Confrontation, Compromise and Reconstruction of The Walled City of Shahjahanabad

By

Ajit Singh

Bachelor of Architecture

School of Planning and Architecture

Delhi, India

June 2002

Submitted to the Department of Architecture in

Partial Fulfillment of the Requirements for the Degree

Master of Science in Architecture Studies

at the

Massachusetts Institute of Technology

June 2006

Signature of Author: _____

Ajit Singh   Department of Architecture May 25, 2006

Certified by: _____

Michael Dennis   Professor of Architecture, MIT
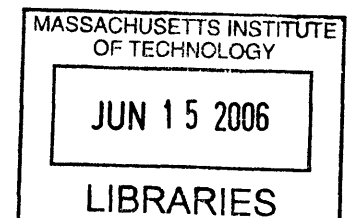
Accepted by: _____

Julian Beinart   Professor of Architecture, MIT

Chairman, Department Committee on Graduate Studies   Course IV

Confrontation, Compromise and Reconstruction of The Walled City of Shahjahanabad

By Ajit Singh

Thesis Committee

Michael Dennis   Thesis Advisor

Professor of Architecture

Department of Architecture, MIT

John de Monchaux

Professor of Architecture and Planning, MIT

Department of Architecture and Planning, MIT

Department of Urban Studies and Planning, MIT

                                                        Readers

Julian Beinart

Professor of Architecture, MIT

Chairman, Department Committee on

Graduate Studies Course IV

Eran Ben Joseph

Associate Professor Landscape Architecture, MIT

Confrontation, Compromise and Reconstruction of The Walled City of Shahjahanabad

Abstract:

Cities offer a platform for cultural, social, physical and economic co-existence and conflict. Many traditional cities of India, which were conceived on the basis of relative autonomy of the existing societal structure, got transformed in to complex, fragmentary patterns of urban development due to their failure to support continuous population pressure and new trends of urbanization. One of these cities, Shahjahanabad (commonly known as Old Delhi), stands out as one of the perfect examples. The walled city of Shahjahanabad initially evolved on the basis of formal geometries of axial planning, and later got transformed in to a chaotic hub of complex form; initially due to the conscious neglect by the British colonialism and later due to endless problems generated by human immigration.

Although, the walled city is known for its historical significance due to numerous architectural monuments, the indigenous settlement is tabooed as "Old Delhi" due to its persistent socio- cultural patterns that isolate the traditional core of Delhi from rest of the city structure. Nonetheless, the walled city of Shahjahanabad is characterized by its introvert nature of public activities bolstered by specialized bazaars and indigenous neighborhoods (*Mohallas*) structured around religious sanctuaries. Although the traditional core is known for its local economy, the inner city continues poses serious threats of inner traffic congestion, excessive commercialization. Though there have been numerous efforts to decongest and revitalize the traditional core, all the efforts seemed too shortsighted to capture the genesis of all the problems; the problems which exists beyond the city peripheries, to the largely urban and economic growth of the city. The thesis tries to address the inner city issues and problems of the walled city of Shahjahanabad, which are largely because of its separation, and isolation from the rest of city growth. On the basis of problem analysis the research argues that the problems of the historic core need not follow "city revitalization" process, but needs to adopt city "integration process", which would not only provide important city services through urban design interventions, but also provide solutions to many inner city problems.

The growth pattern of Shahjahanabad exhibit various historical layers, changes over the period of time due to shifting and concentration of forces, which in turn has resulted in the fragmented landscapes along its outer peripheries. The thesis considers these spaces as important transitional spaces, which needs to be redeveloped in order to integrate segregated core of Shahjahanabad in to a cohesive center of National Capital Region (NCR), Delhi.

The thesis poses a larger question of how citywide planning strategies and macro level urban design interventions can revive the traditional core of Shahjahanabad, the city cores which has faced tremendous pressures of traffic congestion and disruptive land use patterns.

Thesis Supervisor: Michael Dennis

Title: Professor of Architecture, MIT

Acknowledgements

This thesis is made possible through the generous contributions of several exceptional people. My thanks are due to:

Prof. Michael Dennis, my thesis advisor, who inspired me, supported me and assisted me continuously throughout my research work.

Prof. Julian Beinart for patiently listening to me, and potentially guiding me thorough the design development process. He raised intuitive questions of inquiry, which helped me to narrow down my research questions to seek concrete proposal.

Prof. John de Mochaux for his for his profound insights and astute observations, which guided me to refine my research questions at every step of thesis development.

Eran Ben Joseph for his timely critics, which helped to look forwards the final presentation.

Jasbir Sawhney for his timely guidance, who helped me answer some of the grounded questions. I am really grateful for his enthusiasm towards my thesis research. His support has really helped me to explore multiplenary issues of transportation and conservation based development of the walled city.

My friends at MIT and back at home, who supported me and helped me with the basic data collection.

My family for the wholehearted support towards the entire process of thesis formation.

4

Table of Contents

6

1 Chapter 1: Introduction

1.1 Objective:

This thesis identifies the edges of the walled city of Shahjahanabad as the crucial transitional zone of recognizance, which needs to be reevaluated in order to solve inner city problems of the walled city of Shahjahanabad. The research concludes in to an urban design proposal, which reconstitutes the incongruous structure of the walled city in to a comprehensible, legitimate and spatial form.

1.2 Prologue:

As India has moved closer to being a commercial and industrial society, historic cities have far exceeded their capacities in terms of space, services and facilities. This has resulted in a gradual erosion and distortion of the fabric of these cities beyond recognition. One of these cities, Shahjahanabad, provides valuable lessons to contemporary Indian city planners, even though this lesson has remained unrecognized for the last half century or so.

Since the 1960s, good intentions to tame such trends and to remove the malaise and obsolescence in cities like Shahjahanabad have found expression in official plans and documents, and various formal and informal forums. Unfortunately, however, all such intentions have proved to be so far too elusive to be translated in to reality[1].

Now, after almost half a century since gaining independence, the time has come to look seriously at our urban heritage and take a stand on the two issues: conservation and renewal. It is quiet evident that the change is inevitable in the urban scenario. The city and its components must change itself according to the changing aspirations of the citizens and needs of contemporary urban cosmopolitan community through a constant layering and integration process.

---

[1] Verma, G. "Inner City Renewal: Lessons from the Indian Experience" Online Posting Dec 31. 2005. http://www.architexturez.net/+/subject-listing/000195.shtml.

1.3 Concern

The Urbanization process in the third world countries like India has faced haphazard trends in the past hundred years of development. The cities which were structured on the basis of socio cultural patterns, today, are characterized by multifaceted negotiations and compromise between rapid urbanization to achieve efficiency and societal need to provide appropriate living environments. In case of Indian cities like Delhi, Kolkata, and Chennai, the colonial interventions not only fastened the process of urban development, but also introduced foreign ideas of city planning that were antithetical to the spatial configuration typically observed in the ancient Indian cities. Differences in the relative densities became as one of the noticeable features which created internal contrast within the city. Apart from the density contrasts, the new colonial development introduced various urban typologies which further widened the gap between compact indigenous settlements and spacious colonial developments. The regional segregation of various urban forms generated a third space, which was occupied by poor section of society[2].

[Figs1.1] **British Bunglow in Lutyen's zone, Haveli, Slums**
Source: http://newsimg.bbc.co, Archnet.org, http://newsimg.bbc.co.uk

The city in totality reflected multilevel differences in its use and urban forms. Today the general the city structure is reflected by the indigenous city core, Civil Lines, cantonments, Special areas (obsolete areas with temporary settlements), Bustees (housing clusters), village enclaves and suburban growth. Civil Lines was planned

---

[2] Breese, G. "Urban Development Problems in India", Online Posting, Apr 14. 2006. http//www/jstor.org.

basically as residential camp for British administrators, with low density and open greens becoming their general characteristics. Cantonments became the military encampments which were again characterized by low dense urban fabric primarily planned for maneuvers, emergency camps and similar military uses. Special areas became the part of third space which due to their obsolete sense were occupied by homeless and destitute.

Functionally, the traditional cores continued to congest and acted as the generators of commercial and industrial activities while the other parts of the city reflected "official space" meant to serve noblemen and colonial enterprises.

The problems of inner city contrasts were noticed way before the situation was getting, however, ironically wasn't identified in any of the masters plans and regional plans which could take care of growing congestion and population growth. As Gita Dewan Verma puts it in her article " Inner city revival" that "The rapid growth of cities in recent decades has put urban planners in an unenviable position of 'desperately trying to cope', a position that has made for a tendency to place the problems of urban development in a perspective of quantity rather than quality, of provision rather than upkeep"[3].

The city authorities identified preservation of old cities as one of the issues, which were conceived as to provide affordable housing to decentralize population from the inner core. The inner city renewal interventions shown by the planning authorities articulated "housing planning" rather than the "urban planning" dimensions. The efforts didn't mean much than just to upgrade squatter settlements or poorly developed peripheral development. While up gradation is conventional tool to revitalize old stock, we need to look beyond just catering to the quantitative demand of housing demand. The aim should be to seek qualitative urbanism, which serves the rational demand, as well as fulfill the societal needs of the population.

---

[3] Verma, G. "Inner City Renewal: Lessons from the Indian Experience" Online Posting Dec 31. 2005. http://www.architexturez.net/+/subject-listing/000195.shtml.

1.4 An evaluation of Indian City Experience

In 1981 there were 1.2 million housing units throughout Indian cities and towns, representing almost $1/20^{th}$ of housing stock accommodating 10 million people. These traditional cities went over socio economic and political changes, which led to the drastic transformation with the following characteristics: the old fabric of the cities,, which was predominantly housing went under degradation due to inadequate maintenance and pressures of over use. Since these city centers characterized intensive mixed use, the population pressures increased, that in turn increased the occupancy rates. The overcrowded and small residential units became the common feature of the housing block. The old city centers supported a large portion of commercial activities. Ironically, the residents lived in the surrounding neighborhoods were low income group who based their livings on the informal home based activities and small scale industries that proliferated within peripheral boundaries of old city. The variety of transportation mix from four wheeler vehicles to hand cart traffic added further congestion to the narrow streets of the city.

[Figc1.2] **Chandni Chauk View**
Source:http://tramp.travel.pl

[Figc1.3] **Old City Fabric**
Source:http://image63.webshots.co

The city authorities tried to deal with the increasing issues of the inner city problems by different approaches like road widening, rent control and slum legislation system. However, they faced severe lacuna in over all development of the traditional city. The rent regulations led to poor maintenance of the old housing stock. This further intensified the issues of architectural conservation and unfavorable living environments. The slum legislation also tried to deal with urban renewal of the poor

sections of the city, but failed to address the wider issues of urban heritage of the old cities[4].

Since 1960, there have been numerous efforts by the planning authorities to address the issues of conservation connected to the inner city areas. However, all of them narrowly confined to the few prominent buildings. The master plans proposed by development authorities, in order to adapt "urban renewal" programs, mainly focused on the urban renewal measures like pedestrianzing certain portions of the old city to decongest it. These measures looked promising but could not get implemented because of the feasibility issues at the macro level. We have to understand that the problems with the old fabric not only lie in the inner city but beyond its edges, which segregates the blighted old city from rest of the city structure. The need is to propose a comprehensive plan which not only deals with wider issues of urban connectivity but also helps solving the inner city problems of congestion and dilapidation.

1.5 Shahjahanabad (Old Delhi)

The study reclaims the history of Shahjahanabad (traditional core of city Delhi) - the city which evolved on the basis of formal geometries of socio cultural patterns, and later encountered rational ideas of modern architecture and city planning. The historical core today reflects a dramatic juncture between the imperial "Traditionalism", and colonial "Modernism" which evolved out of architectural upheavals of industrial revolutions in the eighteenth and nineteenth century[5]. The city that was plundered, redefined and controlled a number of times, still retains an overwhelming and enigmatic historical and symbolic character, which flourishes even today, with the long lasting socio cultural patterns imbued in peoples life styles.

---

[4] ibid.

[5] Hosagrahar, J. "Indigenous Modernities- Negotiating Architecture and Urbanism", Routledge Taylor & Fransis Group, 2005.

13

Today, the traditional core of the city, which was once recognized as *Dilli* "The heart and soul of the body", is caught in chaos, with familiar forms and meanings thrown in question. The walled city has lost its significance as a core and the associated landscapes have become the unanticipated versions of architectural negotiations - the urbanism which is not truly modernistic but rationalized versions of "indigenous modernity"[6].

Today Shahjahanabad has lost its inherent significance and the city has been undermined by the formal geometries of colonial landscapes. The old city reflects a patchy collage of incongruous landscapes, and the superimposed geometries of colonial architecture. The bipolarity created by the discontinuity and disjuncture in the urban morphology, has been a consequences of conflicts between authoritarian imperialism and exploitive capitalism. However, despite the romanticized dominion geometries of colonial architecture, the city continues to reflect its formal characteristics with plethora of symbolic forms- the forms which needs to be reevaluated in relation to the changing landscapes, forms, meanings and interests to identify Shahjahanabad as the cultural core of Delhi.

I have chosen Shahjahanabad as the main focus of study because of my familiarity with the city structure, and also because it provides numerous urban design opportunities which can help solving inner city problems. Apart from its social and economic segregation from New Delhi, Shahahanabad present a unique case where traditional city core has been physically segregated due to railway infrastructure and their ancillary land use of warehouses, and low density suburban functions abutting Lutyen's zone.

Moreover, the site provides numerous opportunities in terms of its accessibility to the river front that has never been explored. The upcoming Delhi Metro Rail System (DMRC) would play an important role in releasing congestion in the inner areas of Shahjahanabad. The buffer zones in between Old Delhi and New Delhi provides plethora of opportunities to transoform the edges of Shahjahanabad in to transit oriented development which can in turn provide effective linkages between the

---

[6] ibid

walled city and the New Delhi. Above all the walled city of Shahjahanabad depicts a typical characteristic due to its walls and radial routes, which penetrates its gates. It is worth exploring how to revive and redefine the identity and visual orientation that vanished with the walls of historic city.

1.6 Need Identification

City is a product of continuous layering and restructuring of its precedents. Medieval cities possessed definite meaning and value- the identity which provided definite structure to the city. Modern movement in urbanism fastened the process of urban development and transformed the primary intent to produce "quality urbanism" turned in to the production of "quantitative urbanism". Unlike western countries, the cities in the third world countries suffered with the additional issues congestion and kiosk.

During the process of fast growing metropolitan cities, there has been a continuous loss of urban design attitude towards creating "good urbanism". The modern attitude towards the urbanism is no more than just to perceive the buildings as independent objects with surrounding spaces as residual and undefined. Many Indian cities, which reflect coexistence of indigenous attitude towards architecture, as well as welcome imitate modern styles urbanism, depicts a conflicting characteristics between the old and new styles. The multilevel issues of preservation and redevelopment make the situation even more difficult to comprehend. The present city in turn lacks definite order and spatial consistency. The historical patterns offer an experience of diversity and important sites of pleasure; Pleasure because these sites no longer contain their original functions but provide sources of fantasies[7]. The obliterated spaces between the old and the new become the uncontrolled buffers to house of poor and destitute. These blighted spots of anti-spaces become more of political concerns, rather than the important issues of urban planning domain.

---

[7] Boyer, M. "The city of Collective Memory- Its Histoical Imagery and Architectural Entertainments", the MIT Press Cambridge, Massachusetts, 1994.

In the case of Shahjahanabad, the central civic structure laid down its basic foundations which turned in to a holistic, organic development confined within the walls. The process of development although, non-controllable, however established sense of continuity in its built form.

Although the issue of "Anti Space" has been the center of discussion in many planning forums, the descriptive analysis lacks productive visions of reality. This analysis needs to be transformed in to prescription of "form giving" proposals. The important challenge is to figure out the important figure ground relationship of built versus open spaces rather than just focusing on the land use proposals. It's important to trace how these obliterated spaces can be converted in to positive spaces for interventions, and recycled to absorb new functions[8]. The question is not only how the design interventions change its own character, but how they can influence the surrounding environments to resolve some of the functional aspects of linkages. Laurence Stephen states in his book "Recycling Cities for People, The Urban Design Process", that recycling cities is the only option to preserve the historic and social character of cities. The city needs to be evaluated again and again to best fit the demands of its inhabitants. Throughout the world, especially in the developing countries, people have admired and respected their architectural heritage manifested in the most urbanized centers of their cities. Many times, it is the historical character of the city that has displayed cities glories, and many times reflected cities' melancholy stories. Many times the city inner areas sustain and continue to flourish, while some are unable to sustain, and hence create dead vacuums leading in to underutilized zones of the city. However these "dead cells" of the cities, which once gained significance, continue to hold the capacity to be transplanted by new functions.

