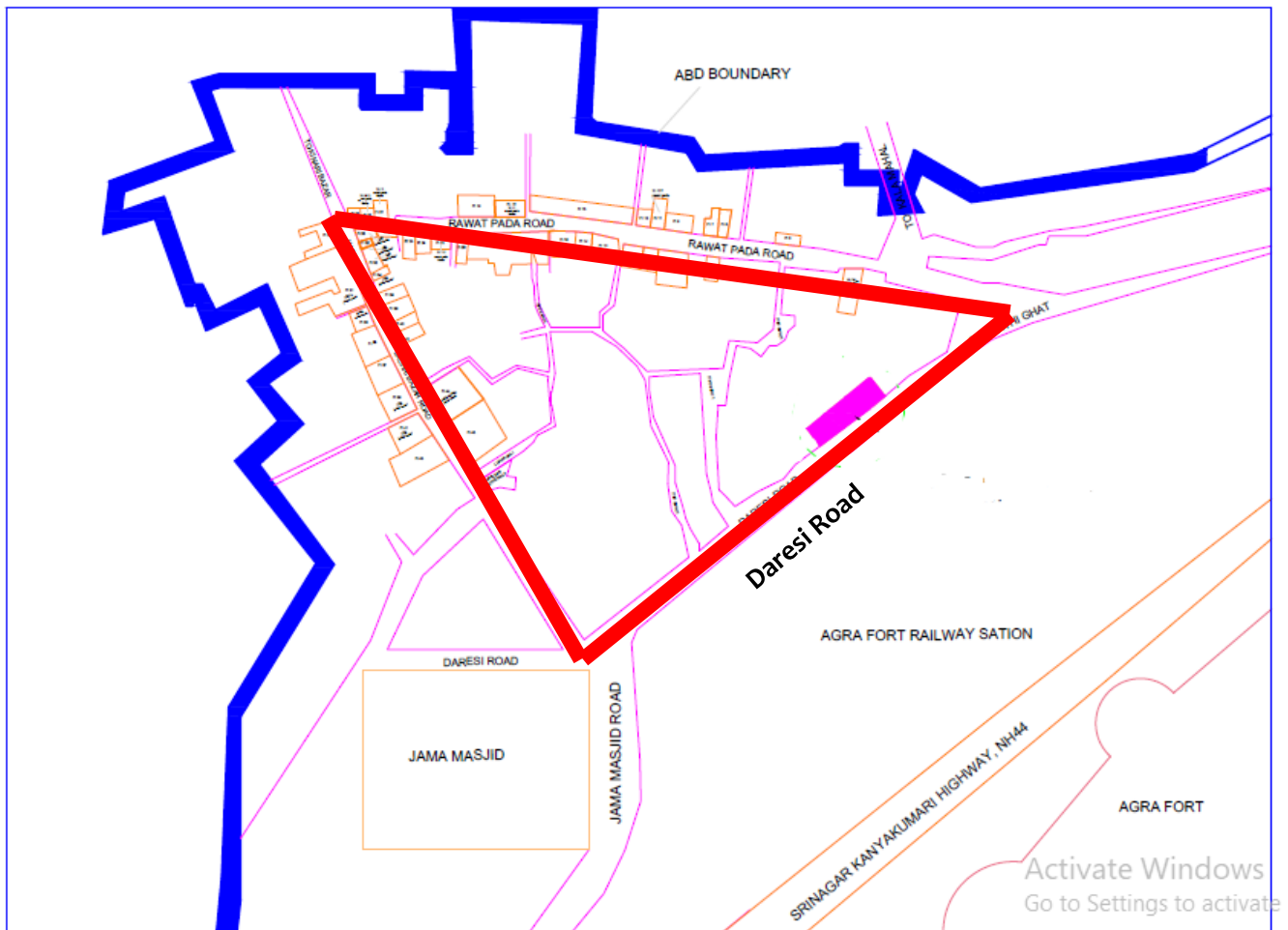


Figure 27:Households along Daresi Road

The common Proposals given for the Façade improvement of the identified 45 Traditional Household buildings are as follows:

