

Scope of Urban Conservation in Agra

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Abstract— The majority of the historic cities in India are not only momentous for their historical monuments and precincts, but also for their rich and diverse mix of tangible and intangible heritage resources: built and natural heritage, communities of craftsmen and ordinary people with their beliefs, practices, and rituals. In such areas, structures are under a constant threat of demolition because of development pressure. Such special areas are generally under private owners where the need of development of the community cannot be denied. Enactment of rules and restrictions need to be imposed, public awareness as well as people's involvement. What is required is a pragmatic approach to make people understand that conservation is not a liability but a desirable approach for the sustainable and holistic living, an approach that ensures the better quality of life and also economical in the long run. The present study focuses on protection, restoration and enhancement of the image and essence which includes key monuments, buildings, and landmarks, together with associated contents and surroundings, throughout the old city. For this study, the evolution process of the city over the years is understood and the historical context is analyzed. To study the changes in the characteristic features, the historical fabric and the major causes of deterioration are understood. Tried to minimize permanent cultural heritage losses and improve, contribute and rehabilitate to social life. The major findings show that the basic facilities are lacking behind and also the new construction is a threat to the urban fabric of Agra. The recommendations for the same also portrait well.

Key words: Urban Conservation, Agra

I. INTRODUCTION

Much of the older urban fabric of India is being replaced comprehensive by new developments due to the lack of a conservation policy in India's urban development and the emphasis on physical rebuilding for immediate economic gain.

The result is that many old urban areas are in the process of losing their local character under the pressure of urban redevelopment. Urban conservation is centrally concerned with preservation of buildings and artifacts either individually, in groups for local areas...indeed, for whole towns and cities. However, the motivation and justification for this process usually invoking the state intervention of some kind, is tied up with a range of aesthetic, socio-cultural, ideological and economic rationales which vary from place to place. (Ashworth and Tunbridge (1990)

According to Erageldin (2000), some open-ended and logical questions need to be addressed. First, what are we trying to preserve? a number of major buildings, the urban character, a way of life? Second, why do we want to preserve whatever it is we choose to preserve? Because it is part of our heritage? to improve the lot of inhabitants of the old city, or to generate a new resource to earn money from tourism?

Third, whom are we preserving historic areas for? Are the present users to be the prime beneficiaries or intervention? The country at large? Is it being done for the sake of generations yet unborn?

Depending on how the previous set of questions is answered, the responsibility for action and the type of intervention will differ dramatically. Unless these questions are answered, different parties will continue working in isolation, and will continue to talk at cross purposes. Some organizations should take these questions seriously and search for answers.

Otherwise, old Cairo shall either disappear because of the uncoordinated efforts and the contradictory approaches to conservation, or will turn into an open-air museum, perhaps physically pleasant, but socially lifeless.

II. AGRA

Agra city is of historic importance, which is fully evident from the numerous historical monuments in and around the city. The Hindu epic Mahabharata refers to it as 'Agraban', part of Brij Bhoomi, the homeland of Lord Krishna.

Legend has it that Agra was founded during the region of Ugrasen, grandfather of Lord Krishna. The existence of Agra city was accounted for in 1080 A.D., by Khawaja M.S.Salman, a poet, as a flourishing city with a string fortress built amidst river and lake hills.

This was ruined by the invader Muhammad Gazni in 1080 A.D., which reduced Agra to a small town. Agra continued as a village until the core of the present city, was laid by Raja Badal Singh around 1475 A.D. The earliest recorded history of Agra is its establishment by Raja Badal Singh king.

Modern Agra was founded by Sikandar Lodhi in the 16th century. It grew into an important power centre under the Delhi Sultan Sikandar Lodhi and he shifted his capital from Delhi in 1504. Babar also stayed in Agra for some time and introduced the concept of square Persian-styled gardens. Emperor Akbar built Agra fort and Jehangir did the beautification with gardens and palaces. The city has a proud possession of —Taj Mahal, as one of the Seven Wonders of the World.

In addition to its historic importance, Agra is a main center of political, economic, commercial and cultural activities.

The origin and growth of Agra can be traced to several hundred years, which witnessed a series of historical events leading to its present form, structure, character, culture and economy. The growth of Agra started with the imperial favour, as a seat of emperor of India.

A. Geography

Agra is situated 27.18° N 78.02° E, on the bank of Yamuna River. It has an average elevation of 171 meters (561 feet). Topographically, Agra is fairly flat, gradually sloping

towards the river. Agra is the fourth biggest city in Uttar Pradesh.

B. Regional Setting

Agra forms an important regional urban center, as it is centrally located on the national map.

Agra is a major transport node at the regional level as well as at the national level as all traffic whether by rail or road going south regularly passes through the city. This has also led to an extremely rapid and haphazard growth pattern.

It has a very strategic location on the union of 3 various geo-physical regions specifically the plain of Uttar Pradesh, the upland of Madhya Pradesh and therefore the desert of Rajasthan. The city additionally falls within the center of the four- culture areas - Braj, Bundelkhand, Rajputana and western U.P. Each of these factors has played vital roles in shaping the history of town.

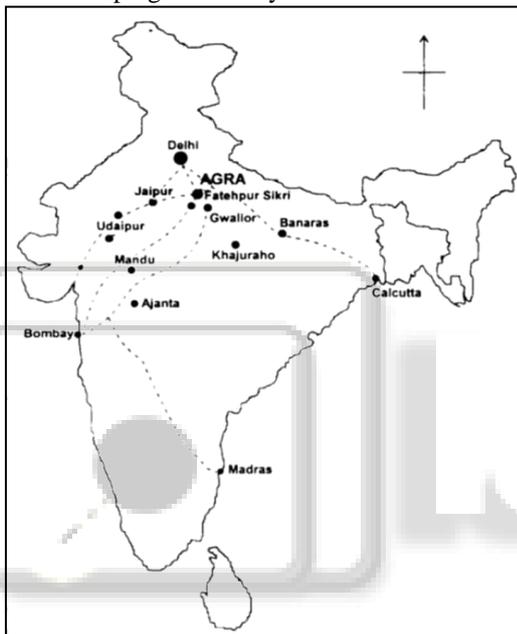


Fig. 1: Location of Agra in India
Source: CDP for Agra City under JNNURM



Fig. 2: Regional setting of Agra city
Source: CDP for Agra City under JNNURM

C. Multiple Layers of History in Agra

Agra is an ancient city that embodies the Mughal history of India, having been the capital of the Mughal Dynasty. Its origin and growth can be traced back to several hundred

years, during which it has witnessed historical events that have contributed to its present form, structure, character, culture and economy. The city witnessed the rule of various Hindu kings, Mughal emperors, followed by the colonial period. Its historic importance is evident from the numerous historical monuments in and around the city. The city boasts three World Heritage sites namely – the Taj Mahal, Fatehpur Sikri and Agra Fort and innumerable other monuments of national and international importance.

– Sikandar Lodhi Period (1488-1517 A.D.)

He captured Agra in 1492. He rebuilt city, expanded it into a trade and intellectual centre. The town was mainly on the left bank, whereas Baradari near Sikandara was erected on the right bank of the river Yamuna.