---

[8] Transik, R. " Restructuring Antispace", Chalmers University Press, Goteborg Sweden, 1986.
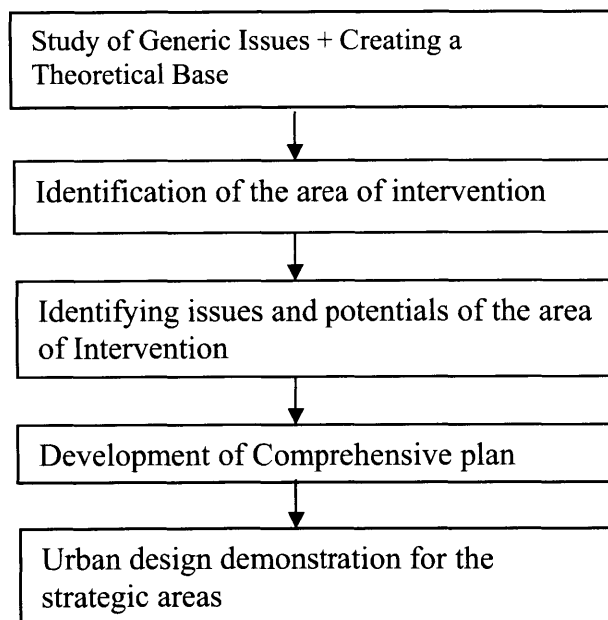
Hence, the defunct areas of the city need to be regularly evaluated and recycled to transform in to a fresh component, necessary for the overall city sustainability[9].

1.7 Thesis goals

This thesis analyzes the present problems of Shahjahanabad in close relationship with the spatial configuration of walled city. The research identifies and recognizes the outer edges of the old city as the transitional zones which carry immense potentialities to be redeveloped and recycled to offer the following goals:

1) Reduce congestion in the inner areas of the city and integrate the old city precinct with the city level urban networks.

2) Reconstruct lost recognition of the Walled city of Shahjahanabad.

3) Reshape fragmented landscapes and generate relationship with the immediate urban fabric.

1.8 Thesis organization and research methodology

```
┌─────────────────────────────────────────┐
│ Study of Generic Issues + Creating a     │
│ Theoretical Base                         │
└─────────────────────────────────────────┘
                    │
                    ▼
┌─────────────────────────────────────────┐
│ Identification of the area of intervention│
└─────────────────────────────────────────┘
                    │
                    ▼
┌─────────────────────────────────────────┐
│ Identifying issues and potentials of the area│
│ of Intervention                          │
└─────────────────────────────────────────┘
                    │
                    ▼
┌─────────────────────────────────────────┐
│ Development of Comprehensive plan        │
└─────────────────────────────────────────┘
                    │
                    ▼
┌─────────────────────────────────────────┐
│ Urban design demonstration for the       │
│ strategic areas                          │
└─────────────────────────────────────────┘
```

---

[9] Stephan Cutler.L & Stephen Cutler. S, "Establishing Dialogue for Recycling Cities", EKISTICS: The Problems of Science of HUMAN SETTLEMENTS,Vol.43, No.254, 1977.

In order to understand the complex morphology of Shahjahanabad, this thesis adopted a "whole to part" study, where on a macro level, I discussed generic issues of Shahjahanabad creating inner city urban contrast within the larger city of National Capital Region.

On the micro level I identified those transitional areas beyond the historical walls, which act as barriers, however, carry immense potentialities to resolve some of the inner city problems of Shahjahanabad. I also focused on how to generate urban design proposal for the urban ring around Shahjahanabad which can integrate and re-knit its old fabric with rest of New Delhi area.

Chapter 1 specifies the primary intent behind the thesis, and various goals that the thesis tries to achieve.

Chapter 2 delves deeper in to the chorological history of Shahjahanabad and its changing perceptions over time. It primarily focus on how the changing landscapes of Shahjahanabad on micro as well as macro scale could change the way they were perceived over time; the way the landscapes within and beyond the walls were contested to evolve the over city structure.

Chapter 3 analyzes the macro and micro level issues of Shahjahanabad by focusing on its spatial configuration of its walls and the gates defining the inner movement patterns. It also studies how Lutyen's plan for New Delhi tried to respond to the urban ring characteristics of the peripheral walls.

Chapter 4 raises various city scale and level design issues which finally culminate in to a comprehensive urban design proposal for the strategic areas under the focus of the study.

Chapter 2   Shahjahanabad and Changing perception of its landscapes

2.1 The Walled City of Shahjahanabad:

Many indigenous cities in India, nonetheless Shahjahanabad, evolved out of societal cultural patterns as "a whole" incorporating piecemeal proliferations of architectural styles as obtained in the later Islamic imperialism. The idea of growing as a whole not only strengthened the city's autonomous controls but also governed its internal laws and future continuity. The period between 17th century B.C. and 18 century B.C depicted the "process" which finally shaped the formal characteristics of the indo-Islamic city. The city space was characterized by the social activities contained in them.[10]

[Fig 2.1] **Chandni Chauk View**
Source:http://www.royalengineers.ca

[Fig 2.2] **View of the walled city of Shahjahanabad**
Source:http://images.google.com/

The walled city of Shahjahanabad was built during 1639-48 as an abode for emperor Shahjahan after he decided to move his capital from Agra to Delhi, in order to support efficient ceremonial processions and general movement of the public. Since Delhi was already known for its past glories, Shahjahan, the Mughal emperor after Akbar, decided to build his capital on a new site on the banks of Yamuna river. The new capital included Red Fort as the focal point, Jama Masjid as the praying center, and the fascinating Chandni Chowk market as its commercial zone. The new court of the emperor became the central focus of the planned forum which imitated Persian landscape styles and architectural motifs (Chatris, jallis) from many Indian

---

[10] Lynch, K. " Theory of Good City Form"

architectural styles of known *havelis* and palaces. Water in canals and fountains became the main attraction of public spaces. The canals have been closed now, but Chandni Chowk remains as one of the main attractions of Shahjanabad.

Since its initial inception, Shahjahanabad has undergone a series of changes. Initially it evolved as the last, but the most sustained settlement amongst "the seven cities"; Delhi is said have evolved as the cluster of these seven cities along the river Yamuna (1300-1600 B.C.). Later, Shahjahanabad became the part of the powerful imperial capital of Delhi in 1920s', with interspersed mosques, gardens and mansions. Finally, however, the area turned in to a congested, commercial and chaotic hub of the democratic capital after 1947. The study of various proposed Delhi Master Plans (1962-2004) show that there has been an overall increase in the population of Shahjahanabad, which resulted in the loss of street greenery, increase in traffic congestion and architectural degradation of historical monuments.

The politics of urban development has played a pivotal role in the degeneration of socio-economical conditions of Shahjahanabad. Unfortunately, the city was classified as slum according to Delhi Master Plan of 1962. However, since the area was popularly known as the ancient capital of India, which contained forty-four- protected buildings under a heritage zone, the area gained recognition as a special zone under the Delhi Master Plan of 1972. Although various agencies including Indian National Trust for Art and Cultural Herritage (INTACH) and Architectural Survey of India (ASI), formulated the concept of "Heritage Zone", not much was done towards preparation of a plan on the basis of conservation and urban development. The parameters for conservation of the buildings were followed by the Architectural Survey of India (ASI), which adopted the unintelligent approach of a "100 meter zone - no development zone", a rule which did not allow any construction to take place within the hundred meters around the monument[11]. However, ASI rules overlapped with the Town Planning Act, which favored urban development to protect the heritage zone. The act also favored the enhancement of living conditions of the

---

[11] Menon,A.G.K. "The Case for Indian Charter" Online posting 2003, http://www.india-seminar.com/2003/530/530%20a.g.%20krishna%20menon.htm

area by allowing different development strategies, but to preserve the areas with rich heritage value. The area is considered as Old Delhi (the name given to Shahjahanabad in 1920s') due to its dilapidated conditions generated over time. However, due to its everlasting architectural and heritage value, it still holds the capacity to attract hundreds of tourists all around the world. Cities like Shahjahanabad need a special attention and care so that their rich symbolic character can be preserved .

The relationship of 'formal' and 'informal' development has been one of the critical issue in the urban regeneration of the traditional Shahjahanabad. The citadel which saw the inspectional formal geometries saw the bifurcation of development pattern marked by the feudalism which prevailed in the later years.

It has also been a story of continues tension, conflict, inter dependence and cooperation. The conflict situations are best manifested in the occasional drives of city authorities to remove the 'unauthorized' settlements, and more recently in the spate of public interest litigations against the 'pollution' caused by such settlements and work places. The inter-dependence is characterized by the numerous services that informal city dwellers provide to the city economy. Today the informal city has become so vital and organic to the city system of Delhi that the conventional approach of looking at the problem has largely lost its relevance.

2.2 Delhi in Transition-

New Delhi, the capital city of India, reflects a long history stretching over the period of 3500 years. It initially gained its name as Indraprastha (The abode of God Indra), where the famous Pandavas resided during the twelve years of their exile. Due to its strategic location in the fertile plains of the river Yamuna, the area was exploited and redeveloped several times, until it finally shaped in to a cluster of seven fort cities during 1300 B.C- 1600 B.C. -- the evolution of " The Seven Cities" of Delhi region. Finally, the last of the seven cities, Shahjahanabad gained

21

prominence when the great Mughal emperor Shahjahan decided to shift his capital from Agra to Delhi. Shahjahanabad was the last sustainable cities amongst the Seven Cities, a city which was repeatedly looted, plundered and reshaped by the foreign invaders in 1700 B.C. Later the city regained its name as "Dilli" (Delhi- The heart of India). Delhi was finally dominated by English Colonies in 1920s', when they established their imperial capital New Delhi, after they shifted their power from Kolkata to Northern India[12].

---

[12] Ghosh, B. "The making of New Delhi", School of Planning and Architecture, New Delhi, 1982.

2.3 The Seven Cities of Delhi
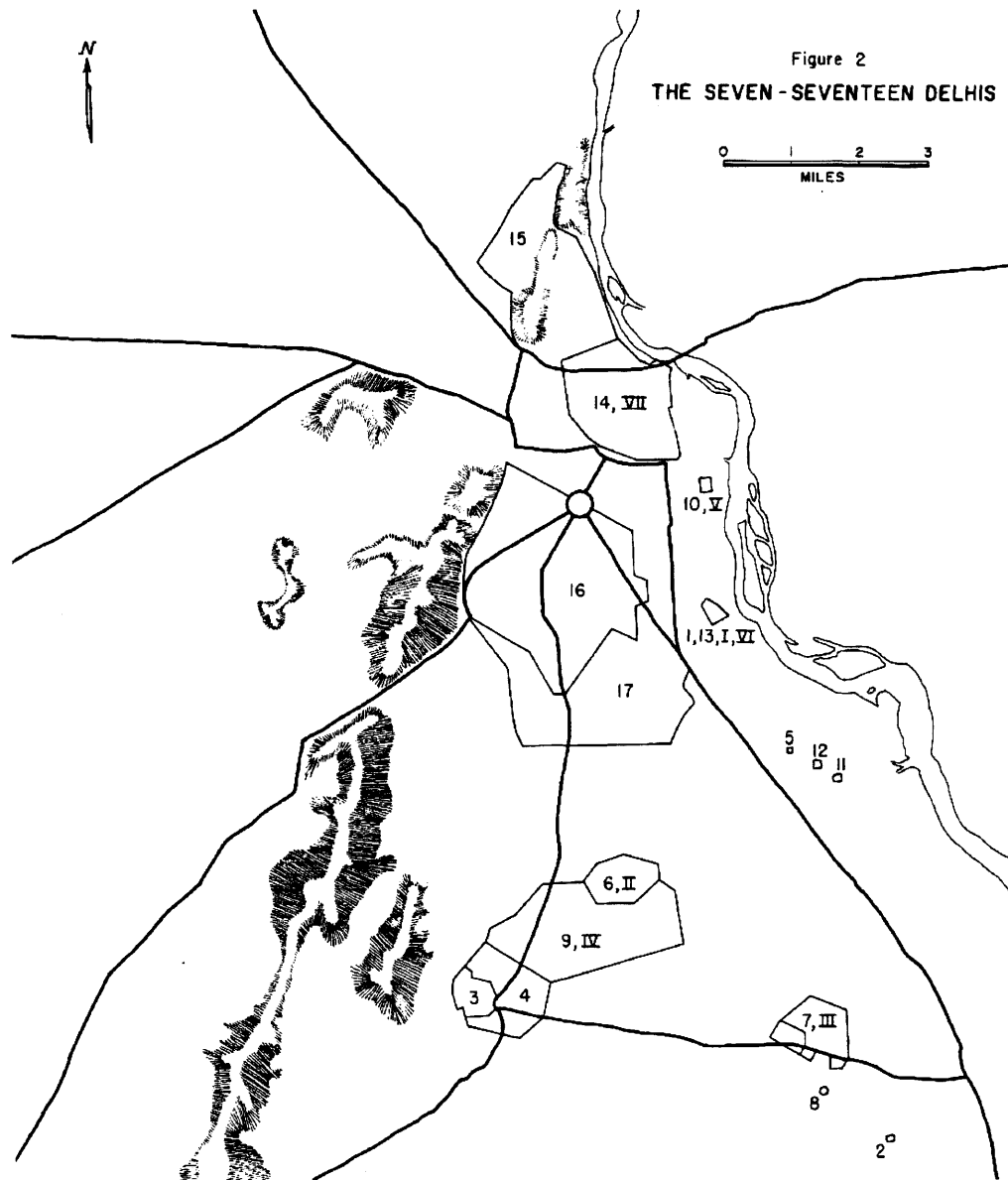
[Fig 2.3] **Seven Cities of Delhi**
Source: Idea of Delhi by Romi Khosla

The evolution of "The Seven Cities of Delhi" gives us insights into how earlier settlements were planned with respect to the geographical features, and helps us to understand how development took place at what point, and when the planning process went wrong.

Delhi has witnessed the evolution and annihilation of several dynasties. The reason why Delhi has been long envisaged as the capital of this country is not hard to establish. Flanked by the Aravalis mountain range on the northern and eastern edges, and by the river Yamuna in the east, a triangular plain forms the main city. The advantages of the location ensured that the rulers of this land would not be easily outflanked or besieged. The continuous flow of water from the river promised adequate supply for drinking, irrigation, and commerce. Thus, the location, together with various geographical and geopolitical attributes made Delhi the seat of the Indian empire.

The first city of Delhi was built by Chauhan Rajputs in 1100 B.C. Later the city was renamed as Quila Rai Pithora under the presidency of Rajput king Prithvi Raj Chauhan. In 1206, Qutubudin Aibak, one of the Musim rulers, defeated Rajputs and built famous "*Qutub Minar*", which stands even today marking one of the main

landmarks of Delhi. Around 1311, Allaudin Khilji established the second city at Siri and dug a vast reservoir at Hauz Khas -The Ramnents of fort Siri . Since the city was built on the foot hills of the Aravlali hills, it enjoyed the same benefits as Prithviraj's citadel- a perennial source of water, a good drainage slope, and soil that was ideal for cultivation. The location of the third city of Tughlaqabad came as a surprise. It was built by Ghiyasuddin Tughlaq on a much larger scale, to support the growing population of the city. Water reservoirs were built. However, there were some fundamental flaws in the establishment of the new city. The rocky outcrop consisted of quartzite with mica schist. This allowed for very limited rainwater percolation. As a result, ground water levels were very low and water reservoirs had to be built. Although Tughlaqabad is a part of the ridge, it is located upon a southern terminal of the ridge on a barren stretch with sparse vegetation. These factors led to the end of the city of Tughlaqabad. The shift of the city was understandably back to the Mehrauli area.

The fourth city of Jahanpannah originated nearby the Qutb complex. Although this location had several advantages, the overexploitation of water resulted in scarcity. Subsequently, the city of Jahanpannah had to be abandoned and shifted to a new area.

Ferozshah Tughlaq located the new capital within close proximity to the river Yamuna. This was a good move, which shows the emperor's astute awareness in planning. The shift of the river course over the period of time provided more land, which had rich alluvium deposits and could therefore be used for cultivation. Most importantly, the land next to the Yamuna was at a slightly higher altitude, therefore providing a good slope for drainage and hence preventing water ingress became an important issue. Ferozshah Tughlaq built the first section of Delhi's largest canal, the *Shah Nahr*. It marked the beginning of channelization of water[13].