- ❖ Repair of plinth
- ❖ Treatment of Dampness
- ❖ Introduction Of D.P.C
- ❖ Repair of existing chajjas.
- ❖ Repair of roof:Treatment of rainwater seepage, Drainage of roofs, Plaster/waterproof/paint.
- ❖ Removal of electric Poles/Transformers/Cables with provision of underground electrical utilityducts.
- ❖ Repair of Walls/Brickwork where required.
- ❖ Repair of door/window
- ❖ Removal of hoarding's.
- ❖ Design of Name plates forshops.
- ❖ Relocate A. C's, Coolers, Etc.
- ❖ Repair of Damaged/Missing ornamentation
- ❖ Removal of materials that coverarchitectural details
- ❖ Removal of architecturally inappropriateor incompatible exterior finishes / material
- ❖ Installation / Repair of exterior signage/business name
- ❖ Repair / Provision of exterior lighting

Condition Assessment of each of the 45 Traditional household buildings was done and based on this assessment issues were identified for each of the traditional household buildings. Detailed design attached in annexures.

## EXISTING FAÇADE OF BUILDING



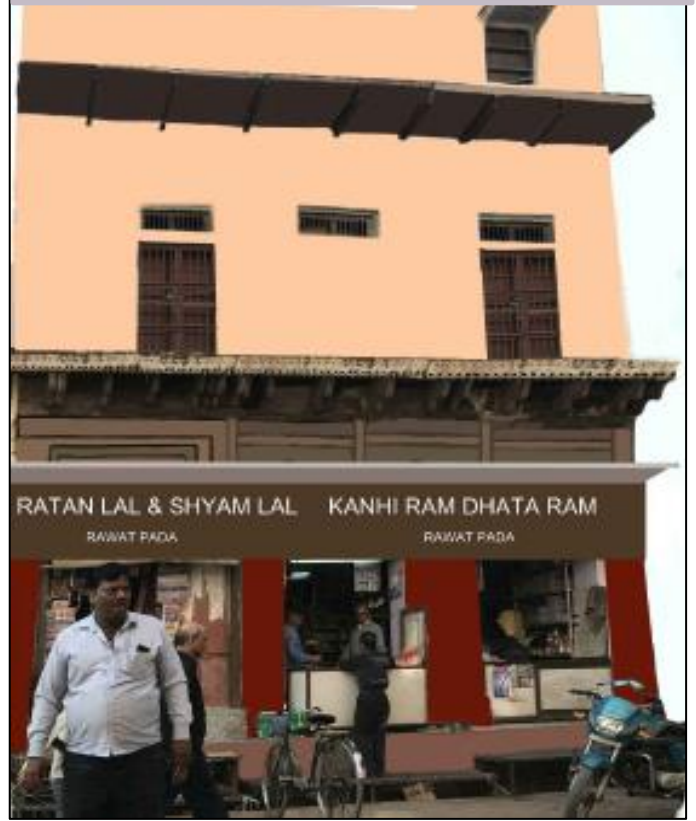
## PROPOSED FAÇADE OF BUILDING



EXISTING FAÇADE OF BUILDING



PROPOSED FAÇADE OF BUILDING



Issues

- Peeling of Paint
- Rising Dampness
- Water Stains
- Damaged Stone
- Damaged Element
- Incompatible additions
- Damaged timber
- Damaged bricks
- Damaged timber door& windows

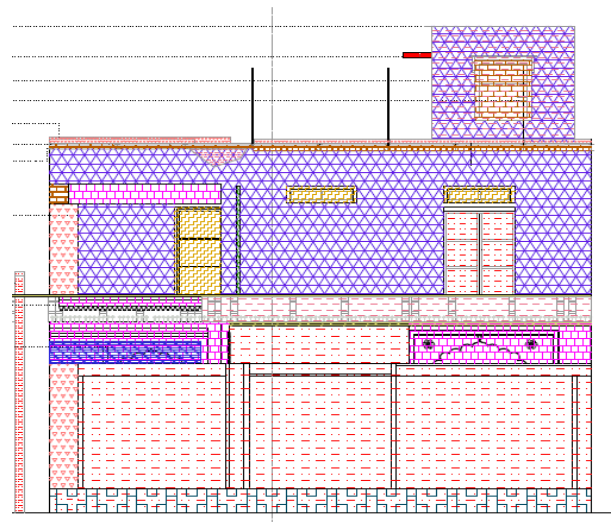


Figure 29 Building Condition assessment of building