– Babur's Period (1526-1530 A.D.)

The city, consisted of a sequence of gardens and pleasure pavilions line along the river, expanded only the left bank of river.

– Humayun Period (1530-1555 A.D.)

Humayun Mosque and Gyarah Siddi Kachpura came along the left bank of yamuna.

– Akbar Period (1556-1605 A.D.)

He rebuilt red sandstone fort at the site of Badalgarh Fort in year 1565. His Agra developed around the fort on the west bank of yamuna and was the nucleus of the 16th and 17th century mughal city.

The pattern of development was very much like a small semi-circular ring encircling the fort towards its North-west, west and south-west while the eastern side fronted onto the yamuna.

A web of bazaars all radiating from the fort, adjoining a ring road can be discerned even in the present layout of Agra. This seems to be the oldest part of the city on the west bank, as we know it today.

The population of Agra during Akbar's time was about 2 lakhs and the accounts of Ralph Fitch, who visited Agra in 1585 A.D. give some idea of the city as it must have been at the time—Agra is a very great city and populous, built with stone, having fair and large streets with river running by it.

The road to Fatehpur Sikri was also constructed during this period.

– Jahangir Period (1605-1627 A.D.)

Jahangir's Period saw gradual expansion of Akbar's city; however no significant additions seem to have been made at this time.

A lot of significant structures have been added to the city during this time, though no great expansion of the overall urban fabric seems to have taken place.

– Shahjahan Period (1627-1658 A.D.)

During this period, the city added the fringes of Tajganj, Lohamandi and Shahganj. Tajganj was the direct outcome of the building of TajMahal, as it housed the craftsmen, who worked on it.

Shahjahan was a prolific builder and besides the Taj itself, he added a huge number of other smaller edifices to the city.

The city area, on one side of the river was 7 sq. km, having 7 km in length and 1 km in breadth. On the eastern bank, it covered 2.5 sq. km. All houses faced the river side,

henobles mansions were located nearest the fort and fronting onto the river, and a number of structure were added on to the fort, some replacing the earlier Akbar's edifices.

Heights of building varied from three to four stories. There was also an important market called Nakhas for animals like horses, camels, oxen and all kinds of merchandise. An octagonal (Muthamman chowk) existed between Delhi gate of the Redfort and Jama Masjid.

It had canals and fountains, pathways, shops of stone masonry with cusped arches on all sides.

– Aurangzeb Period (1658-1701 A.D.)

The focus shifted from the time of Aurangzeb and the later Mughals who succeeded him, to Delhi, the new imperial capital. However Agra continued to grow and occupied a much larger area than before. It was after Aurangzeb, the dominance of Mughal Empire started declining and most of the 18th century Agra was under Jat dominion.

– Colonial Period (1803-1947 A.D.)

In 1803 Agra was formally under the British. Not only were the outlying peripheral areas were developed, but also large chunks of the mughal city were rebuilt upon. The continuous mughal urban fabric of the time of the later mughals became dissected and criss crossed by the intrusion of colonial development.

The chowk was destroyed in 1871-73 when the railway track was laid out and the Agra fort railway station was founded on its site and Agra became an important railway junction. The civil lines towards the north, the introduction of the railways, factory area lining the river towards the north east and the cantonment to the south with its golf course and racing ground, were the major additions during this time.

The surviving mughal city now existed in only isolated with a girdle of colonial development. Thus, Akbarabad, Tajganj, Shahganj, Lohamandi and Gokulpura from distinct patches of mughal urban fabric within a colonial encirclement, a number of new roads like Lawrence, Gwalior, Taj and Mall road were built during this period.

The 19th century construction work also included the strand road connecting TajMahal and Redfort, as a famine relief measure in 1838. The present day Shahjahan Park was a relief public works undertaking in 1879.

– Carlleyle Report (1871)

The most Valuable work, however, is an A.S.I report compiled by A.C.L Carlleyle, the then assistant archaeologist. Carlleyle records the location, condition historical background and physical configuration of almost all the monuments and historic structure of the time. The report also attempts to reconstruct the history and growth of the city on the basis of the material evidence that the author could collect and excavate, notably the remains of the city wall and its 16 gates. According to Carlleyle, the city covered an area of 12 sq. miles. The extent of the city, reconstructed on the basis of Carlleyle's report has been included in this section.

– Post-Colonial to Present Day

The Post-Colonial growth, that has largely taken place in the immediate aftermath of partition, is extremely haphazard and amorphous, it consist largely of the mushrooming of a huge number of refugee colonies all around the colonial city, the central commercial and office functions still being located

within Mughal and the colonial enclaves, thus causing considerable stress to these, specially to the old Mughal areas.

Much later after Independence Agra case to the limelight with the formation of TajMahal as a World Heritage Site. In today's time Agra is the second city, after Delhi (Humayun's Tomb, Red Fort, Qutub Minar) to have three World Heritage Sites mainly the TajMahal, Fatehpur Sikri and Agra Fort. Besides these three monuments the city of Agra also has other monuments and gardens ranging from Babur's time to Shahjahan's rich time. Itamad-ud-Daula, Chini-ka-Rausa, Mehtab Bagh and many others which have rich architectural and cultural significance.

D. World Heritage Sites

India has 32 World Heritage Sites out of which 23 are Cultural Site. Agra Fort is one of them. Agra has 3 world heritage sites i.e. Taj Mahal, Agra Fort and Fatehpur Sikri.

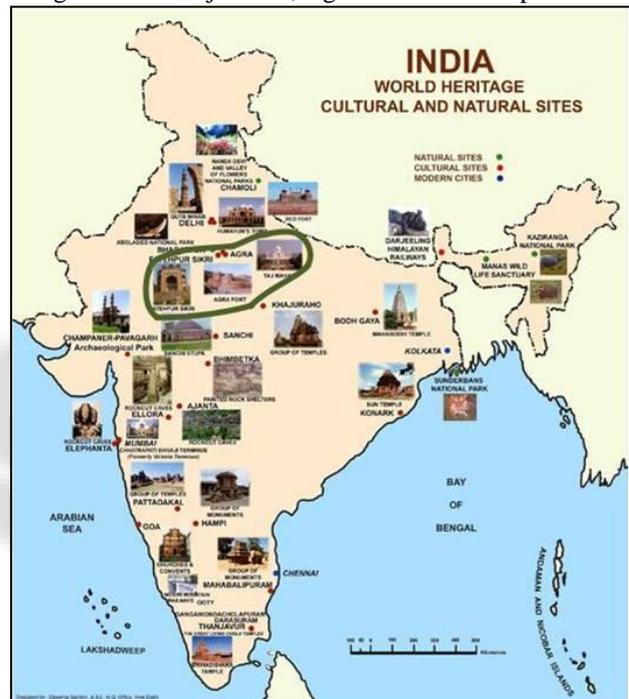


Fig. 3 Location of World Heritage Sites

Source: UNESCO

E. The Taj Mahal & Tajganj (Formerly Mumtazabad)

After the death of emperor Shah Jahan's deceased wife, empress Mumtaz Mahal in the year 1630, emperor Shah Jahan started building the legendary Taj Mahal in the year 1632 (which was subsequently completed in the year 1653).