2.4 Evolution of Shahjahanabad
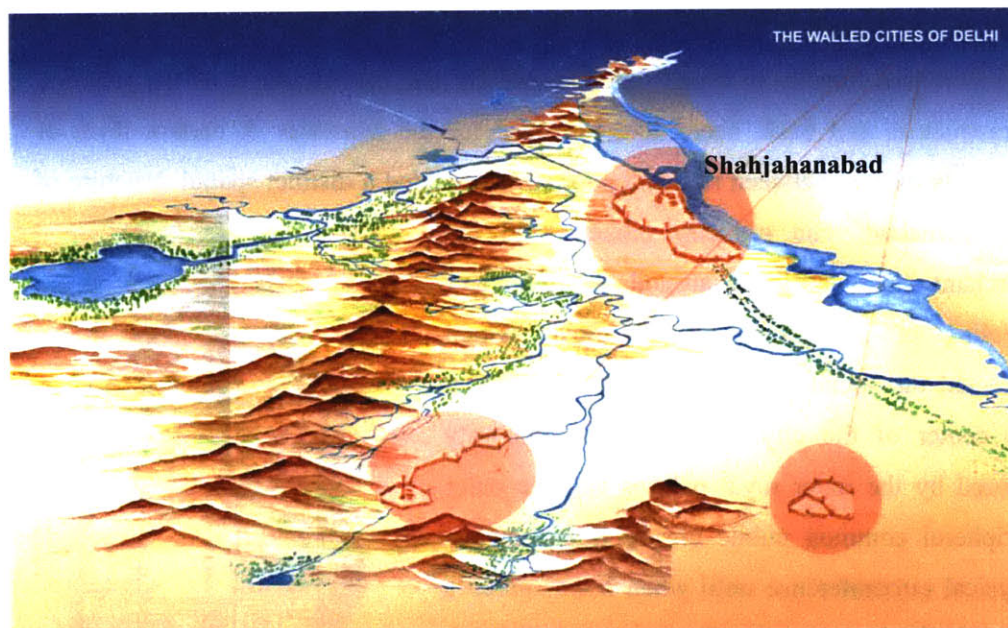
[Fig 2.4] **Setting of Shahjahanabad along the banks of River Yamuna**
Source: Author

The year 1206 saw the rise of the Muslim cultural revolution throughout the country with the arrival of Sultans from Afghanistan. Subsequently the Mughals

---

[13] Saxena, L., et al. "Drainage Network of Delhi- Evolution, Problems and Opportunities", School of Planning and Architecture, New Delhi, 2002.

established their monopoly all over the nation by 1526, when Babur, the first Mughal Emperor, conquered the city. Mughals often shifted their capital on the basis of availability of natural resources. The courts shifted their residence repeatedly between Agra, Fatehpur Sikri, and Lahore until 1638, when the Mughal emperor Shahjahan finally decided to shift his capital from Agra to Delhi.

The triangular site sandwiched between Delhi ridge and river Yamuna, was selected to set up the palace Lal Quila (Red Fort). Shajahanabad was laid out beside the fort, so that it could house the wealthy merchants and nobles serving the emperor during his power. Although the basic city planning principles, at that time, aimed to suit royal families, efforts were made to facilitate the ordered arrangement of *Jagirs* (land grants) owned by nobility and wealthy merchants. The land lying to the west of Red Fort was quickly parceled out followed by the establishment of the required infrastructure and basic needs like Mosques for the Muslims. A certain level of bipolarity existed between rich and poor which molded a distinct spatial structure of Shahjahanabad. The ordinary citizens and the merchant class clustered around the boundary "Walls" of Shahjahanabad, a move which reflected the social standing of Royal palaces in the center of the city. The level of bipolarity created by the inner royal palaces and the outer peripheral common public clearly demarcated a physical circumference until when it was given a shape in the late seventeenth century to build high walls of Shahjahanabad[14].

It is quite interesting to notice how the city borrowed foreign ideas of architecture and urban planning, which blended with the traditional
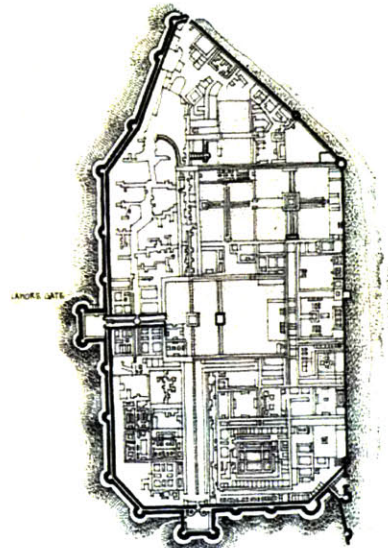
[Fig 2.5]. **Lal Quila (Red Fort)- The palace citadel of Shahjahan**
Source: Fonsec, R. "Walled City Shahjahanabad".

---

[14] Fonsec, R. "Walled City Shahjahanabad", Architecture + Design, Vol 25-26, 1992.

architectural vocabulary of Vastu (Symbolic ancient art and architecture of India developed in 1500-1600 B.C.) as seen in many religious architecture of temples. The courts built by Shahajahan were predominantly Persian influenced, which were inculcated with water landscapes adding remarkable aura to the royal palaces. In addition to the Persian influences in the architectural vocabulary of palace courts, the city as whole saw significant reflections of western style. There were many commercial and diplomatic connections between Mughals and Safavid Empire (Empire already stetted up in Afghanistan) which influenced the basic structure of the city. However, due to the hierarchy of caste system prevalent in the country, a certain level of bi-polarity generated between the rich and poor, which led to the development of informal Shahjahanbad. Though Shahjahan's architects Ustad Hamid and Ustad Ahmed followed the formalization (royal treatment) and symmetry of Persian planning ideas, they acted sensitively while dealing with the natural topography of the area and paid attention to the continuous shift in the course of the river Yamuna.

Moreover, they paid attention to the ruins of the precious settlements that sprung up during 1546 under Emperor Islam Shah. Thus the new courts of Shahjahanabad laid new routes of movement, which respected the network connections that had already been created by the previous forts and palaces. Despite `the irregularities provided by the uneven hillocks towards the western edge of Delhi ridge and the non-formalized version of meandering paths previously created, the new plan for Inner Shahjahanabad retained its formal geometry.

2.5 Shahjahanabad and its Urban Precedents
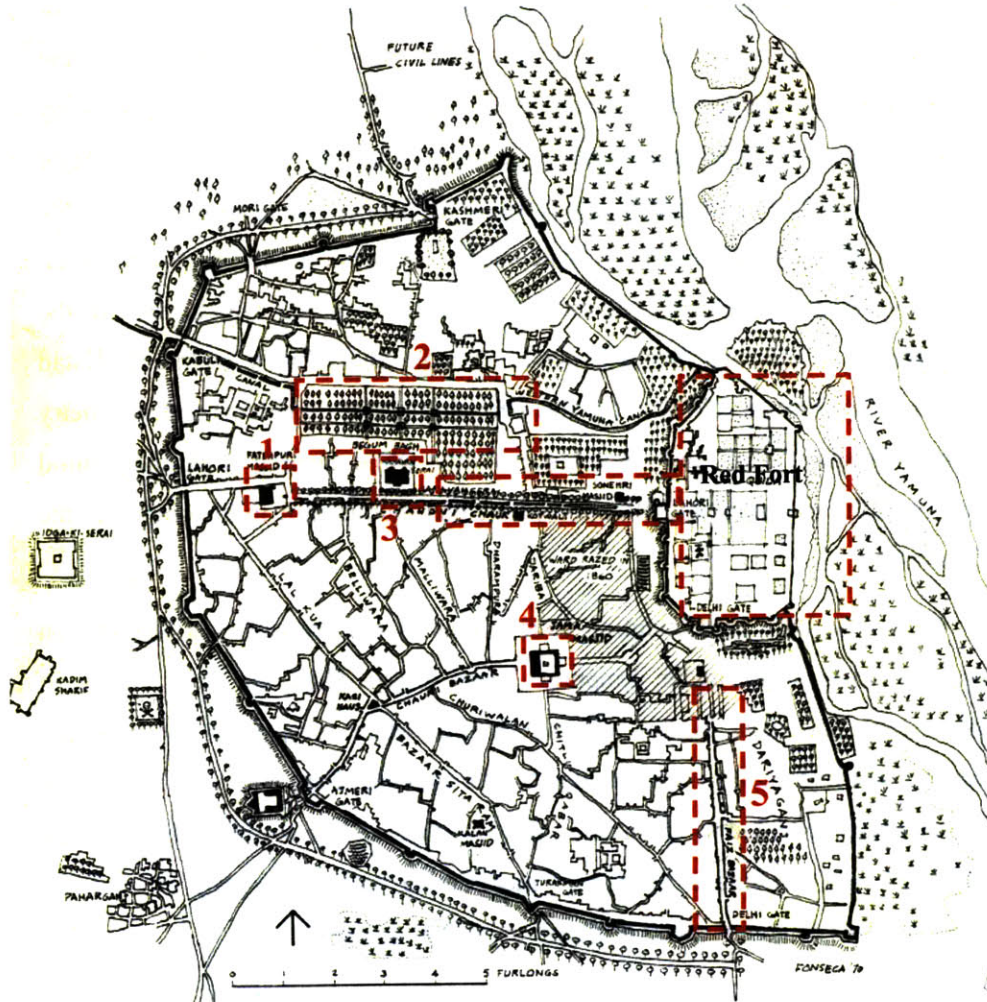
[Fig 2.6] **Shahjahanabad and the development of its important landmarks**
Source: Fonsec, R. "Walled City Shahjahanabad".

Red Fort, the new court of the Mughal capital, was systematic and formalized in its arrangement. Due to the controlled size of the planned forum and its strategic location on the planer side of the river banks, the fort took an elongated octagonal shape, roughly 500 by 100 yards in size. Its axis ran north south with elaborately landscaped courts lined with trees. It is quite evident from the earlier plans of Shahjahanabad that the two main orthogonal axis of the palace penetrating the fort gateways, to a certain extent, became the guidelines for the city structure outside the

walls[15].The city achieved its final shape with the completion of six basic architectural and planning elements, a form that has remained until today with minor changes.

Fatehpuri Masjid was the first architectural marvel which was created in 1650 by Shahjahan's Begum (Wife), which stood one mile away due west of Red Fort's Lahori Gate. Soon after, Fatehpuri Masjid Shahjahan's Begum (Wife) came up with the additional layout of 54 acre private gardens that oriented north-south, connecting the path between Red Fort's Lahori gate and Fateh Puri Masjid. Slowly the path connecting the two major landmarks turned into a more formalized movement corridor and the third important urban cord for Shahjahanabad. It later regained its name as Chandni Chawk, where rich merchants took up the residence and maintained commercial retail stores, which in turn generated a well defined commercial zone for the city. The later city structure saw few more important buildings like *Kotwali* (police station), Karavan Sarai and Sonahari Marjid along the main boulevard, which characterized the civic structure for Shahjahanabad.

The path received special recognition when it began to be used for ceremonial processions for royal families. The boulevard used to turn in to a public space during the late evenings and festival times. Soon after the water canal was dug, and connected the river Yamuna with the Lahori gate on the extreme west. Certainly the shift of the water landscapes from the royal private courts to public open space blurred the boundaries that have been previously created by the bipolarity of social class system.

The city started seeking cohesive social and economic structure, which to a certain extent, is responsible in making Shahjahanabad as the most sustainable of " the seven cities" of Delhi evolution.

Jama Masjid (the great mosque) emerged as the fourth important landmark for the city. Built during 1644 and 1648, the mosque was located around half mile

---

[15] Singh,P & Dhamija. "The Deepening Urban Crisis", Sterling Publisher's Private Ltd, Delhi, 1989.

from southwest of principal axis (axis connecting palace gate and Fatehpuri Masjid), which acted as a congregational place and still continues to attract thousand of people even today. The location of the mosque on the higher platform creates a vertical point of reference with the independent accentuating axis, one of which orients towards *Mecca*. The majestic structure with its powerful grandeur and independent orientation, continued to support monumental *Chowks* (neighborhood public spaces), which acted as the urban knuckles to connect the local neighborhoods in the city. The concatenate Chowks were aligned to the east-west axis and tried to blend with the streets towards Delhi gate (South Gateway of Red Fort) and main wall of the city. On the other hand, later, the north-south axis of the mosque was intended to match the irregular street pattern of local neighborhoods.

It is quite interesting to investigate that despite the fact the city core followed symmetrical plan, Shahjahanabad achieved irregular and amorphous shape in the plan. It could be that Shahjahan wanted to emphasize the internal geometry of the royal courts rather than the city edges, resulting in the fact that not much was thought about the external perimeters of the city. In general, farther from the central courts and the radial axis, lesser concern for the formal geometries. The outer boundary walls of Shahjahanabad was not aimed for safety precautions and aesthetic considerations, but followed more functional and topographical concerns. The wall layout at many points, was influenced by the preexisting ruins in the surrounding areas. Hence the southern side of the wall followed a curvilinear shape rather than a symmetrical one.

The Faiza Bazaar evolved as the fifth important component of Shahjahanabad. It was developed to link Delhi Gate of the fort and Delhi Gate in the city wall. In the later years this linkage turned in to a main circulation zone connecting Civil station and New Delhi. Kasi Haus, a water reservoir, that was the last urban element of Shahjahanabad which connected four important bazaars including Chandni Chowk, Faiz Bazar.

Along with the developed neighborhood clusters, chowks and streets, Shahjahanabad developed in to fairly dense city, which in the later years continued to follow infill development with semi-systematic evolution of street networks. Moreover, due to the enclosed nature of city's enclosure within the walls,

Shahjahanabad continuously attracted residents from the older and lesser secured settlements towards its southern zone. However, various portions of Shahjahanabad along the external wall remained open for fruit gardens and for the servant class who served the royal families[16].

2.6 Mughal Landscapes and its changing perceptions
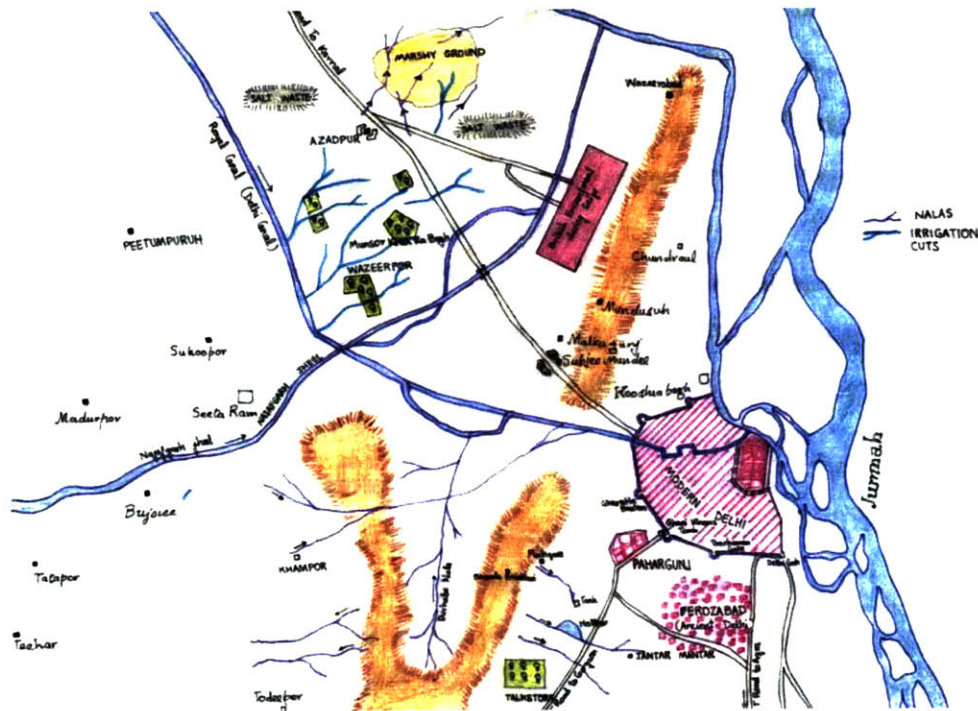
[Fig 2.7] **Shahjahanabad and its Landscapes beyond the city walls**
Source: Author

Landscape garden (Char Baghs) within and outside walled city evolved as defined space based upon the similar geometrical patterns as seen in many of the Islamic cities. These gardens not only served recreational and climatic factors, but also became the framing elements with centric mausoleum of commemorations. It's quite inquisitive to see how these gardens, which initially became the symbols of joy and sorrow, transformed in to colonial parks of symbolic administration. The parks which

---

[16] Fonsec, R. "Walled City Shahjahanabad", Architecture + Design, Vol 25-26, 1992.

were meant to carry memorial gestures of Islamic Imperialism later became the urban laboratories to carry garden city planning ideas of modern colonialism[17].
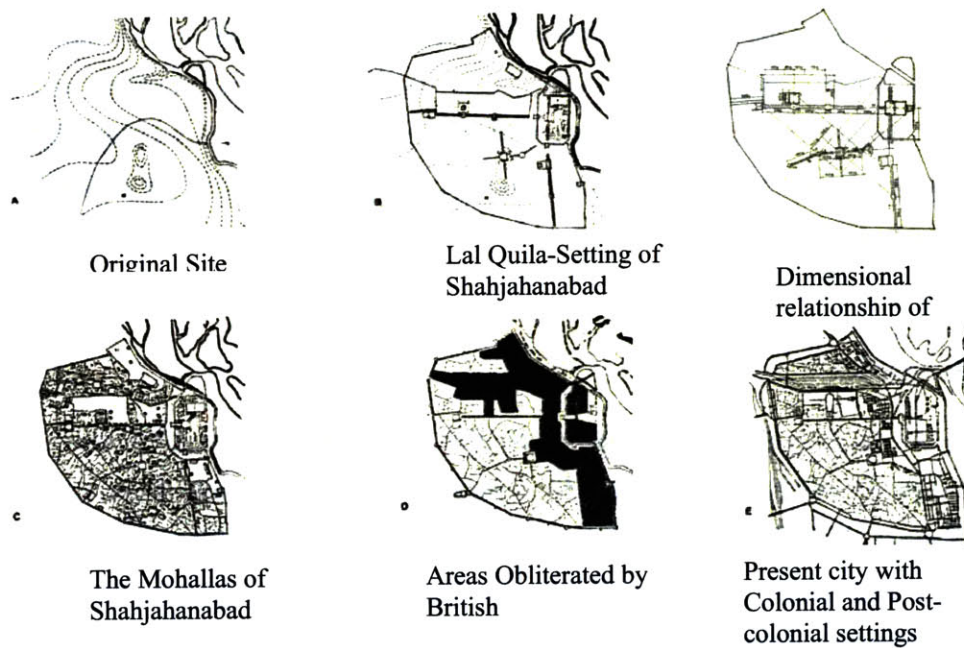
Although a certain bipolarity between the rich and poor was blurred due to the emperor's attention to the public realm of the city, the inner city near Chandni Chowk, predominantly remained largely private estate for nobles and merchants.

By the eighteenth century, Chandni Chowk shaped its form within the three distinguished sectors excluding Lal Quila: a) the areas towards the north of Chandni Chowk with royal gardens, villas and palaces of aristocracies, b) the Daryaganj sector, east of Faiz bazaar; the place where early European merchants, clergies and native Christians had settled earlier, c) the Southern area to Chandni Chowk, where most of the local inhabitants resided.

Shahjahanabad reached its peak during Aurangzeb's reign (1659-1707) when the population number touched 200,000. The suburban core of Paharganj, Sadarbazar and Subzimandi developed as the main service centers. Subsequently, the European traders developed Civil Lines as English architectural prototypes. After Aurangzeb, Shahjahanabad was continuously exploited by the foreign invaders like the Persian Nadir Shah 1779 and the Afghans in 1756. During this time, Shahjahanabad saw its worst times until it went under full control of the East India Company in 1803. The law and order sustained under the English rule was finally broken in 1857, when a group of Indian soldiers under the leadership of soldier Mangal Pandey , mutinied against the English rule. The fight went for four months during which a vast site of eighty acres besides Lal Quila was broken off to minimize the threat from the city side. Soon after the revolt, under the British rule, Shahjahanabad again restructured its economic prosperity. However, under the imperial Englishmen the city could not manage to divert sufficient attention towards the urban regeneration of the Shahjahanabad. The year 1857 came as good time for Shahjahanabad, when the city saw the introduction of railways connecting the major cities like Calcutta (Kolkata) from east, Mumbai and from south west. Although the railways stood as the major

---

[17] Sharma, Y. "A New Memorial Landscape for India", Published Thesis, Illinois Institute of Technology, Urbana Champaign, USA, 1998.

influencing agent in reshaping the city structure of Shahjahanabad, the rail lines punctured the great walls at several points of the city, and cleared vast areas to provide sufficient room for services. Consecutively, the city walls were broken at various places including area between Ajmeri Gate and Delhi Gate to avoid the physical barriers for the future growth outside the walls[18].

Original Site   Lal Quila-Setting of Shahjahanabad   Dimensional relationship of

The Mohallas of Shahjahanabad   Areas Obliterated by British   Present city with Colonial and Post-colonial settings

[Fig 2.8] **Chronological Development of Shahjahanabad**
Source: Beinart, J. "Theory of City Form Notes", MIT Cambridge

Railways made the center terminal and the main hub for commercial activities. The mercantile activities could easily be identified within the physical structure of the city, a trend which persists even today generating threefold level of streets: (a) Primary streets (Chandni Chowk and Chawri Bazaar) making east west connection between the Lahori gate and the palace. (2) Secondary Bazaar street; Streets including Lal Qua, Belliwara, Malli Wara, and Dariba connecting Chawri Bazar and Chandni Chowk providing links between Chawri Bazar and City gates towards the south (3) Tertiary level of Streets, which lead to the individual housing units. The

---

[18] Mohan, I. "The world of Walled Cities", Mittal Publications, New Delhi, 1992.

33

hierarchy of the streets reflected commercial activities at different scales as one moves from the primary streets, through the secondary streets, finally to the tertiary and the third level of streets. As the streets gained prominence, the neighborhoods and street junctions also received an intriguing informal character for which Shahjahanabad is known even today. At that time, the social structure of Shahjahanabad played an important role in providing a self sustenance, privacy and territorial characteristics to the city structure. Different *jatis* (communities based upon caste system) based upon the caste, held together by specific customs and physically defined enclave walls. Moreover, due to the prevalent *Pardah* system, the individual *havelis* and housing units were planned inward looking with the centrally located courtyards[19].

2.7 Colonialism

Since Delhi was emerging as the major destination center due to the establishment of the railways, the city had enough room for expansion to seek new development. Later Delhi Durbar decided to revive the center of Old Delhi (Shahjahanabad), and establish a new center, which could gain the recognition of the greatest imperial capital. Moreover, industrialization in other parts of the world had evolved with radical ideas of city planning, the vacant land under the British rule called for innovative ideas for the new capital, a capital that was suppose to reflect the grandeur of British rule in India. The establishment of new city sprouted fierce debates in architectural and political circuits of England regarding the question of style that could be implemented for a new emerging city. Although there was a common Indo-Sarcenic conception to respect the existing architectural style of Mughal architecture, Ebenezer Howard's design of "Garden City" became the central theme for the over all city structure. However, "The Garden City Concept" which was evolved from the city beautification movement, as the only remedy for

---

[19] "Havely" is clustered housing unit with a central courtyard which is usually supported by a semi-covered verandah. It is connected the internal arrangements of the room to give a Haveli Structure.

34

overcrowding conditions in the England's post industrial scenarios, created negative repulsions as far as existing Shahjahanabad was concerned.

Colonialism, in the 18th century, brought autonomy of architectural theories and urban space, where forms and functions took the highest priority and preferences. Many historians argue that the idea of modernism was to "keep away from the indigenous" artifacts, which would allow them to think rationally. However, eighteenth century also lead to a new outlook which considered modern architecture as "rational" and natural- the conception which became highly dubious within the architectural discussions. What has been "rational" was now seen as opinion, which was based upon the absolute reasoning. However, it was seen as contingent and relative, which later lead to the further debate of city space. Although, modernism supported historicists to derive architecture out of social phenomenon, they failed to control the city growth as a whole. Delhi reflects as a perfect example of urban lab where all the western ideas of modern architecture and Indian traditional architecture (as reflected in the plan of Shahjahanabad) were confronted and negotiated[20].

The traditional city of Shahjahanabad was identified as "native quarters" by the earlier European travelers and merchants, and the inhabitants were celebrated as the "crafty and deceitful- void of Christian". In response the indigenous people averted the western cultural traits and linguistic traits, which made them live separately, outside the indigenous communities. The initial cultural and linguistic confrontations not only reflected the social segregation but also a geographical one.

> *"Human beings do not live in the objective world alone, nor in the world of social activity as ordinarily understood, but are very much at the mercy of the particular language which has become the medium of expression for their society...The fact of the matter is that the "real world" is to a large extent unconsciously built up on the ,language habits of group. No two languages are ever sufficiently similar to be considered as representing the same societal reality. The worlds in which different societies live are distinct worlds not merely*

---

[20] Hosagrahar, J. "Indigenous Modernities- Negotiating Architecture and Urbanism", Routledge Taylor & Fransis Group, 2005

the same world with different labels attached" (Edward A. Sapir, Selected Writings in language, culture and Personality, 1949, p-42).

The difference in social organization led to differences in the spatial forms which was very well highlighted by the original city of Shahjahanabad and the civil lines planned outside walled city. The growing dominance of colonialism led many people to reject the past adopting new life styles, while failed to convince those who considered foreign ideas to be inferior and caution. As English language became the key recognition of advancement, it became the medium to represent a third culture- a colonial culture outside the walls. The persuasive colonial terminologies for various settlements outside the indigenous Shahjahanabad not only sensed to derelict the traditional past but also to infuse a newer version of colonial urbanization. The various colonial names given to the settlements outside the walls like Civil lines, Colony, and Bungalow became the fresh terminology to a new urbanization. The new definition to the third- culture concept created a double binary structure of duality: metropolitan alter and indigenous alter. The dualistic orientation created by the colonialism created "bifocal visions" and hence bipolarity in the city structure[21].

The new plans for the city emerged with the policies of slum clearance from the existing city so that its monumental characteristics and existing civic places could be merged with the new theme of the city. As a result Civil Lines, the area which transferred to India by English servants in the early twentieth century, was developed as housing for the senior governmental staff members (Gupta, 1982).

The whole idea of being rational, practical and functional generated by European modernism in the context of Delhi changed the formal characteristics of indigenous landscapes in to a quantifiable dimensions of monotony and disarray. The indigenous residential typology of Shahjahanabad, which was the primary

---

[21] King, A. "Colonial Urban Development- Culture, Social Power and Environment", Routledge & Kegan Paul, London, Henley & Boston.

36

housing unit of a comprehensible city structure, became the fragmented unit of triviality. At macro level, the Mughal gardens and orchards farms which became extroverted form of city structure now became the introverted colonial parks of memorial gestures. The landscapes regained its importance after the revolt of 1857 when they were identified as to carry forward the commemorative signs of national identity. The landscapes became the sacred markers of city structure depicting "Mutiny Pilgrimage".

After a rigorous discussion within the architectural and planning panel, which included Edwin Lutyens and Herbert Baker, a new site was located for the New Delhi in 1913. The site was laid three miles south west of Shahjahanabad. The site being located on the higher levels of Raisana hills, and far from the architectural ruins in the river plains, matched the Britishers dreams of a Utopian city of high status.
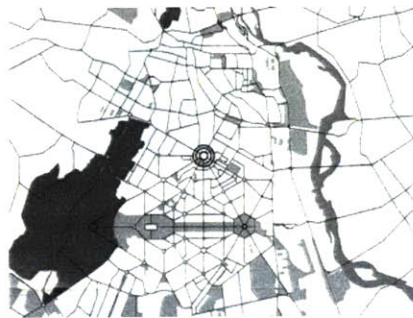
[Fig 2.9] **Plan Showing New Delhi and Shahjahanabad**
Source: Author

[Fig 2.10] **Raj Path Main Avenue of Lutyens Delhi**
Source:http://travelchannel.igougo.com

The new plan for the city was characterized by the wide avenues, boulevards, vistas, palatial residences, private gardens and Gymkhana clubs suiting "Burra Sahibs" – the high Indian class society who served the British government (Delhi Development Authority, Master Plan for Delhi, vol-1, 1964). Although, the new design for the capital with the foreign elements of grand avenues and palaces suited the upper class societies, to a certain extent, it failed to cater to the ethnic

class and low income groups society living in the existing core of Shahjahanabad[22].

The idea of "district zones", which became as one of the important aspect of Howard's decongesting planning theory, was taken too literally in India, as elsewhere. With the concentric plan, with its radiant spokes of circulations roads, the new Lutyen's plan was conceived as the easy way to allocate land and to determine urban land values. In contrast to what we saw in the evolving structure of Shahjahanabad, the New Delhi plan facilitated parceled lands, which housed segregated functions[4].
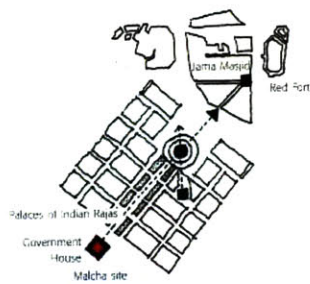
2.8   Evolution of New Delhi Plan

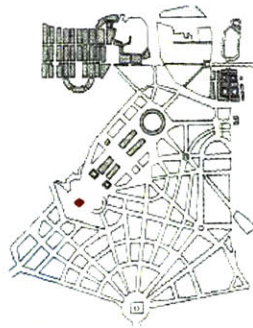Fig 2.11. **First Design Idea to link Jama Masjid in Shahjahanabad**

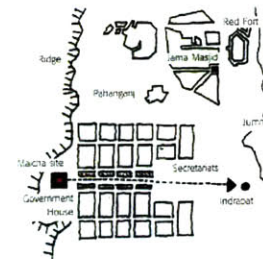Fig 2.12. **Creating urban boulevard to connect Jama Masjid in Shahjahanabad**

Fig 2.13. **Stage 2- Rotation of central axis, deviating from Shahjahanabad.**

Source: Gupta, A. "Gupta, A. " Dominion Geometries" , Masters in City Planning (MCP) Thesis, MIT Cambridge, 2005.

While New Delhi was under evolution , the design ideas were influenced by several propositions made by theoreticians, historians, and architects all around

---

[22] Gupta, A. " Dominion Geometries- Colonial Construction and Post Colonial Persistence of Imperial in New Delhi Plan", Masters in City Planning (MCP) Thesis, MIT Cambridge, 2005.

the world. H.V Lanchester, a colleague of early humanist and planner Patrick Geddes, proposed the first design, with the principal axis, which connected Jamamasjid in Shahjahanabad to the governmental house, which sat on Malcha Marg of Raisana hills. The idea was conceived on the lines of the Champs Elysees in Paris. The view from governmental house to the largest mosque of the country was the key idea behind the theme. Moreover , the plan incorporated a commercial hub in the center of the boulevard, in the shape of a circle, which later received the name Cannaught Place.

The second proposal retained the governmental house but introduced a cross axial plaza with two secretariat blocks, to break the monotony of the long axis. In the initial ideas of Lutyens plan, we can see how the planners and architects responded to the historical monuments in Shahjahanabad, but later, due to various monetary and infrastructure problems, the plan went under a series of modifications and finally lost the monuments significance of many iconic buildings in Shahjahanabad. Although, the plan was rotated and dimensions were adjusted to physically suit the site, the major theme of imperialism remained the same. For example, Paharganj area lying amidst the central axis of the planned forum, housed 15,000 residents, who had to be relocated.
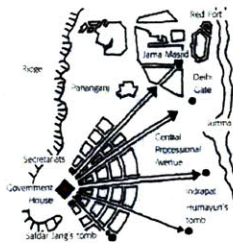

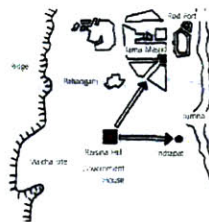Fig 2.14. **Final design with diagonal axis connecting Shahjahanabad**

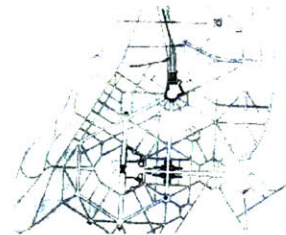Fig 2.15. **Final design with diagonal axis connecting Shahjahanabad**

Fig 2.16. **Lutyen's Delhi Plan with Shahjahanabad**

Source: Gupta, A. "Gupta, A. " Dominion Geometries" , Masters in City Planning (MCP) Thesis, MIT Cambridge, 2005.

The final radial plan, with the governmental building in the center, was turned 45 degree south-east to the fort of Indraprastha. The new plan consisted of three

primary boulevards, one of which still focused on the Jamamasjid. However, the plan's central axis turned at right angle, one end of which ended at a large reservoir along the river Yamuna. Had it been the main axis connecting Shahjahanabad, it would have made a considerable significance to its civic structure.

The final plan was characterized by hexagonal geometries and triangular patterns , of which the intersectional nodes were given significance by placement there of important building like museums and archives. The new design was based on a grand, spacious urban design, made up of landmarks and focal points along an axis. These landmarks and focal points were strategically placed based on the topography of the site to accentuate the grandeur and scale of the design[23].

Although Lutyen's plan configured one of the diagonal axis towards the Shahjahanabad, the people of Shahjahanabad had very little to do with it. With the conception "city beautiful" in mind, the New Delhi Municipal Committee proposed demolition between the new capital and Shahjahanabad at several points. At one hand, Lutyen's plan aimed to enhance the overall city, on the other hand it neglected the adjoining Shahjahanabad. Since there was already a continuous labor migration into the city of Shahjahanabad, the physical segregation between the two parts of the city (New Delhi and Shahjahanabad) eventually reduced the indigenous settlement to a giant slum. Apart from the distinct boundaries created between the geometries of the new capital and the old city of Shahjahanabad, there was clear hierarchical segregation in land use pattern, which in turn, further degraded the urban conditions of Shahjahanabad.

2.9 Old Delhi and Urban Expansion Beyond the walls

"...One thing is whether we have come by our empire righteously on unrighteous- whether we have been forced in to possessions we did not covet, or have sought quarrels that we might gain by issue- the natives at large have

---

[23] ibid

essentially benefited by the change of masters. It is true we do not erect temples to idolatry, nor huge tombs, nor lofty fortresses; but we have done far more: we have done our best, amidst enormous difficulties and obstructions, to give people education, and a wholesome administration of justice; we have constructed roads and canals, built bridges, introduced steam navigation, improved agriculture; and much more has to be done"

The establishment of railway infrastructure in the year 1880s led to a dramatic growth in the overall structure of Shahjahanabad. The new road and rail connections accompanied the proliferation of industries, which in turn motivated migration of people from the country side.