Tajganj was previously known as Mumtazabad, named in the memory of Mumtaz Mahal. At that time majority of the engineers, architects, labourers, artisans and craftsmen were provided accommodation in the area adjoining what is today's Taj Mahal's South Gate. This area gradually developed into Mumtazabad where Shah Jahan used to visit on Fridays. The earlier Mumtazabad is now known as the Tajganj.

The ancient Mumtazabad was a busy marketplace and caravanserai during the 1640s, but due to a decline in trade, it had lost its grand and pomp by 1650s. The market was even functional in full swing during the British rule in India.



Fig. 4: 1856 Historical Map of Agra with Taj Mahal and Taj Ganj

Source: DPR submitted by Cities Alliance

The Taj Ganj, was originally part of the Taj complex, encountered by anybody who rarely walks through the southern gate.

Today one can find out only remains of the original bazaars and caravanserais. A densely built city quarter has grown up in which the architecture of Shah Jahan has been buried almost entirely. The four gates of the central square preserved (although two only in part) and protected by the Archaeological Survey of India.

The Taj Ganj is, however, an integral part of the Taj Mahal, a vital component of its planning. The charm has been lost, but there is no doubt that it should be given back to the Taj.

I am planning to do this in the form of an architectural model that will reconstruct the Taj Ganj, the entire complex of the Taj Mahal, and the River Yamuna. The model will enable visitors to understand that the Taj is unique not only because of the grandness of the tomb building but also because of the carefully planned creative design, the scale, and the multifunctional complexity of the entire compound. It will also draw attention to the Taj Mahal as a constituent part of the urban scheme of Agra. The area originally was inhabited by a population of 20,000 who constituted the workers of Taj Mahal.

F. The Tangible & Intangible Heritage of the area

In 2003 UNESCO defines intangible cultural heritage as: The practices, representations, expressions, knowledge, skills—as well as the instruments, objects, artefacts and cultural spaces associated therewith—that communities, groups and, in some cases, individuals recognise as part of their cultural heritage. This intangible cultural heritage, transmitted from generation to generation, is constantly recreated by communities and groups in response to their

environments, their interaction with nature and their history, and provides them with a sense of identity and continuity, thus promoting respect for cultural diversity and human creativity.

The Agra city is also endowed with rich cultural/intangible heritage. Mir Taqi Mir, Mirza Ghalib, and Nazir Akbarabadi are the three great poets of Urdu literature has been linked with the place. Nazir lived and died in the city and is buried close to Taj Ganj, to the south of the Taj Mahal. The present form, structure, culture, economy and character of the city have witnessed a series of rich historical events.

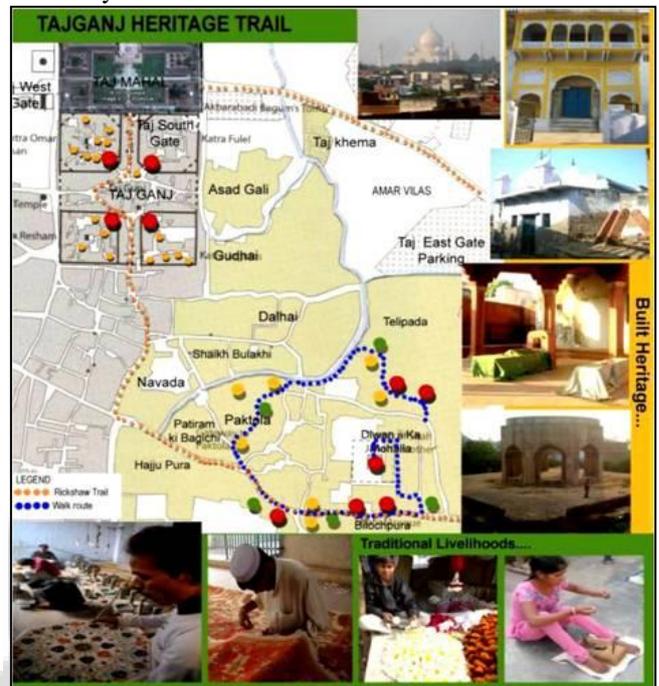


Fig. 5: Taj Mahal, Heritage Trail

Source: DPR submitted by Cities Alliance

Cultural heritage was now defined to include monuments, groups of buildings and sites. This was seen as a clear move to ensure that groups of buildings and urban settings were being protected. Cultural heritage was defined by UNESCO in 1972 as:

1) Monuments

architectural works, works of monumental sculpture and painting, elements or structures of an archaeological nature, inscriptions, cave dwellings and combinations of features, which are of outstanding universal value from the point of view of history, art or science;

2) Groups of Buildings

Groups of separate or connected buildings which, because of their architecture, their homogeneity or their place in the landscape, are of outstanding universal value from the point of view of history, art or science;

3) Sites

Works of man or the combined works of nature and of man, and areas including archaeological sites which are of outstanding universal value from the historical, aesthetic, ethnological or anthropological points of view.

The findings of the same in the area are as follows:

– Built Heritage

Taj Ganj area has rich built and living heritage. A mapping of the heritage structures in the area includes the lesser-known

monuments (protected and unprotected), which includes tombs, shrines, mosques and temples, traditional houses and old wells. ASI protected monuments such as the Shahi Mosque, Makbara of Diwan ji Ki Begum and four Katra gateways and unprotected monuments such as the Dargah of Lal Bukhari, old mosques and temples are there in the city . 49 traditional houses and 8 old wells have also been mapped. The Heritage mapping has also been integrated with the INTACH listing.

– Cultural Heritage

Being in close to the Taj Mahal the residents of the Tajganj derive their livelihood from tourism. Though 26% are in services (public/private) yet a large number is dependent on tourism for their earnings. Many of them are stone craftsmen like their ancestors but most of them have now changed profession and have become camera-men or guides at the world heritage site. Some of them have developed hotels and others sell souvenirs and other items related to tourism. Tourism has no doubt help the neighbourhood to sustain, but in a non-systematic fashion.

– Stone Craftsmanship

The stone craftsmanship is a dying art in the neighbourhood and in the entire city because of the advancement of machines in people’s daily needs. There are only a handful of people left in neighbourhood who practice this endangered art of stone craftsmanship. The clients are growing but the art is dying. Walking by the lanes of Katra Reshun or Katra Omar Khan ne can find small shops where the craftsmen are found working hard on their inlay design-work.

– Traditional Craftsmanship

The neighbourhood is also rich in several traditional handicrafts such as leather work, marble inlay work, zardozi embroidery, ittar making and traditional food crafts.

4) Living Heritage

– Kulkul Mela

On the 25th of December every year the Kulkul Mela, which is the annual pigeon flying is held for six days. The terraces of many of the houses in Tajganj can be observed having kabootar-khana as it has become a cultural practice to train the pigeons for the Kulkul festival. At this time of the year the sky of the Tajganj neighbourhood can be found to be covered with pigeons creating a beautiful view from the rooftop restaurants against the backdrop of the majestic TajMahal. It’s a practice that gives historical and cultural identity to the people and the place. The people of the neighbourhood also organize this festival.