[Fig 2.17] **Plan showing Nezul Land around the walls, Year1860**
Source: Hosagrahar, J. "Indigenous Modernities- Negotiating Architecture and Urbanism
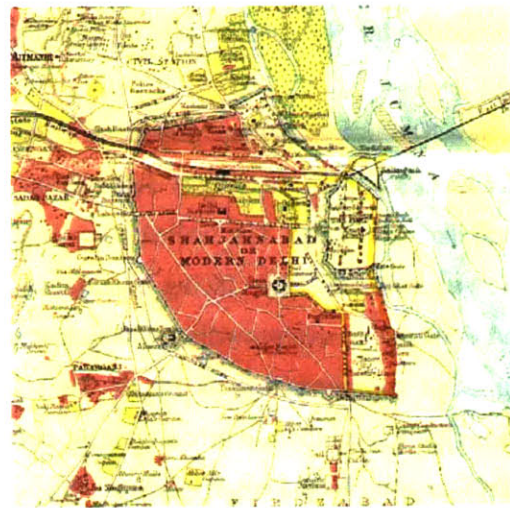
[Fig 2.18] **Shahjahanabad and its surroundings, Year 1893**
Source:http://homepages.rootsweb.com

Till the end of seventeenth century most of the urban densification occurred within the peripheral boundaries because of the military control of five hundred yards around the walled city. Towards the end of nineteenth century colonial rule struggled to expand the urban growth outside the walls of the city.

On one hand there were rational desires to improve the trade and commerce to within Shahjahanabad, which could be developed as the national commercial node for the newly designed capital, New Delhi. On the other hand, inspired by the urban

regeneration activities all around Europe, there were utopian desires to renew the inner core of Shahjahanabad which was facing congestion and degeneration of its living environments. The areas outside the walls which were once the known to be the Nazul's Land (land owned by nobelemen, and later occupied by Britishers), became the ideal lands for the urban expansions. Land became an important commodity which was rationally evaluated on the basis of its physical attributes. Although the population growth was enormous which quadrupled within the time period of five years, ironically, the areas outside the walls did not see major urban expansions to rehabilitate growing population, but became the grounds for lofty ideas to house governmental institutions of financial benefit. However, with rapid growth in the entrepreneurship, there were continuous tensions and negotiations which commodifed the Nezul lands in to discrete land uses.

As New Delhi was getting popular for its utopian visions, Shahjahanabad on the other hand suffered continuous degradation which was turning the city core in to a "slum like" condition. The walled city which once gained prominence for its unique civic structure was now facing emergency to cope up with the inhuman sanitary conditions due to overcrowding. Shahjahanabad in the early 20th century underwent a significant transformation as far as the public health and urban administration is concerned. Especially the urban contrast between old city (Shahjahanabad) and New Delhi increased by the empty enclaves outside the walls, which further intensified the economic disparity as the urban elitists in Shahjahanabad decided to relocate themselves outside the city walls. As a result the walls became the major barriers which screened unhealthy conditions and inner city problems from the outside world with prosperous expansions. However, finally in the year 1888 Shahjahanabad saw urban expansions beyond the city walls, some of which were analogous to the existing urban morphology as seen in the case of Shahjahanabad, and some aimed at the surgical demonstrations in the existing city fabric. Robert Clarke's proposals for the urban expansions at Ajmeri Gate became such interventions, which facilitated commercial expansions along its primary routes connecting the gate. The project conceived a similar notion of public spaces which imitated the various urban precedents as seen in the traditional Shahjahanabad. The development scheme

efficiently tried to stitch with the existing urban development within the peripheries, rather than following social reforms and abstract diagrams followed elsewhere in the New Delhi areas.

Despite official efforts to propose rational and healthy environments through the designs, the turn of the century saw haphazard development as a result of unabated growth of population.
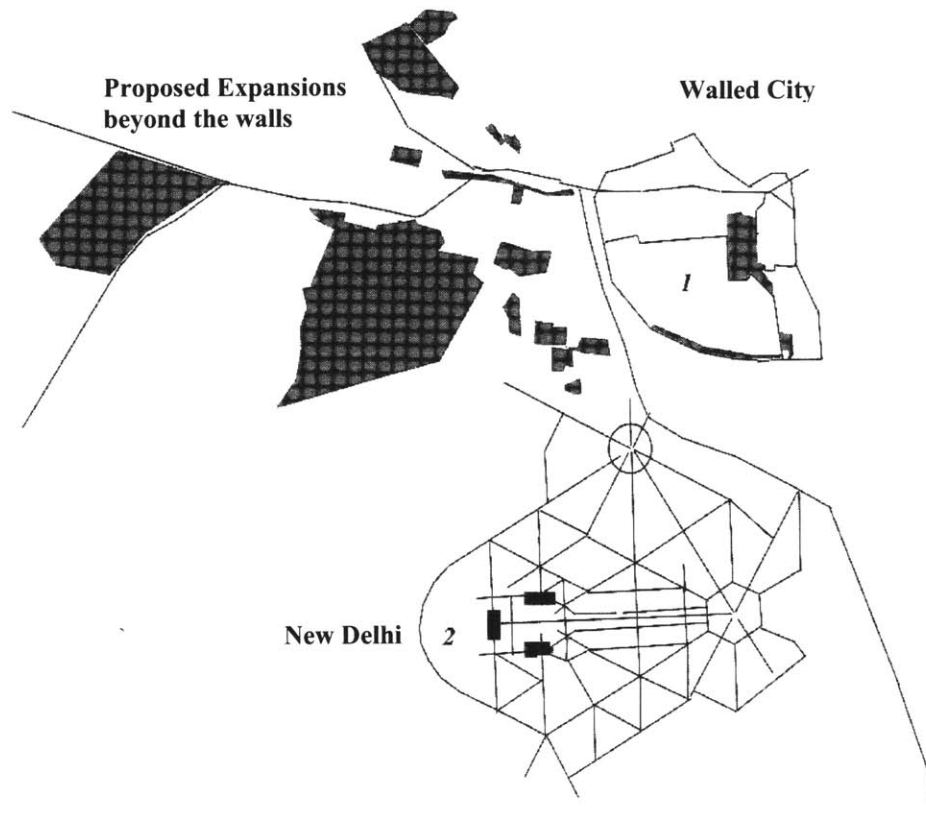
[Fig 2.19] **Plan City Expansion Proposal as per DIT (Delhi Improvement Trust) Scheme**
Source: Hosagrahar, J. "Indigenous Modernities- Negotiating Architecture and Urbanism

Slum clearance and urban expansions became the important actions which were strategically controlled by the Delhi Improvement Trust, the organization which was formed under the A.P Hume to monitor controlled expansions beyond the city walls of Shahjahanabad. Housing proposals in south Daryaganj with commercial land use along with Faiz bazaar street became some of the development near the city walls. Delhi Ajmeri Gate slum clearance became another ambitious project by DIT which

dealt with the city's dense urban fabric multiple ownership rights. The new plan brought down the high walls pf Old Delhi while planning spacious streets with adequate community facilities. As per report provided by the Delhi Improvement Trust (DIT, the population grew by 35% over 1911 and 27% over the year 1921. The wards outside the walls including Subzi mandi, Sadar bazaar saw substantial growth in the population with 87% increase over 1911 and 63% over 1921.

In order to deal with the fast growing population DIT considered additional lands including Roshnara Bagh, North City extensions, and Ajmeri gate slum clearance. Although the development planned outside the walls opened venues to accommodate continuous growth of the population, the local economy of further strengthened, which in turn widened the gap between formal and informal Delhi[24].

2.10 Old Delhi in its Post independence Period

Ironically, after India gained independence in 1947, colonialism left its ideological footprints which were then passed on to the Indian elites who tailored the colonial agendas of being modern, and away from the traditional and historical, which they felt as outdated and non-inspirational. The stigma attached to Shahjahanabad persisted, which was rationalized in to the criticism of the physical fabric of the city.

By 1913, Delhi had set up its base to become the major urban center of India, the government was followed by the appointment of various committees to take care of development in the Delhi region. Delhi Development Authority played an important role in promoting public heath, safety and social welfare for the community, so that healthy growth takes place especially in Shahjahanabad, which was getting denser day by day.

---

[24] Hosagrahar, J. "Indigenous Modernities- Negotiating Architecture and Urbanism", Routledge Taylor & Fransis Group, 2005.

Shahjahanabad went under a considerable change in its social, demographic and cultural landscapes with the partition of Indian into two different independent nations. The walled city saw a sudden influx of 1,500,000 people just in four months, out of which 500,000 were listed to be refugees.

In order deal with the problem of over crowding and congestion, the late Prime Minister Pt. Jawarhar Lal Nehru proposed " slum clearance " and relocation of the 100,000 refugees outside the city walls. Although central government policies demarcated the land owned by central government to relocate a large number of refugees in the suburban areas, Shahjahanabad continued to attract thousands of people every year. As a commercial center, soon the walled city turned in to a swamp of unauthorized colonies, which became the biggest problem for the redevelopment of Shahjahanabad in the later years. The changing attitudes of the government towards the squatter settlements, in and around the walled city, continuously allowed the influx of migrants, and lead to the rise in the land speculation and black marketing. The situation in turn lead to the increasing rents, and hence deterioration of Shahjahanabad housing stock. The lower income class people had no option but to crowd together in the indigenous areas of the city.

Ebenezer Howard's concept of providing low urban density in the outskirts of the city continued to be the basic approach of the central government to eradicate the problem of slums from Shahjahanabad. However, since poor people were unable to match affordable rents, they had no other option but to move to the city of Shahjahanabad, which provided them better economic possibilities. There was a lack of coordination between economic planners, urban planners and housing reformers, which lead to the urban degeneration of Shahjahanabad, as the late Catherine Bauer Wurster said in 1956 ," ... one group makes many decisions that actually shape development patterns for better or worse, while other struggles with the resulting problems, too often without looking in to their causes."

In a way, Shahjahanabad proved to provide better urban conditions for its inhabitants, than what was proposed by Ebenezer Howard in England. It was more

conducive to better climatic responsive, due to its tight knit urban fabric which responded well to the high temperatures during the summers[25].

There are numerous examples where Delhi government adopted slum clearance and rehabilitation schemes but none of them were successful. One of the main reasons for the failure behind various redevelopment schemes was that none of them responded to the social needs of the migrants, which forced them to migrate to highly urbanized city like Delhi. The plans for slum rehabilitation were characterized by neat zones, and minimum standards set by Delhi Development Authority, the standards that have been derived from the primary conception of Ebenezer Howard's minimum open space to support habitable life. Today, the typical ward (neighborhood cluster) breakdown for Shahjahanabad today is 15% in the streets, lanes and neighborhood spaces; 6% in the public, religious and monumental spaces; 25% in the internal courtyards; and 54% in the structure. Compared to that, 20 new slum rehabilitation analyzed in 1975, the ward breakdown is 25% roads ; 12% public; 23% parks; 16% incidental open spaces surrounding the buildings; and 24% structures[26].

The new scheme compared to that of Shahjahanabad, provided lesser habitable space with low commercial activities on the ground. Moreover, the new designs followed multistory clusters, which in no sense suited poor people for whom small kiosk or pan shop could be the best means of livelihood.

In all the cases, when compared to the new proposed plans, existing Shahjahanabad neighborhood structure proved to best fit the requirements of slum dwellers.

The question arises that do we need to follow Shahjahanabad standards for the new slum rehabilitation   or do we need to seek permanent solutions and

---

[25] Mehra, A. "The Politics of Urban Development- A Study of Old Delhi", Sage Publications Inc, New Delhi, 1991.

[26] Fonsec, R. "Walled City Shahjahanabad", Architecture + Design, Vol 25-26, 1992.

reevaluate the roles of residents in the present needs of urbanization. We have to definitely seek an innovative phenomenon incorporating urban design ideas, which can allow the community to participate in the over all regeneration of the traditional core of Shahjahanabad, In the words of Lewis Mumford, *"The best economy of the city is the care and the culture of its people."*

2.11 Post Independence period: nationalism and creating national identity

The fight to seek freedom started by revolutionaries intensified the idea of whole idea of nationalism which not only was reflected in their actions, but was also reflected in how they intended to restructure the fragmented landscapes of negotiation and preserved the heritage environments of old fabric.

"Nationalism is primarily a political principle, which holds that the political and national unit should be congruent. Nationalism as a sentiment, or as a movement, can best be defined in terms of this principle. Nationalist sentiment is the feeling of anger aroused by the violation of the principle, or the feeling of satisfaction aroused by fulfillment. A nationalist movement is one actuated by the sentiment of this kind" Ernest Gellner, Nations and Nationalism

The feeling of nationalism aroused nation's consciousness amongst the people, which was reflected in their shared visions- the very idea defined them as a community with a group like minded individuals. The modular concepts of nationalism and modernity, bifurcated the world in two domains- outside and inner. The outside domain, which was concerned with science and technology and the internal domain which constructed their own sense of culture and contestation to political power[27].

---

[27] Chatterjee, P. " The Nation and its Fragments", New Jersey: Princeton University Press, 1993.

2.12 Post-independence construction of indigenous-modern

Post-independent Delhi once again stood up for establishing power but with a common perception of nationalism. The national agendas propagated by various political leader including Pt. Jawahar Lal Nehru and Late Mrs. Indira Gandhi, were implied as "Indian-ness" congruent to the sense of modernity. The new landscape hence symbolized as antithesis to colonial, and authoritative in their expressions. The monuments of Shahjahanabad were highlighted as the "national heritage", and the spaces around the walled city which were once left vacant due to the continuous friction between indigenous and colonial rule, were rethought to construct for the Indian identity of public space. Raj Ghat, on the west edge of Shahjahanabad is one such open space, which was developed in unison, to commemorate the deaths of those great leaders who fought for Indian struggle for Independence. The design of these memorial gardens, although modern, borrowed the ideas from those architectural forms that were truly Indian.

The consecutive ideas of indigenous, colonial and then post-independent
(era infused by nationalism underwent a dramatic changes in their theology, which physically reflects in the patchy collage of incongruent Delhi. Delhi today is known by its post colonial structure which is reflected by the monumental geometries of New Delhi. The "post colonial city core" of the metropolitan National Capital Region, which spreads in the area of 30 Sq.kms. undermines the significance of Shahjahanabad (Old Delhi), which once formed the traditional core. Shahjahanabad, today, although characterized as enigmatic due to its smell and visions, fails to highlight its immemorial histories which embed in its fragmented monuments. The city core lacks a comprehensive structure and a sense of continuity with the rest of Delhi.

" As Delhi's own history amply demonstrates, there is often only a fine line to be drawn between the desire to create a totalizing image of the city and the confusion of that image with the reality" Denis Vidal.

The image of Delhi is characterized by a patch work of urban fabric, which has been perpetuated since its medieval times. The heterogeneous character of the social, and cultural architectural identities are not only reflected in the discreet urban society but also in the physical plans and architectural forms[28].

---

[28] Menon, A.G.K. "Monuments of Power- Delhi", Manohar Publishers & Distributers, New Delhi, 2000.

3 Analyzing Current Urban Design issues and Problems of Shahjahanabad

3.1 "Dilli ki politics"- Delhi and its politics - need for a dynamic change.

Politics has played a pivotal role in the urban transformations of Delhi whether it was the decay of the traditional core of Shahjahanabad or the contemporary agendas to re-develop Lutyen's Delhi in to a "Nations space". Although feudalism has replaced the democratic system, the hierarchical system of different income groups and the active politicians tend to foresee the city divisions in to "formalized" and "Non-formalized" clusters of the city. In spite of the political agendas to make the constituency problems free, the over all city continues t o face city's economical bifurcations. For example there has been a general consensus within architects and planners to revitalize Lutyen's Delhi in to a "Nation space". The Lutyens Delhi and its surrounding urban fabric, which was designed to avoid the lowly Indians out of the imperial city , ironically this is one of the main functions which exists even today. Unlike many democratic countries like United states, India has always been led by rulers who influenced the government that made all important decisions. Moreover the government in turn helps the important sector of the city with monetary capabilities. It is the back way of doing things and part of the main reasons why India has never gotten out of the development phase. It is the great disparity between the rich and poor that India lacks the policy to guide dynamic quick paced process like the urbanization is bound to affect the nature and environment of urban centers[29].

---

[29] Mehra, A. "The Politics of Urban Development- A Study of Old Delhi", Sage Publications Inc, New Delhi, 1991.

50

3.1 Migration

"Migration to City" has been one of the major phenomenons which has guided the growth of many Indian cities in the past. The Poor people are lured to settle down in the urban centers in the search for better economic opportunities. However, their lifestyles and behaviors do not respond to the latest patterns of urban elite. The demographic study has shown that Delhi being the second largest populated city of India, and the major portion includes the migrants from surrounding states. Consecutively, the study shows that development of Delhi has been influenced by the transition of illiterate migrants in to lit iterate city dwellers. Where as the planning policies with globalize tend to undermine and retard the absorption of poor migrants in to the city life. Also, the national development policies with specific aims do not match with the local implementation of development patterns. Slum clearance is one of such common base agendas where the government woes for city cleanliness and healthier prospects. The slum clearance decreases the housing stock and displaces low income groups, which has become the inevitable part of city population. Rent regulations tend to discourage the housing stock and increases the unbalanced land speculations and thus black marketing. Zonal regulations allows for efficient development of vacant lands but at the same time hinders occupational mixing of different economical regions. Illegal land distribution further deteriorates the scope for the applicability of rules and regulations. In various master plans developed until the latest Delhi Master Plan 2002 (DMP-2002), much stress has been given displace and decongest the city by developing the low density on outer fringes of Delhi. However the motivation to seek better land opportunities, in the lower purchasing power of illegal lands, have made people to continuously move and settle in the city. As a result the whole process of city decentralization has not been successful[30].

---

[30] Nath, V., Dr. " Planning for Delhi", Geo Journal, Kulver Academic Publishers, 1993.

51

3.2 Failure of Suburbanization

The proliferations of low density colonies have increased the city boundaries from 77.5 square miles in 1951 to 126.08 square miles in 1961: the enlargement of about 61%. However, at the same time the inner core of the city has never halted in its population growth, which has rather increased at the gradual pace of 15% per year[31]. The whole process of low density housing stock in the surrounding areas have always consumed money while creating a financial burdens on the over all development of city. While there is need to efficiently use the monetary power to seek innovative ideas reflecting current needs and situations.
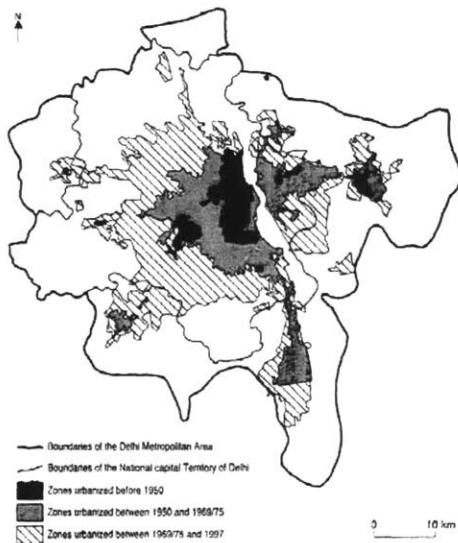
[Fig 3.1] **Growth of Delhi**
Source: "Delhi- Urban Spaces and Human Destinies"
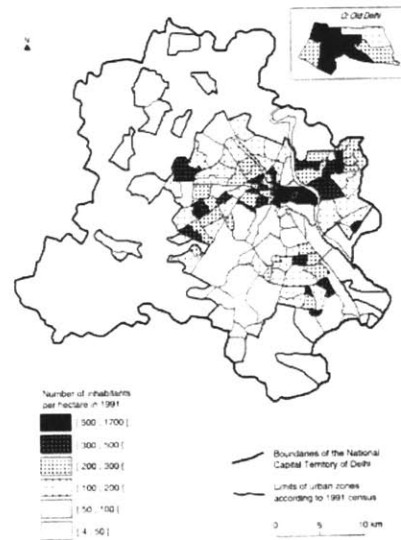
[Fig 3.2] **Population Density of Delhi**
Source: "Delhi- Urban Spaces and Human Destinies"

Delhi and its population pressure has always grown outwards creating nucleic centers to absorb future expansions. The initial city which was limited to its boundaries not exceeding the diameter of 6 miles, today, extends its arms covering 26 miles. The nucleic development of various centers around region have tried to reduce the immigration pressure, the central and the old city have never lost its importance.

---

[31] Dupont.V., Tarlo.E. and Vidal.D. "Delhi- Urban Space and Human Destinies", Manohar Publishers & Distributers, 2000.

52

Although the regional center like Gurgaon and Noida have been able to support the basic infrastructure and amenities required for any self sustainable development, they have failed to retain the social structure typically seen in the urban lives of Indians[32].

Shahjahanabad evolved out of its existing social structure suitable for an appropriate climatic condition. The typical ward breaks down in to 15% in public, religious and monuments space; 25% in the internal courtyards; 54% in the structures. Where as the colonies in the outer Delhi supports 25% in the roads; 12% public spaces; 23 % in the parks; 16% included in the open spaces surrounding the buildings; and 24% in structures. The semi public courtyard space, which is visible in the old city (Shahjahanabad), goes off in to the useless spaces around the today's buildings. The compact development of the surrounding areas will not only minimize the travel distance but also lessen the financial burden of site maintenance and in order to revitalize the dilapidated areas of the city Delhi and as a role of cultural and political ideologies of the nation we need to redefine the role of the city in today's context[33].

3.3 Re-densification of Lutyen's zone

Lutyen's Delhi (New Delhi) has played an important role in the creation of national identity in the contemporary times, however undermined the problems that spurred due to its underutilized lands with less density, creating severe contrasts especially in those areas which share common boundaries with the densely packed historic core.

One hand there is a consensus to treat New Delhi as post colonial city core, signifying a nation space for its democratic environments, on the other hand, it undermines the whole issue of treating new city as a nation space amidst those rich

---

[32] Fonsec, R. "Walled City Shahjahanabad", Architecture + Design, Vol 25-26, 1992.

[33] Breese, G. "Urban and Regional Planning for the Delhi- New Delhi Area", Capital for Conquerors and Country, Princeton, New Jersey, 1974.

historical cores which are known truly Indian and bears history that is thousand years old. The densification of Lutyen's Delhi to relieve the pressures of Old Delhi has been one of the critical issues in the architectural debate. The inner contrast in the density that the two cities (Old Delhi and New Delhi) reflect has been one of the significant reasons why Old Delhi has always confined to its peripheral boundaries, which otherwise could have been the integral part of larger city of Delhi.

[Fig 3.3] **Urban Fabric of Shahjahanabad**
Source: Walled City of Shahjahanabad, A+D.
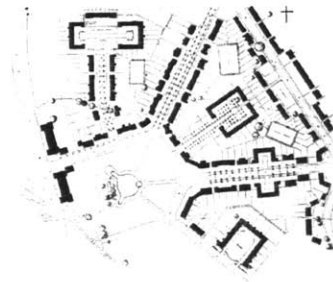
[Fig 3.4] **Urban Fabric of Lutyen's Delhi**
Source: Delhi Urban Arts Commission (DUAC)

The plan for New Delhi emerged as a gimmick which was designed to accommodate pageants, grand displays new trends of business activities and administration. The baroque planning with wide boulevards and vast greens landscapes stood antithetical to what has been observed in many traditional cities of India. The country's partition in 1962 not only increased the population pressures in the surrounding fringes of Old Delhi, but also glorified New Delhi as cantonment restricting any form development. The Delhi master plan of 1962 identified the problems of low density in the "Imperial Zone" which lacked low density compactness and social cohesiveness. The rationales adopted in the ramifications further disrupted the over all development as multistoried commercial buildings started replacing the British Bungalows. Although the negative implications of commercial high rise were later identified but lead to the freezing of the Bungalow zone with no further additions and alterations. The area reflects a density of 60 people per acre which in response Old Delhi reflected 350-400 people per acre. Today more than a quarter of the population does not live or work in New Delhi, with almost half of people who work here do not live in New Delhi. Today the imperial zone of Delhi does not intend to derive its identity from its

54

people but through dominion city planning ideas which have been preserved with no further scope of development.

[Fig 3.3] **Existing Figure Ground depicting Density differences between two cities**
Source: Author

The institutional and civic zone between New Delhi and Old Delhi, sandwiched between New Delhi railway station and Delhi gate depicts an important area of consideration which is under utilized and carry the over all density of 75 persons per acre.

[Fig 3.5] **View at Ajmeri Gate overlooking Lutyen's Zone**
Source: Author

The area is characterized by governmental based utilities including hospitals, colleges, hostels, and facilities centers. Although these facilities cater to the wider section of Delhi, they fail to deliver some of the immediate needs for the adjacent Shahjahanabad; the city which is characterized by totally different level of public activities and needs. Moreover, the low density morphology of the area tends to segregate the cohesive mix of informal activities from the formal land use that occur

55

in the New Delhi zone. It is quiet alarming that world's largest democracy makes the most of the governmental owned properties inaccessible to its local public.

" A modern and particularly a demographic city spells out that every part is a place for each and every city dweller" Stupendu Das

The impermeable character of Imperial zone has been not only impermissible to public, but the notion of territoriality has been reinforced by the peripheral walls. The area should be made accessible to the local public in order to break the monumentality and feeling of dominance that Lutyen's Delhi aspires to sustain.

The transitional zone between New Delhi and Old Delhi (the area specifically under Imperial zone) blatantly violates the Indian urban policies which states that there should be maximum optimization of land; the aim should be to absorb the land flexibly resulting out of demands of the growing city, and to widen the base of land ownership and safeguard the interests of the weaker section of the society.

The strong notion of plotted territoriality need not define the cities. The old cities like Shahjahanabad favored its denizens to perceive its surroundings as they move and perceive their immediate urban settings. New Delhi tried to provide distinct sense of territoriality for them and for the people they ruled, which needs to be blurred in order to make the public places more permeable and accessible.

The public accessibility to the Imperial Zone would not only develop the underutilized lands but also raise the spirit of democracy, and strategically helps to accommodate some of the growing inner problems of Shahjahanabad. The transitional zones under study needs to open up for further interaction to change the bounded territories in to a interconnected and cohesive land use patterns[34].

---

[34] Jain, A. "Delhi Debates: Should Lutyen's Delhi be opened to Development?" Seminars on Architecture, School of Planning and Architecture, New Delhi, 1999.

3.4 The problems of urban back yards: The underutilized urban voids beyond the walls of Shahjahanabad

Many times cities reflect zones of underutilized lands which evolve as a result of continuous layering and superimposition of urban infrastructure. This is a generic situation arising especially on the edges of the older cities, which were unable to match the urban patterns with the new cities. These areas are relegated as backyards spaces which in the case of developing countries offer no more than illegal lots of squatter settlements. With the growth and physical expansion of the city, these sites offer continuous problems, but contain immense potentialities in getting transformed in to positive spaces of functional importance.

[Fig 3.6] **Underutilized Lands around Shahjahanabad as Urban Backyards**
Source: Author

[Fig 3.6] **Proliferation of Slums Along Railway lines**
Source: Google.com

The areas around the walled city of Shahjahanabad have some of the examples which disrupts the urban form by the existence of urban backyards. The dead vacuum which evolved due to the leapfrogging of development offer serious distortions in the density patterns and constant pressures especially at their peripheries[35].

---

[35] Transik, R. " Restructuring Antispace", Chalmers University Press, Goteborg Sweden, 1986

The areas require immediate attention so that it not only converts the "negative spaces" of the city in to a positive spaces, but also helps in structuring the legibility and imageability of historical Shahjahanabad which is endowed with many architectural monuments within its peripheries.

3.5 Traffic and Transport Problems

The traditional Shahjahanabad which evolved on the basis of its commercial trade routes structured its spatial urban form with its gates defining the entry points in to the walled city. Colonial era in the early 19th century, treated the walled city as a separate entity and developed their own quarters outside the walls primarily with intentions of new infrastructure and new movement patterns. Over the past fifty years Shahjahanabad has grown introvertly twice as compared to the external expansions beyond its walls. By the time Delhi could evolve in to a comprehensible city structure, Shahjahanabad has already evolved in to mini-city with all possible infrastructure needed for an ideal, sustainable city; with its central specialized markets and strategic location fort forming its civic body, and the city edges serving multiple modes of transportation from freight stations to the public transportation.
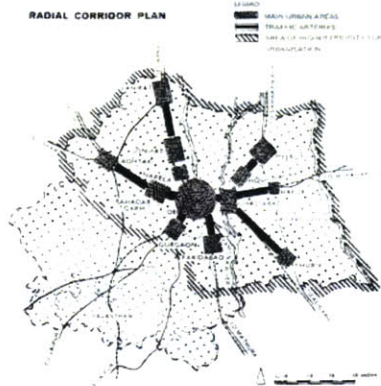

[Fig 3.6] **Radial Transportation Corridors connecting Satellite Towns**
Source: Urban & Regional Planning for Delhi by Gerald Breese

[Fig 3.6] **Traffic View of Shahjahanabd**
Source: http://images.google.com

Today, Delhi has evolved in to a polycentric, poly nodal, and radial city structure, Shahjahanabad however, retain is central significance as a major commercial hub

feeding larger region beyond Delhi. The continuous infrastructural pressure of expanding city on the traditional core has led to the transformation of its inner, accentuating radial routes in to congested streets confined within the walls. As a result the streets which became the main traffic feeder for the regional north India now became the independent cords to carry traffic in multiple directions. Although the system of ring road connecting the inter state radial corridors have lessened the inner traffic problem of the city Delhi, Shahjahanabad continues to face traffic congestion with no concerns about the innermost ring surrounding the walls. Although the traditional core is well connected by its interstate highways which radiate out in to different satellite towns, due to inefficient integration of different modes of transportation along the edges of old city, Shahjahanabad faces inevitable complexity.
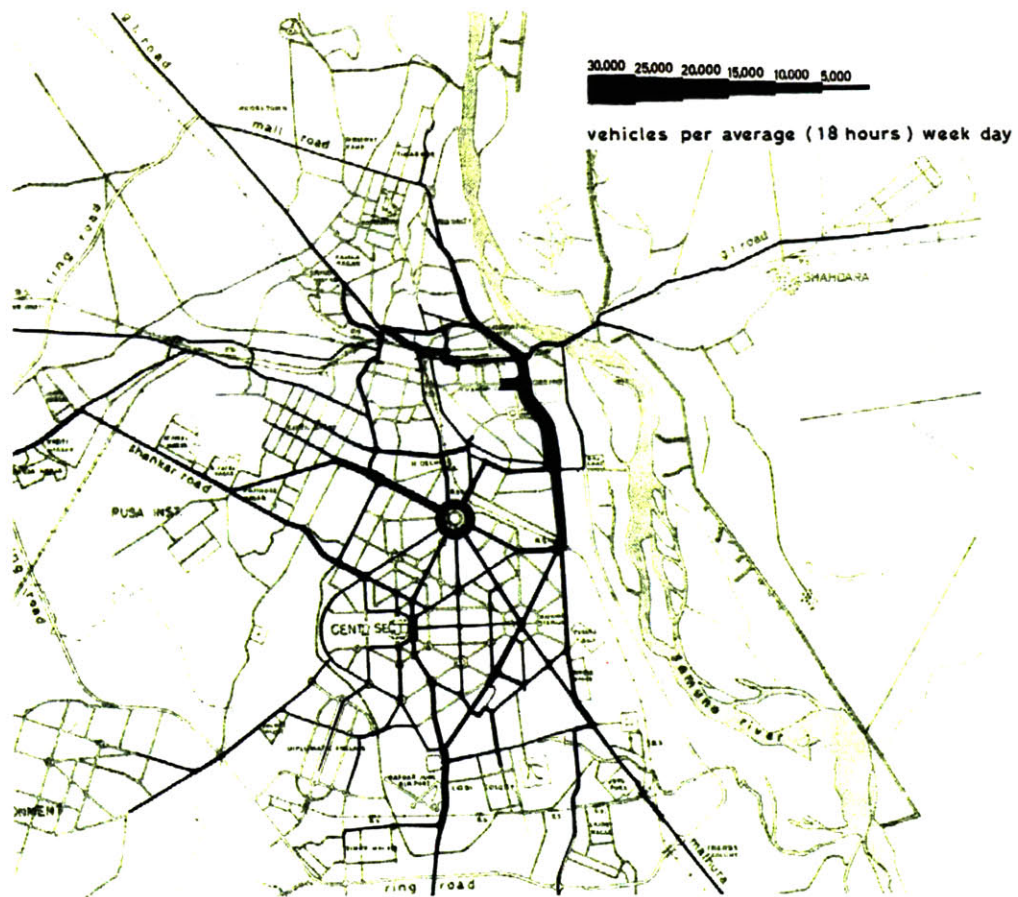
[Fig 3.6] **Traffic Density Patterns in and around Shahjahanabad**
Source: Transportation Planning Deptt.

Shajahanabad, which was initially designed for the population of 600,000 people spread over the area of 600 hectare, today faces a population pressure of half a million with its residential areas reduced to 180 hectares. Although the city's population has increased manifold, the city center has continued to serve a major distribution center for North India. While the living population of Shahjahanabad has declined, the commercial activities have increased at a much faster rate. Today, the walled city employs 350,000 people which threatens a serious problem of overcrowding and traffic congestion.

The traditional core is characterized by high density, intensive land use pattern, which demands multimodal transportation systems from pedestrian to the public transportation system The transportation and land use patterns are so highly effected by the poverty and high level of complexity that it is difficult to propose any plans without actually going in to the details of the movement patterns. Moreover the wide variety of the land use pattern varying from the low income to the high income development, which interweaves with old fabric, tends to create multimodal transportation systems even if some of them are actually not catering to the area that they serve. The commercial activities in the old city is not characterized by focal area, but at very diffused manner which supports the degree of street dimensions depending upon the land use of the specific zone. In some cases the small shop with few feet wide is would be opening in to the street carrying pedestrians only. As we move out from the inner most areas of the old Shahjahanabad to the secondary and primary streets of circulation the number of modes of transportation multiply until it reaches the peripheral roads which carries mix of different modes of transportation, from vehicular to pedestrian.