– Nazir Basant Mela

As mentioned earlier about the poets of Agra, Nazir Akbarabadi is the only poet who is found to have contributed to the rich Urdu literature of Agra. The poet is buried very close to the area and every year on the occasion of the festival Basant Panchami, Nazir Basant Mela is celebrated. The event is organised in Nazir Park where the poet is buried. The festival started being celebrated about 80 years ago, as a community initiative.

– Salaana Ur

On the occasion of the death anniversary of Emperor Shahajahan, the builder of the TajMahal, an annual Urs, "Saalana Urs" is organised. This is also a community event and is organised by the residents of the community. The urs

lasts for three days and is also marked for its long chadars which are offered on the shrine of the emperor as a secular fabric.

– Taj Mahotsav Festival

The popular Taj Mahotsav festival is celebrated at Shilpgram which lies in the premises of Tajganj. The place lies off the road to Fatehabad in the south-eastern part of Tajganj. The place is an important tourist destination and there is lot of activity going on during the festival days.

III. PARAMETRIC DATA OF AREA

A. Demographic Profile

1) Population Growth

Census 2011 estimates the population of Agra city to be, 16,86,976, having increased from 12,75,134 in 2001. Its growth rate of 30.37% between 1991 and 2001 seems to have slowed down a bit and is calculated at 24.3% for the last decade. The city experienced its maximum growth rate (32.15%) during 1971-81, when the Nagar Nigam limits were extended to incorporate more than 100 per cent of its original area. Most of this population lives within the Agra Nagar Nigam area.

Year	Area (Sq. Km.)	Population (in Lakhs)	Decadal Growth Rate (%)	Population Density (per sq. km.)
1961	61.80	4.62	-	7476
1971	61.80	5.91	27.92	9563
1981	141.00	7.81	32.15	5539
1991	141.00	9.78	25.22	6936
2001	141.00	12.75	30.37	9043
2011	120.57	15.86	24.39	13152

Table 1: Population & Population Density Decadal Growth

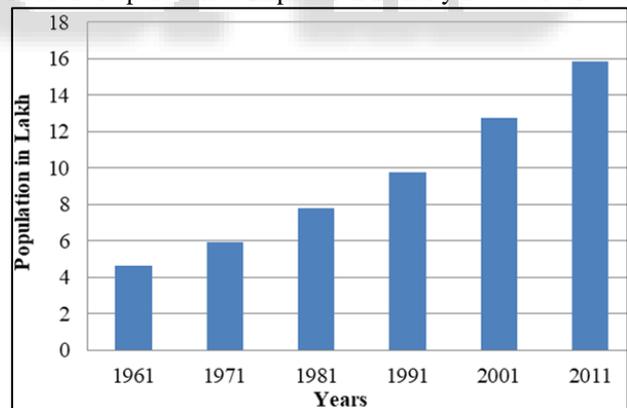


Fig. 6: Population Growth in Agra

11% of the population is under 6 years of age. For a city with million plus population and growing at such a rapid pace, infrastructure development has clearly failed to keep pace with population growth. It has been observed that the population of the city has increased at different growth rates. In 1981 the Nagar Nigam area has extended from 61.80 sq km to 141.0 sq km. The population increased during 1971-81 shows 72.93% natural increase and about 27.07% immigration, which show about 27.92% total increase. It has 90 municipal wards that are bundled into 8 revenue wards. In 1971-81, ANN limits were more than doubled from its original area of 61.80 sq. km.

The density is lowest in colonial Agra whereas in the historic city areas, prosperous from Mughal period, like Lohamandi, Shahganj are highly congested.

– Land Use

Master Plan of 2021 estimated urban population of 22.5 lakh. The total future land requirement for the city is 200.36 sq km. The percentage breakups for the proposed Land use are given below:

Land Use	Percentage
Residential	49.53
Commercial	2.72
Industrial	8.01
Office	2.54
Tourism	0.89
Public	8.80
Traffic and transportation	10.79
Recreation & Open spaces	4.37
Other open spaces	2.10
Other	10.25
Total	100

Table 2: Land Use - Master Plan 2021
Source: Agra Master Plan 2021

B. Socio Economic Profile

1) Sex Ratio

The sex ratio measures the extent of prevailing equity between males and females in the project area. As per the Census 2011, the sex ratio in the city is 875 females per 1000 males.

2) City Economic Profile

Agra is basically a commercial city. The major part of its industrial activity is in the form of small-scale and house-hold industries. The vital industries are textile, leather, foundries, diesel engines, generator sets, electrical products, fans, pipes, C.I, casting, animal skin products as well as shoes, steel rolling, packaging materials, etc. The foremost handicrafts are marble, leather, carpet, and brassware creative zari and jewellery crafts. With work force participation rate of 25.5 per cent, majority of work force (about 89%) is engaged in tertiary sector. There are 5263 small scale industrial units with investment of Rs. 263.15 crore. Apart from these units there are over 750 cottage units producing petha. Most of these units are in the narrow lanes of the centuries-old Noori Darwaza Market.

C. Identification of Valuable Resources

1) Water Supply

The source of water supply in the city is mainly surface water. The river Yamuna is the only surface water source, which enters the town from northeast corner, flow towards south of the city for some distance and then turns towards left.

There is extreme shortage of raw water in the river Yamuna during summers, the lowest discharge has been observed as 101.7 mld. Out of this discharge the average summer drawl of raw water is of the order of 99 mld.

2) Water Bodies

Nagar nigam has 41 listed pokhars/ponds of different sizes. These water bodies, are extended in four revenue wards specifically Lohamandi, Hariparvat, Chatta, and Tajganj, comprising an area of about 0.45 sq.km. Entirely shortage of

water bodies in Revenue wards of central and south-western area of nagar nigam.

13 ponds out of these 41 water bodies have either been fully or partly encroached or filled by earth. Example of such natural ponds are Tota ka Taal, Guru ka Taal. 28 ponds comprising 0.37 sq.km (34 bighas) are still available in the pond form itself.

There is urgent need of protection, beautification, and conservation of 36 (including the 8 partly filled ones) ponds.



Fig. 7: Water Body Kale Ka Taal has been Totally Encroached by Multistoried Building

Source: CDP for Agra City under JNNURM

– Historic Housing

Traditionally, housing in India was designed taking into account considerations of climate, materials, technology, functional requirements and cultural aspects. In addition to the local native traditional influences, Mughal influences also made a significant contribution towards also made a significant contribution towards historic housing in India.

Some of the legal issues are: a) rent control acts in various cities have had a major effect on housing in the old city/ traditional housing areas; b) most of such housing is tenant occupied and since the legislation is tilted over the tenants and eviction is very difficult, owners lose interest in the property and do maintain the same (rents are very less); c) tenants have no incentive to maintain such buildings; and d) over a period, the buildings deteriorate.

The challenges therefore are:

- Property values in area have steeply gone up. On account of this, many owners of properties would love to redevelop their properties by destroying the old building instead of conserving the same.
- Poor maintenance results in dilapidation and collapse.
- Most of the traditional housing has remolded or totally non-existent thus on get the utmost business price out of it.
- Historic housing is usually personal estate and so interventions are very difficult, unlike in other historic buildings (monuments).
- Sub- divisions of property, as a number of beneficiaries need their share leading to faster demolition instead of adaptive utilize.
- Growing desires of population demand for house.
- Where historic housing exists, business activities are intense in the area.
- Shortage of awareness and finances.
- There are no laws for conservation of traditional housing areas.