Its quiet intriguing to see how the convoluted streets of Shahjahanabad, which were intended to carry non-vehicular modes of transportation, later faced a continuous pressure of vehicular traffic due to economic mobility, is now compelled to seek the initial mode of non vehicular due to continuous population pressures. Today the walled city of Shahjahanabad reflects a complex intermix of different modes of transportation with maximum impact seen along its peripheral edges. Moreover, the presence of two railway stations in the heart of the city offers additional influx of

traffic congestion. This again chokes the main routes like Netaji Subhash Marg, which mark the main entry to the walled city. Although, despite the presence of railway lines, which cut away the walled city from its surrounding areas.

Since, Shahjahanabad reflects a consolidated urban form in contrast to its surrounding fabric; it needs to be dealt independently but in close relationship to its immediate and regional context which it aspires to influence.

3.6 Walled city: Changing spatial configurations

The grand walls of Shahjahanabad which once provided the sense of territoriality and privacy to its residents from the outer attacks, interestingly, continued to serve the same function in the later years of colonial and post colonial period of Shahjahanabad. The fortified walled city of Shahjahanabad depicts unique characteristics of how it organically evolved in to elaborative patterns of streets in a close connection to the defined entries in the walls[36].

Furthermore the colonial interventions of contrasting land use in the New Delhi plan not only created physical segregation between two city centers but also aggravated population influx in to Shahjahanabad, the city, which served adequate socio economic conditions to the population migrating to cities for better future. The existence of strong urban precedents like the territorial walls and dominant Red Fort and Jamamasjid not only provided a civic structure to the walled city but also continued to serve as centrifugal magnet for fast growing population.

The walls which served as the defensive elements of the city now turned in to obstructive elements of growth and expansion. The space around the walls, which carried flowing waters in its channels was quickly anticipated to get transformed in to a transportation ringstrasse which could act as a circular service zone for the congested areas of the city.

---

[36] Mohan, I. "The world of Walled Cities", Mittal Publications, New Delhi, 1992.

Due to non-compatible use around its surroundings which was primarily institutional and administrative, the areas beyond the walls were quickly parceled for residential developments. I Mohan in his book "The World of Walled Cities" states that there were no comprehensible planning strategy behind the urban development around the walls which could have been structured keeping the walls in to consideration. As a result the walls were broken at certain points to create breathing spaces within the internal Shahjahanabad. However the physical demarcation of traffic circulation around the walled city did not help much to the destruction of the walls, however further, impelled the reconstruction of the city edges with its non-compatible industrial uses. The new development not only destroyed the spatial configurations of the great walls but further increased inner pressures of the city due to its high capacity industrial uses. The growing conservational issues in the city planning domain in the year 1960's made efforts to retain the glorious gates of the walled city, however they became isolated monuments of despair located amidst high traffic routes. Today they bear no connection to its original edges, but provide unauthorized spaces for illegal activities. The broken walls and entrance gates still marks the entry points to the dense city but now they act as preserved isolated structures of no use. These important elements need to be preserved as they are the important fragments of memories.

3.7 Physical barriers to Urban Expansion

Shahjahanabad acts as a major transportation due to the city's two main railways stations which connects almost all the major cities of India. However, the railway lines cordon the entire historic city making the areas on the either side impermeable for efficient movements and connectivity. The rail lines along with its buffers on the either side cover almost a 2/3rd of entire Shahjahanabad. Moreover, since there has been no plan to integrate the railways infrastructure in the surrounding development, a major area along the lines offers no more than the temporary spaces for illegal slums. These areas offer backyard spaces and hence become major barriers to the urban expansions beyond the walls of Shahjahanabad. These linear underutilized

spaces should be reconsidered not as the barriers but as the possible scope of development which can resolve numerous inner city problems of traffic congestions. Slum rehabilitation remains one of the Shahjahanabad's intrinsic problems. Due to their least preference, the vacant land along the railway lines holds immense potentialities to restructure temporary slums in to permanent low cost housing solutions[37].

3.8 Non-compatible land uses patterns

Unlike contemporary development patterns, which are characterized by neat zoning and land use segregation, the historical centers like Shahjahanabad are based upon high intensive mixed land use with compact urban morphology, which produce city wide disbalances. Unlike their ancient times the when Shahjahanabad was categorized on the basis of hierarchical patterns of streets carrying specialized markets and bazaars, today, these historical centers offer confused image of diffused and non-compatible commercial activities. In the case of Shahjahanabad the internal core retained some of its formal characteristics of specialized bazaars featuring high level public activities, while the rest on the peripheral edges have seen continuous modification with the proliferation of non-compatible land use patterns.

The areas along edges are marked by wholesale storage warehouses, medium scale production industries, which strengthen their position due to the nearby railways stations offering tremendous opportunities as freight stations for good supplies. The centralization of consumer based commercial activities in Shajahanabad, which are screened off by the non consumer based production industries further increases the development pressures in the center creating severe environmental hazards for the residential communities within walled city. A study done by Delhi Development Authority (DDA) reads that there were twenty two whole sale markets in Delhi, out of which Shajahanabad acted as the center of production goods ranging from textile,

---

[37] Saha, S.K. " Conservation Based Development of Shahjahanabad: Historic Captial City of India", UNCRD research report series No.9, United Narions Center for Regional Development, Jan 1995.

auto parts and fruits. A recent study shows that 70% of the whole textile shops, 75% of the whole sale food grain shops are located in Shahjahanabad have led to the conversions of residential land use in to non-compatible commercial zones.

Occupation	Main occupation		Other occupations		All occupations	
	No.	%	No.	%	No.	%
Clerical workers	2	0.8	–	–	2	0.6
Sales workers (vendors, shop assistants)	10	4.1	1	1.2	11	3.4
Cooks, waiters and related workers	54	22.2	46	56.1	100	30.8
Other service workers (domestic servants, barbers, etc.)	2	0.8	2	2.4	4	1.2
Production workers including mechanics and repairmen	16	6.6	2	2.4	18	5.5
Construction workers including painters	22	9.1	7	8.5	29	8.9
Loaders, unloaders and porters	21	8.6	10	12.2	31	9.5
Handcart pushers or pullers	58	23.9	7	8.5	65	20.0
Cycle rickshaw drivers	48	19.8	6	7.3	54	16.6
Other drivers (motor vehicle)	1	0.4	1	1.2	2	0.6
Rag pickers	5	2.1	–	–	5	1.5
Beggars	3	1.2	–	–	3	0.9
Other workers	1	0.4	–	–	1	0.3
Total	243	100.0	82	100.0	325	100.0

Non-workers = 5.

The occupations taken into account include all types of work carried out in Delhi during the 12 months preceding the survey. Hence those occupations carried out outside Delhi during the reference period have been excluded.

Source: Own sample survey—1996.

[Table 3.7] **Table showing occupation pattern of Shahjahanabad on the basis of land use** Source: Seminar on Redevelopment of Shahjahanabad by Shovan Saha

There have been numerous efforts by Governmental authorities to decentralize the hazardous industries from its peripheral edges of the walled city, some to the proximate locations of the city and others in the nearby surrounding areas. Most of them did not succeed because the proposals failed to respond to behavioral tendencies of the users who become the ultimate victims. The proposals did not accommodate the activities (residential), which forms a critical issue of the inner city redevelopment.

Relocating land uses, which become the common feature to intervene in the inner areas of old centers which should not be limited to the structural and infrastructural upgradation but should also respond to the linkages that makes inevitable tasks for
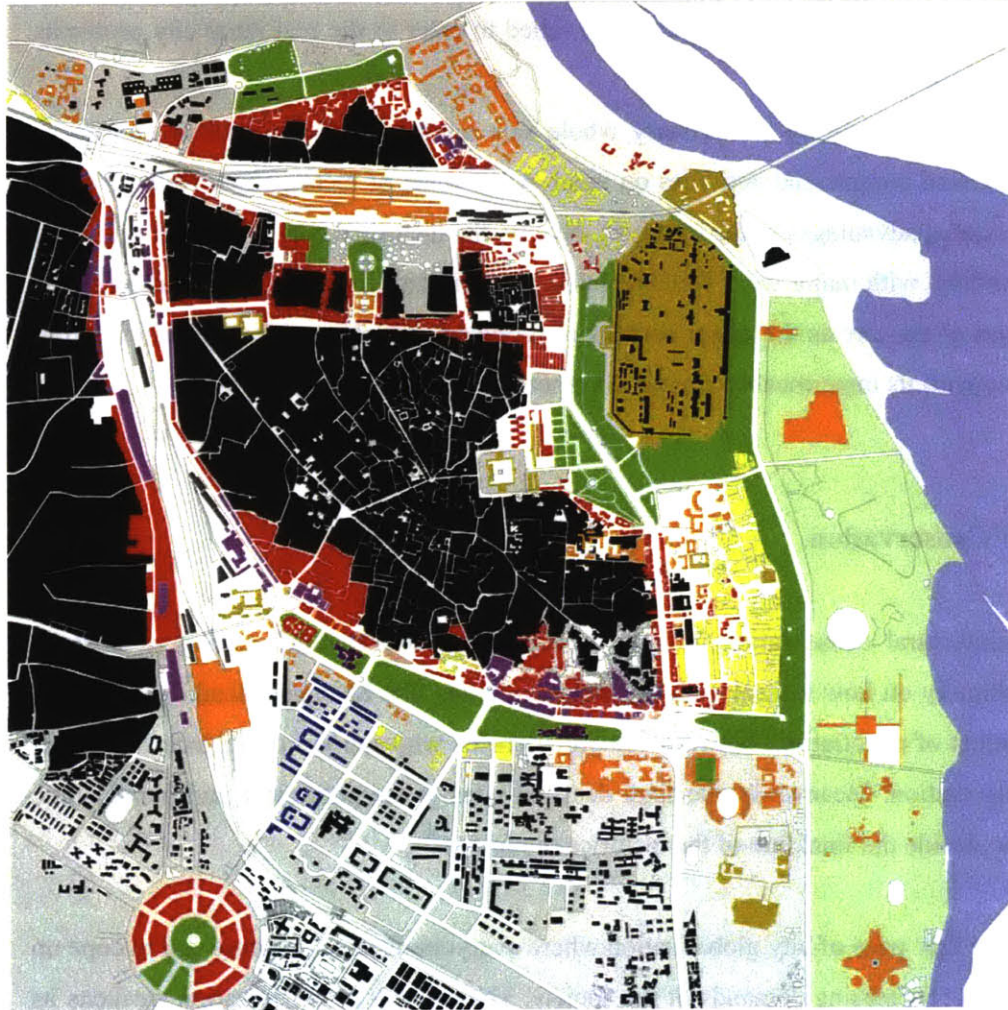
[Fig 3.6] **Land use pattern of Shahjahanabad showing commercial proliferation on its edges**
Source: Author

the planners to deal with the problem of commercial decentralization. The whole sale commercial activities located on the peripheral boundaries forms complex linkages to the different consumer based retail activities in inner core, which should not be dealt in isolation[38].

---

[38] ibid

Delhi Master Plan 2001 tried to respond to the city level issues of industrial decentralization through the planning of multi-nodal centers so that they act as self sustained urban centers connected through the radial fast traffic corridors. The plans formed static conceptual diagrams and failed to cater to the real inner city problems of the walled city[39].

Shahjahanabad being the primary whole sale market for Delhi tend to nurture its associated commercial activities on much wider scale of metropolitan Delhi. Due its locational advantages in the center of the city, the historical core forms a strong local economy, with major work force residing in its vicinity. Its imperative to identity the edges of the city as the major sources of problems, which needs to be dealt in order to convert its impermeable image in to more porous public activity zone.

3.9 Conservation

Architectural conservation in India is a contested issue which creates a sense of ambiguity on how to deal with the historical cities like Shahjahanabad. It is rather a product of negotiations between the protagonists, who support or neglect the idea of conservation. Meanwhile, the final decision goes to the politicians and bureaucratic who decide the final fate of the historical buildings[40].

In the fast pace of city globalization where everyone feels to progress and to cope up with the increasing demands of the society. The concept of conservation weakens its stand, where people argue that India is still backward in terms of the general idea of adhering to its past. While many argue that the presence of heritage value creates a sense of cultural continuity for which India is known about. The thoughts seem very optimistic, but in real sense looses its importance when one deals with the heritage areas which are poverty stricken. There are around Forty four architectural

---

[39] Jain, A. "Delhi Debates: Should Lutyen's Delhi be opened to Development?" Seminars on Architecture, School of Planning and Architecture, New Delhi, 1999.

[40] Menon,A.G.K. "The Case for Indian Charter" Online posting 2003, http://www.india
seminar.com/2003/530/530%20a.g.%20krishna%20menon.htm

66

monuments plotted by INTACH in Shahjahanabad as part of their heritage zone. These monuments, accept few of them, become the intrinsic part of city's urban fabric, and offer nothing to the poor denizens. Poverty often creates land pressures , which lead to the illegal procurement and alterations to the historic building under heritage zone.

"Modern town planning as it is practiced today is detrimental to conserving the built heritage; perhaps it has caused the destruction of more architectural and urban heritage than wars" -AGK Menon.

Due to the fear that building might be illegally dealt the conservational ideology set by Archeological Survey of India (ASI) which offers "special control" of not building anything within the 100 meters zone of the historical building. This ideology often faces a severe lacuna while dealing with the compact urban morphology of Shahjahanabad.

The idea to conserve historical traces seems plausible but, the thought loses its relevance when one feels reluctant to classify his own building for conservation because of the fear of losing its economic value.

As a result the overall picture of a historic building in its close association with new fabric becomes very much faded behind the multicolored, flashy signage ruining the historical essence, of the monument presenting overall chaotic appearance with illegibility in its facades.

The great walls of Shahjahanabad might however look very prominent in the plan but at many points loses its appearance behind undaunted private development which daily negotiates with the city guidelines. At many points where the architectural ruins of the walled city are significant enough to stand out and become the victims of ASI rule which leave them isolated and museumified. The city of Shahjahanabad is faced with several such instances where either its monuments are undermined by chaotic urbanization or they are neglected to become useless artifacts. INTACH has played a pivotal role in the field of preservation by making the idea of preservation as a "cycling" concept of time, where monuments are not considered as static icons to be

admired but dealing them as precincts of the pragmatic development which maintains its connectivity and functionality with the societal needs that surrounds them[41]. Although there have been various conservational parameters which lay general guidelines for the preservation of monuments, Shahjahanabad requires special attention due to its complexity and ambiguity which has been displayed by the variety of its architectural ruins. The conservational measures in the walled city have further increased the gap between its external walls and the inner core where the external perimeters seeks for no further development due to gigantic walls and gates which obey the stricture rules of ASI, while the inner monuments becomes the intrinsic parts of dense fabric making the situation more complex. Unless a comprehensive development plan is formulated to deal with the variety of conservational issues of Shahjahanabad, the solutions will continue to remain undetermined.

---

[41] ibid

Chapter 4: Mapping City Gates as important nodes: Analyzing their problems and design potentials

4.1 Development Matrix

Urban Design Issues

Problem of Urban Backyards		Kashmiri Gate
Traffic congestion		Kabul Gate
Conservation and Isolation		Lahori Gate
Non-Compatible Land Use Patterns		Ajmeri Gate
Physical Barriers in the Urban Expansion		Turkman Gate
		Delhi Gate
Non regularity in Density Patterns		Red Fort and Yamuna
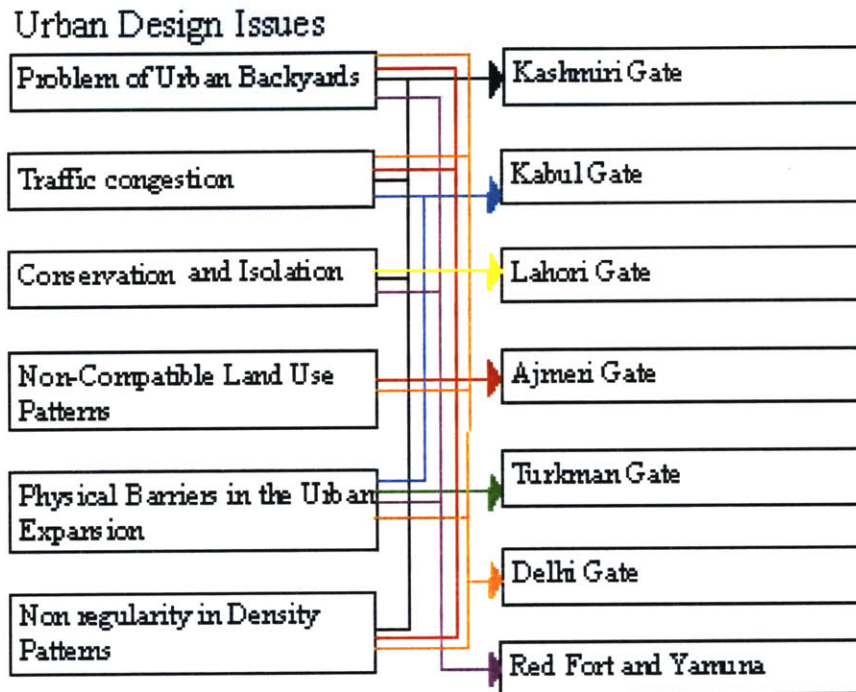
[Fig 4.1] **Chart Depicting Sites and their current Problems**
Source: Author

The various problems of Shahjahanabad as discussed in the previous chapters, many of which become the common issues of cities in the third world countries, are followed by the continuous conflict between historic conservation and urban development. Shahjahanabad offers a special case, where the walled city is characterized by strong urban punctuations of monumental gates. These gates, which once structured the movement patterns in and around Shahjahanabad, today, lie obsolete and unattended offering dead zones. However, these gates continue to offer numerous opportunities as far as the overall conservational development of the walled city is concerned. This chapter identifies the monumental gates of the walled city as important nodes of city restructuring moves.