- Fatefully, because of the rent control acts, we still have some examples of historic housing left.
- Tourism as Economy

Tajganj region has developed into an enchanted commercial centre. Being in close proximity to the Taj Mahal the residents of the Tajganj derive their livelihood from tourism. Though 20% are in services (public/ private) yet a large number in dependent on tourism for their earnings. Many of them are stone craftsmen like their ancestors but most of them now changed profession and have become camera-men or guides at the world heritage sites. Some of them have developed hotels and others sell souvenirs and other items related to tourism. Tourism has no doubt help the neighbourhood to sustain, but in a non- systematic fashion. Today the place is flourished by overwhelming tourist and business enterprises. The place is provided with surplus accommodation enterprises and merchandising. The Tourist Shopping Arcade is the best place for shopping in Agra. The shopping arcade has renowned stores that merchandise leather goods, carpets, rugs, jewellery, arts and antiques, glass ware etc.

Being in proximity of Delhi and being well connected to it by rail and road transport, Agra is prime city for domestic as well as foreign tourists. It is also estimated that nearly 55% of all foreign tourists visiting the country make a trip to Agra. The tourist arrivals to the Taj Mahal in the year 2005 were about 18, 87,307 with 82.02% Indian tourists and 17.98% as foreign tourists.

Year	Domestic	Foreign	Total	Growth Rate (%)
2008	26.35	5.92	32.27	-
2009	25.86	4.92	30.77	-04.63
2010	40.81	6.48	47.29	53.69
2011	46.04	6.92	52.97	12.01
2012	33.73	4.19	37.92	-28.41
2013	50.94	7.41	58.35	53.88
2014	53.78	6.95	60.72	04.06
2015	58.42	6.71	65.14	07.28
2016	55.48	6.94	62.42	-04.18
2017	56.19	8.62	64.80	03.81

Table 3: Number of Tourist-Taj Mahal (In Lakhs)

Source: U.P. Tourism Office, Agra

The above table shows that the tourist inflow in the city is increasing every year except in the years 2009, 2012 and 2016 where there is a rounded decline.

As per the figures provided by U.P. Tourism Office, Agra for the last 10 years the maximum number of tourist was in the year 2015.

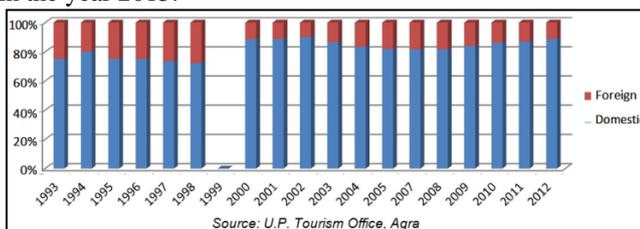


Fig. 8 Composition of Tourists-Taj Mahal

Source: U.P. Tourism Office, Agra

Foreign tourists comprise about 20% of the total tourist arrivals. The growth rate of the tourists is varying in all the years.

About 90% of the tourists both domestic and foreign visit the three main sights TajMahal, Agra Fort and Fatehpur Sikri. The other tourist places like Sikandara, Itmad-ul-Daula, Ram Bagh are visited by very less number of tourists.

D. Govt. Bodies approach toward Urban Conservation

1) Agra Master Plan 2021

Agra Master Plan 2021 envisages an urban area of the order of 20,000 ha which has been subdivided into various land uses. It is also estimated the housing shortage for the plan period of the order of 2.5 lakh. The important policy decisions relevant for the purpose of preparation of CDP are as under:

a) Industries

Non-pollutant industries are allowed to function in the city, industries related to software technology and information technology be promoted, other polluting industries in the city be considered to be relocated

b) Tourism

Proper access for the monuments and the places of heritage value, a barrage to be made downstream of Taj in order that Yamuna river retains water and the river is used for the recreational purposes, area north of Taj Mahal across the river be developed as a National Park so that it attracts the tourists, international Golf course and stadium be constructed, recreational activities on Fatehabad road in about 175 ha. be used. The city is connected internationally by locating up an international airport. Tajganj be developed and beautified in order to that this can be a centre of handicraft and cottage industry for the tourist

c) Taj Trapezium Zone (TTZ)

Taj Trapezium Zone (TTZ) defined area of 10,400 sq. km around Taj Mahal. It is a trapezium in shape. It is a buffer zone designed to protect this historic monument from pollution. It is spread in U.P.'s Agra, Firozabad, Mathura, Hathras and Etah districts, and Rajasthan's Bharatpur district. Within the TTZ, there are over forty protected monuments as well as 3 World Heritage Sites — the Taj Mahal, Agra Fort and Fatehpur Sikri.

Under Supreme Court of India decision on December 30, 1996, several industries were prohibited from being placed or operative among the TTZ. This was aimed at protecting the Taj Mahal from being damaged by polluted air from these units. The industries banned were those that used coal/ coke as fuel. The industries were required to either relocate or switch to natural gas or face closure. Industrial units falling in this area be relocated in a phased manner, parks and river development be undertaken as a part of tourism attraction, river Yamuna should be made pollution free by establishing treatment plants, traffic, and transportation, ring road is projected so as to by-pass the city and avoids congestion within the city area, wherever necessary underground/multi-storied parking be projected to fulfill the parking needs, on the fringes of the city transport nagars are projected on the Mathura road Gwalior road and Kanpur road.

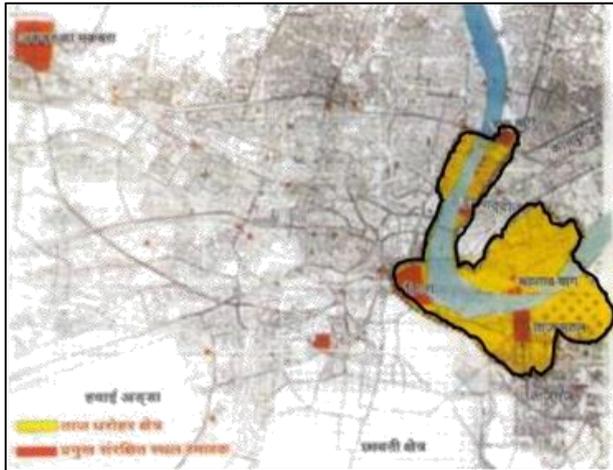


Fig. 9: Taj Trapezium Zone

Source: Agra Development Authority

2) Water Supply

To reduce the water losses, throughout the distribution network, has to be improved and worn out or rusted pipes needs to be replaced, proper water harvesting techniques be adopted for ground water conservation and recharge, sewerage and drainage, sewer lines be laid in a planned manner so that the sewer is properly collected and disposed, the sewer flowing in drains be treated at suitable locations and the treated sewer be allowed to fall downstream of Yamuna, sufficient number of sewerage treatment plants be constructed As far as possible on both the sides of open drain three metres of strip be reserved for tree plantation.

a) Solid Waste Management

A plan be prepared for solid waste management and disposal, proper arrangement be made for collection and disposal of solid waste, arrangement be made for instruments, vehicles, machines and manpower for the disposal of solid waste,

b) Rain Water Harvesting

Natural ponds be preserved, the land surrounding the natural ponds be used for recreational purposes.

IV. ISSUES

The impacts on urban environment are perceived at various levels starting from household level, community level, city level and if unchecked can multiply to issues at regional or national level. This section highlights the environmental issues that need to be addressed to improve the environmental health of Agra city.

Air pollution in the city is localized and limited to roads, industrial areas, major junctions and at some extent in residential areas. While pollution in the city along arterial roads is due to increased traffic, small-scale industries and also the Mathura Refinery.

Monitoring Stations→	Tajmahal			
Parameters→ Years↓	SO ₂	NO ₂	PM10	SPM
2002	5	22	147	376
2003	4	22	145	352
2004	5	18	133	309
2005	9	22	147	306
2006	6	22	133	316
2007	6	23	167	296
2008	7	22	167	304
2009	6	20	157	334
2010	5	20	167	333
2011	4	20	149	290
2012	5	18	178	332
2013	4	17	153	275
2014	4	15	152	277
2015	4	16	166	298
2016	4	18	168	315

Table 4: Annual Average AAQM Data of Pollutants

Source: CPCB

The surface water of the city is contaminated. Water resources in the city are polluted due to disposal of sewerage directly into the surface drains or surface water bodies.

DO (mg/l)	BOD (mg/l)	Total Chloriform (MPN/100ml)
5.3	6.88	47167

Source: CPCB

At present, solid waste is one of the critical issues of the Tajganj. Solid waste has been identified as one of the most pressing urban environment issues. The absence of a sanitary landfill site is another critical issue related to sanitary land filling which rears its ugly head in most urban centres of India.

Road and traffic problems being faced by the city are: deteriorated road conditions, insufficient streetlights, unorganized parking problem, traffic congestion and absence of proper traffic management. Some of the heritage sites like Itma-ud-dullah, Chini ka Rauza are not in approach of tourists because of poor condition of the roads leading to these sites. Issues identified in this sector are:

- 1) Mixing of regional and city traffic on corridors
- 2) Delay at intersection due to non-standard configurations.
- 3) Unorganized Parking on road
- 4) Absence of traffic management plan / its implementation
- 5) Increase in volume of two wheelers
- 6) Varying carriageway width creating turbulence in traffic flows.
- 7) Lack of good eco-friendly intra city public transport (from Taj Mahal point of view).
- 8) No proper fare policy for taxis, autos and buses.
- 9) Street furniture, road and tourism signage are also insufficient in the city.
- 10) No proper drains for draining out the water into main drains
- 11) Barely any footpath for safe pedestrian movement.
- 12) A number of rail-road crossings which add to traffic chaos in the city.

V. CASE STUDY OF CAIRO

Over the past 50 years many studies, projects, and planning proposals have been made to conserve historic Cairo. Renovation and restoration projects started in the 1950s and urban planning schemes of the 1960s did very little toward the protection of old Cairo from slipping into shabbiness. A major concern of planners in the late sixties was to look into land use and traffic solutions and came up with schemes that required the removal of some historic buildings. The period of the 1970s has not witnessed any development either at the policy or implementation levels. The 1980s have witnessed the declaration of historic Cairo as a world cultural heritage site by the UNESCO. Grant and technical support began to flow in and this led to comprehensive outlook for conserving historic Cairo. However, most of the proposed schemes have not materialized.

Based on the conceptual model of cultural sustainability twelve concepts have been identified.

Four conservation proposals jointly developed by international and local bodies are identified then examined within the scope of these concepts. A content analysis procedure has been employed where the intention is to realize whether these concepts are explicitly or implicitly stated, or not stated at all, especially in the sections of recommended actions and conservation strategies written in these proposals. The proposals of conservation that have been examined are Conservation of the Old City of Cairo, UNESCO, 1982, Rehabilitation and Upgrading of Historic Cairo, Arab Bureau for Design and Development, ABDD, 1984, Agenda for Revitalization: Conservation and Development Proposals for Historic Districts of Old Cairo, Aga Khan Trust for Culture, AKTC, 1997, and Rehabilitation of Historic Cairo, UNDP, 1998. The twelve concepts investigated in the preceding proposals are: Participation, Democracy in Decision Making, Human Development, Providing Educational Opportunities, Re-Building Local Communities, Raising the Standards of Living, Socio- Economic Development, Creating Employment Opportunities, Eradicating Poverty, Reunion of Tourism and Heritage, Developing Adaptive Re-Use Schemes, and Developing Environmental Awareness Programs.

A. Political Support

In the cases of Cairo, is many years of efforts on the part of UNESCO and the Aga Khan Foundation of Architecture have not generated a firm commitment for area conservation from the national authorities which were expected to take up a World Bank loan. Cairo have benefited only from a number of rather isolated cases of monument restoration, financed, for instance, by foreign archaeological institutes and other bilateral donor agencies.

B. Cultural Aspects

In the cases of Cairo, some local agencies are also very keen to promote the old towns as tourist centres, but are losing out to rapid decay and destroy.

C. Social Aspects

Social aspects manifest themselves in particular through the presence of the poor, who (as recent immigrants) have become residents in very crowded historic housing stock,

usually suffering from the impacts of sub-division and over-utilization of outdated services. This picture is contrasted by the fact that many well-to-do owners of historic buildings have moved elsewhere and have lost interest in the maintenance of their properties, as can be seen in the cases of Cairo, Tunis, Delhi, Bombay, Penang, Quito, Havana and many others. The income situation of the poor and the disinterest of absent lords who earn hardly any income from the low rents being paid by the occupants of their old housing stock have strongly contributed to the decay and lack of maintenance of old housing stock in historic city centres. For the formulation of area revitalisation and rehabilitation schemes there is a good chance that the poor will be forced to leave and that they will have to sacrifice their centrally located residences for rehabilitation or redevelopment projects.

D. Economic Aspects

These certainly dominate the considerations for urban rehabilitation of historic city centres and monuments. World-wide experiences show that most local and national governments and religious organizations cannot afford to conserve and improve a large majority of even their most precious monuments. Efforts to develop the monetary status of national archaeological institutes and to increase their portfolio have principally been unsuccessful, as most governments appear to back aloof from added expenses for the preservation and rehabilitation of monuments.

There are only a few cities which charges nominal entrance fee from tourists for getting into the historic conservation zone that have attempt for the revitalization of whole historic city centres, including (i) the revitalization and modernisation of local economic activities and the required infrastructure, (ii) the restoration of monuments, and (iii) the rehabilitation of old housing stock, which apply an integrated financing policy that pools together private individual, private commercial as well as public-sector efforts and funds. To some extent this has been tried to Bhaktapur (though the private sector's contribution may be low in this particular case) and in Tunis, but it has been proposed in Cairo. In the context of the modernisation of cities and their historic centres, there is also concern for the old, historic types of land uses. Most of the traditional economic activities (in cities like Cairo this is almost "medieval"-style activity) will - over time - be unable to survive, particularly in locations where conservation and rehabilitation of historic city centres have the impact of "gentrification".

E. Urban Aspects

Urban aspects are also very prominent in the conservation and revitalisation of old city centres. One can distinguish in each historic city specific urban patterns or features such as the nature and density of land uses, height of buildings, width and pattern of circulation routes (roads, alleys, and footpaths), building typologies, as well as specific infrastructure components. These form the components of the "urban tissue". Within the urban tissue the size and format of individual plots is a prime characteristic that has a wide impact on the urban form and appearance. For area conservation and rehabilitation it is essential that the maximum possible preservation of the original tissue pattern

is a prime objective of conservation programmes. Once the tissue pattern is no longer respected and has been widely, modified obviously the nature of the built environment is bound to change radically. Hence, for many physical planners this issue of the urban tissue is one of the prime areas of concern, and it is in this perspective that all efforts to generate new uses for old buildings and neighborhoods need to be evaluated. Some rehabilitation experiences and proposals, as in the case of Cairo has stressed the importance of the preservation of existing urban patterns and tissues, and some have even developed detailed design guidelines (Bhaktapur, Singapore) which are to be applied by private investors. The area conservation and redevelopment experience in the Medina of Tunis illustrates, however, a more "liberal" approach, with its quasi-traditional style of housing development (middle and high-income housing) that does away with the old street patterns, and provides modernised versions of the classic Tunisian courtyard housing.

- The key objectives of this scheme was to deal with monuments' restoration in order to control new

development, to rehabilitate and improve existing structure, to introduce new compatible functions for monuments, and to improve and contribute to social life.

- Six clusters of monuments have been selected to form the first phase of an emergency programme.

The Conservation strategy includes:

- The index should be reviewed & the existing procedures for indexed buildings should be strengthened;
- Key monuments, buildings and landmarks, and their settings, throughout the old city should be protected, restored and enhanced;
- Redevelopment of all other sites within the old city should be permitted up to plot boundaries and up to existing heights; and
- The six conservation zones proposed here should receive priority treatment over an emergency period of five years.

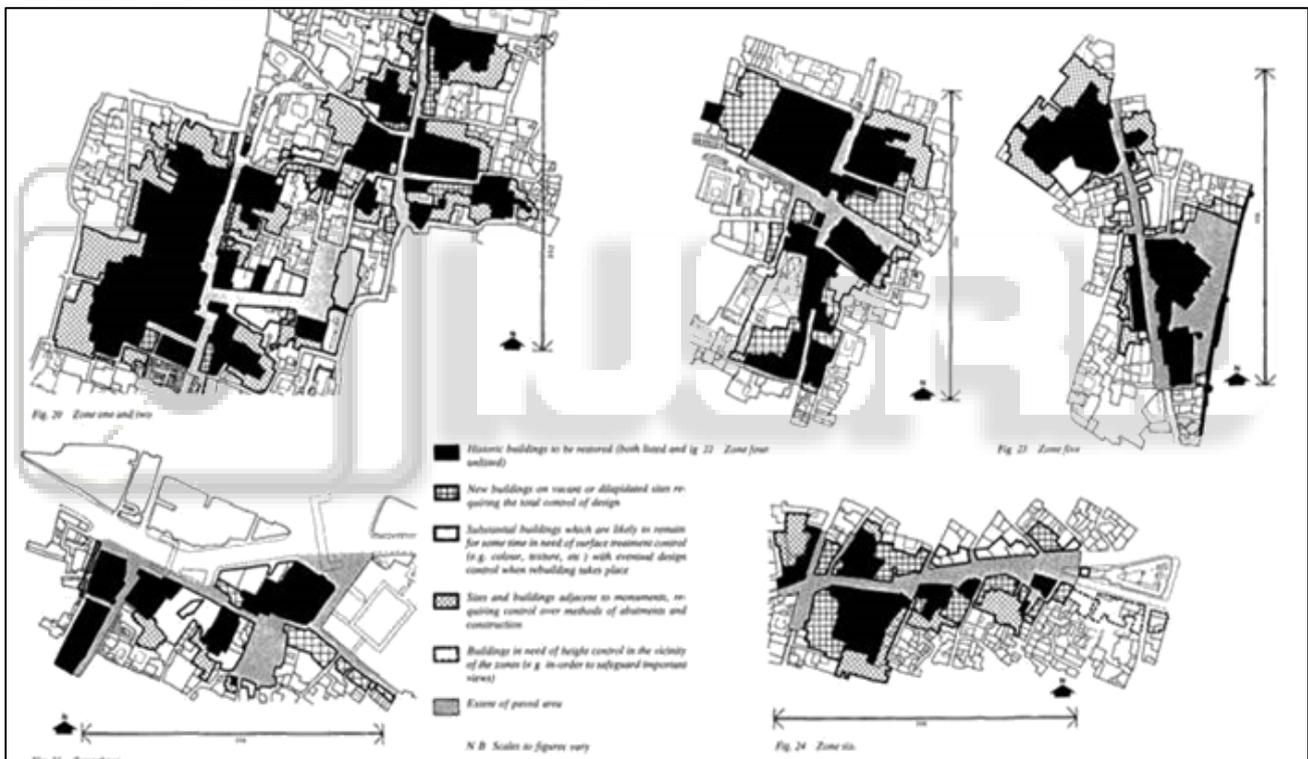


Fig. 10: Six Priority zones of Cairo

Source: Report- The Conservation of the Old City of Cairo
Priority was given to upgrading internal conditions of the buildings in each zone by developing a strategy for the relief of overcrowding and for the improvement of sanitary facilities and by giving encouragement, advice and financial assistance to inhabitants.

pedestrian and is conceived as an integral part of urban planning and development processes.

Sustainable urban conservation of historic cities is viewed as a comprehensive approach that integrates several processes that pertain to historic buildings and their physical urban context, together with the socio/economic environment within which the city exists and operates. The paper envisaged that the problems of historical centers would not be solved by individual projects that focus on the conservation and rehabilitation of their architectural and urban spaces. Rather, they can be solved by those policies and concrete programs that address the needs of the inhabitants such as reducing poverty, increasing employment, upgrading local communal services, and most importantly, empowering

VI. RESEARCH FINDINGS

A. Analysis of both Case Studies

By and large, urban conservation is a culturally sustainable process of change and development that involves restoration, demolition, and the physical and socio/economic impacts. It is regarded as a process that involves the vehicle and the

and enabling the local natives to positively participate in the planning and management of their environment.

Some critical questions that need to be addressed are now in high demand. It is suggested that a critical review of what has been done so far should take place in order to design a wise strategy that shifts the vision from restoring individual monuments to the vision of preserving the old city as a living social and physical entity. This requires a lot more than choosing the best conservation strategy, or relocation policies. It should involve educational and environmental campaigns to teach local communities the merits of conservation and to highlight the historical, functional, and ontological ties that bind them with their city.

The two cases Tajganj & Cairo are facing the same problems related to conservation, the earlier is an example of Agra where Tajganj is a residential area, with many monuments and the later one is the Cairo is also a residential area and the morphology of the space were same, where both the Taj Ganj & Cairo are having problems because of unplanned development & both are facing problems because of overuse of the area and hence the causes of dilapidation are same at these two places.

Cairo is developing country and the strategies are being adopted to convert the place as to reduce the decay, but the Taj Ganj is unplanned development but the study of the strategy adopted for coming to the solution can be adopted where the study can be done to analyse the situation & further designing, policy making solution can be given.

The Cairo study could be used for the policy development or the design interventions which could be further used for the recommendations of this report.

To conserve an area the planning procedure plays a major role, where a dead space can be made lively and the overcrowding can also be reduced which can be seen in secondary case study.

B. Major Findings

The analyses which further will lead to recommendations are the lacks in an area which lead to these decays is first to understand the main factors which affect the area include:

- New industrial and business activities have invaded the old city changing its character.
- The traditional pattern of craftsmen, merchants and workers, is being rapidly replaced by a new pattern of bulk storage and manufacturing establishments that actually does not fit well into the old urban fabric.
- The scale of commercial activity encourages large vehicles for delivery purposes and has a negative impact on the structure of the monuments. The number of vehicles, coupled with heavy pedestrian movement, produces acute congestion at a number of points.
- Minimized congestion in the market and within commercial areas may have to be taken into consideration as a self-regulating system.
- It should be envisaged that there is no design of new road construction within the area. Also, no further cross routes should strike through the area, nor should any increased capacity to be encouraged on the existing cross routes.
- Considering the surface treatment of the public realm is essential in terms of colour, texture, and materials. The

relation of buildings to each other and to the surrounding spaces was also an important factor. In the case of a focal space, the paving surface is more significant.

- Priority should be given to upgrading internal conditions of the buildings by developing a strategy for the relief of overcrowding and for the improvement of sanitary facilities and by giving encouragement, advice and financial assistance to inhabitants.
- Improvements to the quality of external environment included the upgrading of the water supply/sanitation, refuse disposal and street cleaning services, and the provision of social facilities within each zone.

VII. RECOMMENDATIONS

- 1) Taj Ganj should be really considered systems of knowledge which may well give us insights into sustainable existence on earth, of human cultures and of natural systems. This knowledge is inscribed into the built environment, and should not erase it.
- 2) With loose and non-existent government policy historic housing areas are fast vanishing. An urgent need to emphasize the heritage value of historic housing and develop guidelines for their conservation.
- 3) Areas should be defined with guidelines for skillful repairs and development.
- 4) Conservation and development collectively work to have political support.
- 5) As economic incentives additional floor space index (FSI) or transfer of development rights (TDR) to all listed buildings should be provided to encourage conservation of historic housing.
- 6) Existing drain corridors hold a fantastic potential of being a natural eco-corridor. Renovating the drain into, a uninterrupted ecological landscape corridor with pathways, cycle tracks and gathering space which is basically, a special non- motorized eco- mobility corridor.

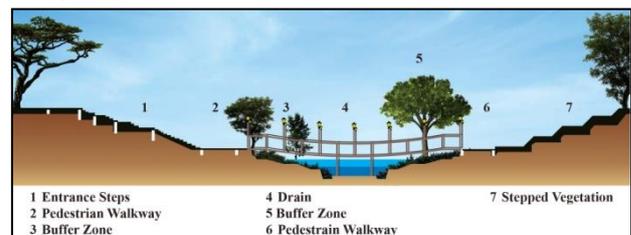


Fig. 16: Proposed Eco-corridor cross section

- 7) Spreading awareness, sensitizing the public and permitting new sensitive development which will be the heritage of tomorrow.
- 8) To remove encroachments on roads, temporary stalls/kiosks should be allotted to local vendors.
- 9) Restoration of buildings, modification of structures for conversion and adaptive reuse.
- 10) Restoration of facades of buildings, in case the restoration of the entire building is not feasible or legally possible because of ownership problems and standing litigation, should be done with the theme of history.
- 11) Rectification of physical and mass appearance by removal of inharmonious elements,

- temporary/unauthorized facade treatments or additions, removal of inappropriate advertisement hoardings.
- 12) Enhancement of the streetscape through improvement of sidewalks, installation or upgrade of street furniture and introduction of landscape elements.
 - 13) Introduction of control mechanisms over future development by introducing special building by laws for this historic area and allowing construction of new buildings with controlled height, compatible architectural style, fenestration and color and only at suitable places without disturbing the existing heritage (cultural) character.
 - 14) The public transport should be banned in the conservation zone around the world heritage sites and also the use of Ekka (tanga) should be encouraged as public transport to enhance the tourism economy. This will definitely give the feel of old golden times to the tourists.
 - 15) Entrance fee should be charged for entering in the TTZ as well as monuments for the revitalisation of whole historic city centres, including the revitalization and modernisation of local economic activities and the required infrastructure.
 - 16) Introduction and enforcement of legal and municipal rules to restructure the rent slab and define the responsibility of the tenants with regard to compulsory maintenance and restoration of the properties they use.
 - 17) Raising a conservation fund by the government and municipality to support conservation projects and to provide loans and grants to owners of heritage buildings, and exploring the possibility of inclusion of the private sector to take an active partnership with the government in urban conservation works. Possibilities are also to be explored to find external aid funds for urban conservation.
 - 18) Conservation should address the needs of people and also arrest the greed of developers.
 - 19) Removal of Rent Control Act from heritage properties to start with commercial listed premises; followed by residential premises.
 - 20) Quick permissions to encourage genuine restoration, skillful repairs, maintenance should be granted.
 - 21) By constructing bio retention ponds, groundwater can be recharged.
 - 22) Storm water runoff can be reduced by creating zones of vegetation and bio retention basins can be constructed along the streets and near the river to increase the level of Yamuna.

VIII. CONCLUSION

A. Appropriation of Development

There is an urgent need for a sustainable development approach for Agra that will encompass architectural and urban conservation, tuned with proper urban design and development within a holistic environmental planning.

However, as the historic Tajganj area also contains many buildings built during the last century, it is not possible as well as required to preserve and present the place as a grand urban museum. In this case, —appropriate development (guided by the principles of —sustainable development) with

urban design interventions as a solution to the specific problems of the historic district should be exercised. The management planning strategy should include volume conservation in the old historic area, removal of the conflicting elements, restriction on height and character of new buildings proposed, zonal restriction on modern development with clear demarcation of core-buffer-transit areas for urban conservation and development, introduction of building bylaws suitable to the historic district, repair of roads in a new way without raising the road level, creation of pedestrian circulation routes, increase of drainage at the historic district to stop water logging during monsoon, etc.

Urban development should include urban expansion, infrastructure interventions, new tall buildings and mega-structures, as well as conservation and maintenance of historic buildings and precincts, intelligent management of existing building stock, conservation and upgrade of ecology and environment under appropriate urban planning and design within a broader framework of environmental planning and management towards sustainability.

Urban development is to be sensitized to its capacity to cope with the environmental tolerance of the city. A good coordination amongst various departments of the state government and the municipal authority, along with people's participation is very much required for the fulfillment of the common goals of the community in Agra.