4.2 Turkman gate

[Fig 4.2] **Turkman Gate**
Source: Author
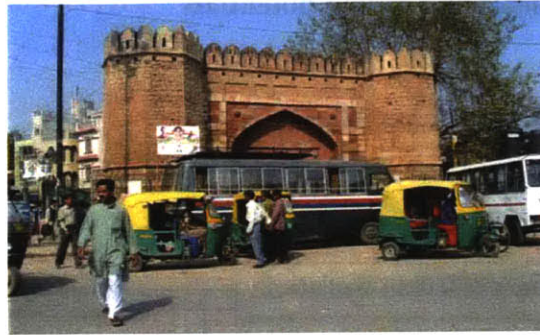
[Fig 4.3] **View of Turkman Gate**
Source: http://www.gesteland.org/archives/

The gate lies due south of Shahjahanabad, near Ramlila ground, built in 1650, named after the Muslim saint, Hazrat Shah Turkman Bayabani whose tomb predated inception of Shahjahanabad. The gate is characterized by its low height lying amidst the high dense edge of southern Shahjahanabad. The area saw heavy destruction of urban quarters to support a new housing development with efficient services and clean environment. The new rehabilitation scheme reflected four storey residential structures that were intent to house maximum population removed from the site. However, they failed to fit in the surrounding context with low height ground settlements. The site once known for its important pedestrian bazaars (local market) lies vacant due to traffic intrusions. The area requires pedestrian environment so that its historical precinct is revitalized and also because the area is marked by series of important landmarks like mosques and *madras*.

The site lacks physical connectivity to the institutional zone in the Lutyen's imperial zones towards south, and faces severe gap in the land use patterns marked by Ramilila ground (green buffer) between old Delhi and New Delhi area. Turkman gate offers an important transition zones between the two cities (Old Delhi and New Delhi) which can be redeveloped to physically and functionally integrate the historic precinct with rest of New Delhi[42].

---

[42] http://www.indfy.com

70

4.3 Kashmiri Gate and Civil Lines

[Fig 4.4] **Kashmiri Gate**
Source: Author

[Fig 4.5] **View of Kashmiri Gate**
Source:http://images.google.com

Kashimiri Gate is located due north of Shahjahanabad, near Inter State Bus terminal (ISBT). The gate is known for its past history when it was used as the main gate for royal procession of emperors. The gate saw continuous modifications until it finally reshaped in to double openings, signifying entry and exit.

Today the prominence of the gate has been undermined by the proliferation of commercial activities in the historical precinct.

[Fig 4.6] **Civil Lines, Delhi**
Source: Sharma, Y. "A New Memorial
Landscape for India"
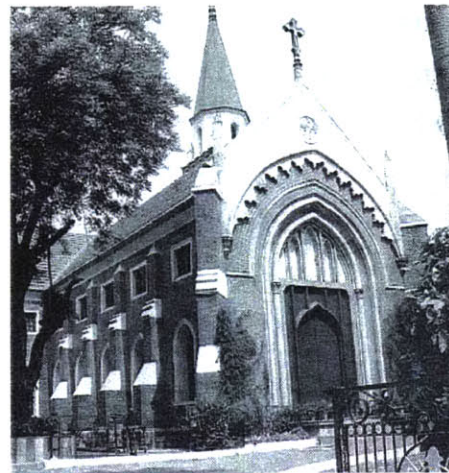
[Fig 4.7] **Methodist ChurchCivil Lines**
Source: Peck, L. "Delhi- A Thousand
Years of Building".

Civil lines refer to the institutional zones towards the north of the Kashmiri gate, which is characterized by relative openness with green landscapes, generally quiet as compared to the hustle bustle as seen near Kashmiri gate.

The area was envisaged as the administrative office for Britishers, which were later reused for the governmental activities. Some of the area has been preserved, while some areas have seen continuous modification in terms of land uses, and density. This zone provides some of the important city services like hospitals, schools, colleges and churches.

The area is important due to its close relationship with the city ridge that offer numerous opportunities in creating ecological bridges between the congested Shahjahanabad and Civil Lines. Moreover, apart from its city level linkages to ridge, the area is significant for its famous gardens and the monuments which lie in close conjunction to the Najafgarh Jheel offering tremendous recreational zones for the city. Some of the important gardens include Roshanara Gardens built by Shahjahan's daughter; Tees Hajzari towards the north walls of the city; and Qudsia Garden towards north of Kashmiri Gate.

The upcoming transit station at Kashmiri gate makes the junction of the primary importance, which needs to be designed in a transit oriented way in order to create pedestrian friendly linkages to the old city. Apart from the prime location of Kashimiri gate near the walled city, the placement of Vidhan Sabha of Delhi State at northern end of Civil Lines, makes the linking road Shamnath Marg an important axis which needs to be recognized in order to revive the lost monuments along the walls[43].

---

[43] Tracy. J.D. "City Walls", Cambridge University Press, Univ. of Cambridge, 2000.

4.4 Delhi Gate

[Fig 4.8] **Turkman Gate**
Source: Author
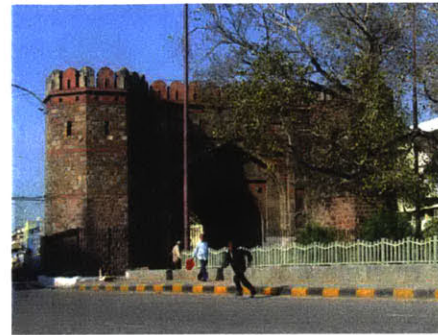
[Fig 4.9] **View of Delhi Gate**
Source:http://www.gesteland.org/

Delhi gate is yet another important gate and junction of the walled city, located at the southern end of Shahjahanabad near Daryaganj police station.

The gate is so named as "Delhi Gate" since it acts as the main linkage between Shahjahanabad and rest of the other great "Seven Cities of Delhi". Due to its monumental characteristics, this gateway is capable of reflecting similar grandeur as it used to, during its ancient times. The area confronts heavy vehicular traffic and contrasting patterns of urban development between compact Daryaganj and Ferozeshah Kotla along with Imperial zone towards its east. Delhi gate is one of the important nodes of Shahjahanabad as far as Yamuna redevelopment is concerned.

4.5 Ajmeri Gate:

[Fig 4.10] **Ajmeri Gate**
Source: Author

[Fig 4.11] **View of Ajmeri Gate**
Source: http://www.livingtravel.com

Ajmeri gate is one of the important gates facing the holy city of Ajmer, located south west of the walled city. It creates an important connection to the New Delhi railways station and Cannought Place. Almost square in plan, Ajmeri gate is known for its historical importance. The junction is surrounded by numerous important landmarks like Sirkiwalan mosque Masjid Mubaraq Begum and Ghiazuddin Madrasa. The gate faces traffic congestion, limited accessibility due to railways lines acting barrier and at the same time facing non-compatible land use patterns due to whole sale commercial activities. However, the junction holds immense advantages to be developed as an important square connecting two markets (Shahjahanabad and Connought place market)[44].

---

[44] Spear, T.J. "Delhi- A Historical Sketch", Oxford Univ. Press, Bombay, 1945

4.6 Lahori gate:

[Fig 4.12] **Lahori Gate**
Source: Author

[Fig 4.13] **View of Lahori Gate**
Source: Author

One of the important gates, presently destroyed, lay towards the west of Shahjahanabad contains some of the eminent buildings of architectural heritage. The surrounding Neel Katra (neighborhood) is very well known for its important Havelis, specialized cloth market, and famous Fatehpuri mosque, which creates immense public activity across the gate. However, due to the close proximity of Old Delhi railways station the area faces tremendous traffic and environmental problems. Moreover, the railways lines connecting Old Delhi Railway station and New Delhi railway station hinters the movement across Pahargunj towards east and Civil lines in the north, which further deteriorates the traffic movement across the city walls[45].

4.7 Red fort and Yamuna river front

Red fort is the biggest monument and land mark which defines the spatial form of Shahjahanabad city with its high walls and grandeur appearances. However, the big monument faces isolation due to the strict rules of ASI[46], therefore act as big barrier between Yamuna river front and inner areas of Shahjahanabad.

---

[45] ibid
[46] ASI rule of " Building activity within the 100 mtr zone" of Monuement

Yamuna river front towards east of Shahjahanabad was envisioned as the landscapes of commemoration for those great leaders who fought for the Indian Struggle for independence. The year 1950s saw the development of Raj Ghat to commemorate the death of the greatest leader Mahatma Gandhi. The two sites adjacent to it, later developed in to memorials. Although, the compete stretch of 120 acres of landscapes greens is frequently visited by number of visitors, however due to the national highway, it lacks the connectivity to the surrounding city fabric.
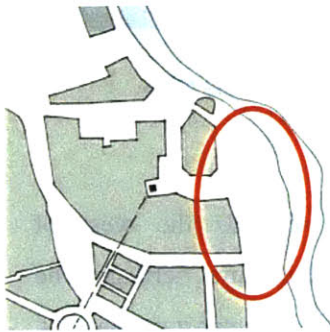
[Fig 4.14] **Lahori Gate**
Source: Author

[Fig 4.15] **Red Fort and Yamuna River Front**
Source: SPA

The interiors of the Raj Ghat are intriguingly designed to symbolize indigenous artifacts reflecting national identities. The use of various building typologies like Budhist Viharas and square forms in the planning of the central sanctum, creates a peaceful aura amidst carefully designed landscapes. It's interesting to note how the formal characteristics of Charbagh, which once became the central theme to Mughal landscapes in Shahjahanabad's precincts, are utilized in to the planning of Samadhi's environment.

The various other Samadhi, including Shanti Van for Pt.Jawaharlal Nehru; Shakti Sthal for Late Lal Bahadur Shashtri also evokes different themes, and different styles of landscapes renascent of the great character that these leaders once reflected.

The stretch of park land abutting the walls of Shahjahanabad leaves a free way zone of 100 feet as per the rule of Archeological survey of India. It acts as a green buffer between the high traffic on the main artery and the great walls of Shahjahanabad[47].

River front development had been the critical aspects of the high standing fort, which symbolized the perception of rivers capes from the strategic points mapped on the fort's walls. Over the period of time, due to the growing pressure of congestion within Shahjahanabad, growing vehicular congestion and the growing concern over historic conservation, the memorial landscapes along the river front have been viewed in isolation. Moreover, recently there has been a growing criticism over the political usage of these parks. The parks, which once became the memorial symbols of historic landscapes, now, have been caught in the personal interests of political domain, where these landscapes are no more read as the process and product of historical artifact but are continuously acting as the normal burial grounds for politicians.

The memorial landscapes, however, became the sites of national importance through media of political iconography and symbolism needs to be evaluated in today's context so that they are remembered as memorials and not as the normal burial grounds for politicians. These memorials are important because they are the agents promoting ideologies and value judgments connected to the subjects being memorialized. Therefore, these river edge sites should be seen as effective medium of public awareness towards important heritage sites and not as the extensional lands for further burials. Public accessibility becomes the primary issue to be able to make this site of prime importance.

---

[47] Sharma, Y. "A New Memorial Landscape for India", Published Thesis, Illinois Institute of Technology, Urbana Champaign, USA, 1998.

5. Chapter V

5.1 Vision Statement for the Historic City of Shahjahanabad:

The city of Delhi today represents two different living cities; one an introverted Shahjahanabad acting as the central core and the second Lutyen's Delhi extroverted in its design and ideas. The extreme dualism established between the two cities has been on of the main factors behind the continuous degeneration of the traditional Shahjahanabad. The main theme behind the design proposal in this thesis is to adopt extroverted planning and design ideas which can integrate the city core physically, visually and functionally to the rest of the city fabric.

The vision for reconstructing Shahjahanabad is not just to limit with its inner congestion problems, but to look beyond its local context and propose macro level interventions to make the "slum like" Old Delhi in to a comprehensive historical core of the larger city.

Physical integration:

Reflects physical linkages on a city and macro scale, which allows easy permeability of movements in to the core area; possible interaction of people and functions across its peripheries; building ecological linkages between the traditional core and regional green and open spaces, and reconfiguring the densities to make the over all Shahjahanabad an intrinsic part of larger urban city landscapes.

Functional integration:

Developing functional dependencies between the land uses, especially across its peripheries allowing Shahjahanabad to open out to convert the introverted nature of the old city in to a preserved, but extroverted to new ideas development patterns beyond its central core. The central idea of the functional integration is to generate new civic thread which would decentralize the inner city activities and redistribute them on to its edges, which are presently acting as the impermeable zones of city services.

Visual Integration:

To develop macro as well as micro level visual linkages to highlight the important monuments of Shahjahanabad, which are hidden behind the disruptive development that has happened in the recent past. The proposed master plan envisions seeing the historic monuments of Shahjahanabad as the anchoring points of a larger comprehensive plan of redevelopment. The Master plan visualizes the strategic development of opens spaces, and bigger green buffer areas around the core in to framework that would enhance the historical and symbolic significance in contrast to the surrounding fabric bearing chaotic semblance.

5.2 Macro Level Interventions to integrate Shahjahanabad as a traditional core

5.2.1 Macro level strategies to integrate open fragmented spaces in to a comprehensible design solutions:
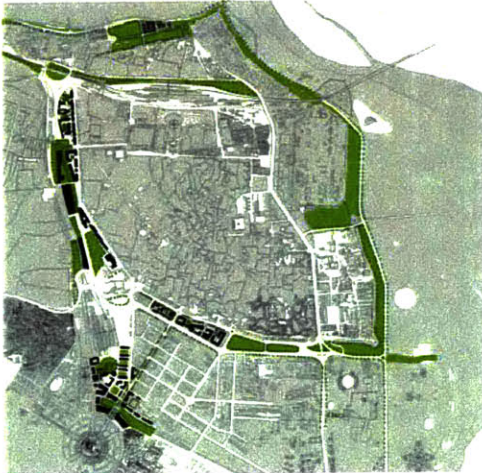
[Fig 5.23] **Proposed Green networking around the Walled City**
Source: Author
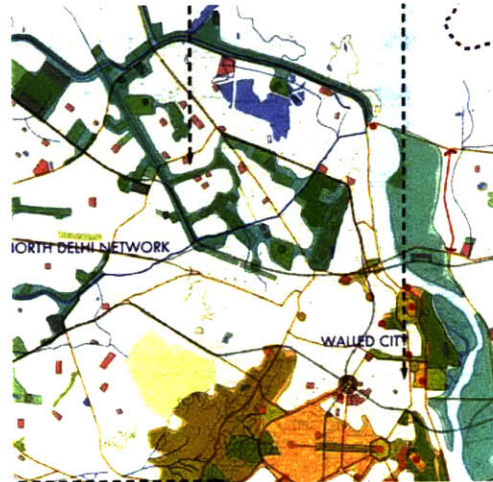
[Fig 5.23] **Macro Level Green network around the Walled City**
Source: DUAC

Thesis analyze the city open spaces that are associated with the natural water streams and those open spaces, which were purposefully left in order to frame the historical precincts in the city. The city wide open green spaces although act as the ecological benefactors for the city, however, fail to serve their purpose due to their inefficient connectivity to the development that surrounds them. The proposed master envisions a comprehensive plan for integrating all the open spaces and green zones of the city in to connecting greens, which can be utilized in order to serve recreational and ecological benefits for the congested city of Shahjahanabad.

The macro level green strategies are effectively tied up to the micro level landscape strategies to connect the urban ring of landscape, which become one of the primary themes of the proposal.

5.2.2 Open water channels: sources for creating ecological linkages

The city of Shahjahanabad identifies itself to a large area under the catchment area of existing drainage network. This area was historically realized to be the city of water landscapes becoming an aesthetic backbone of Mughal gardens. The open water channels within the city are closed but act as the feeder channels outside the city core providing future scope to rebuilt ecological connections with Shahjahanabad[48].
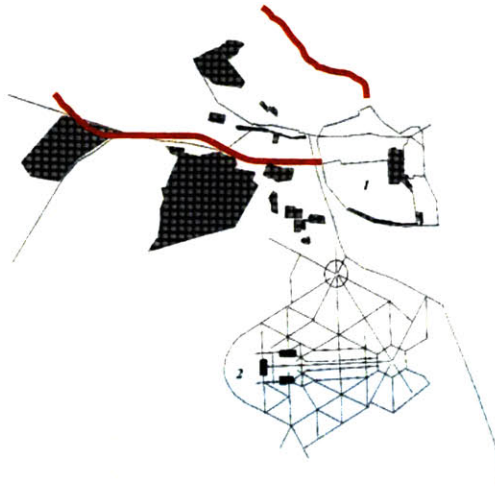
[Fig 5.1] **Shahjahanabad and Barapullah Water Drain Network**
Source: Author
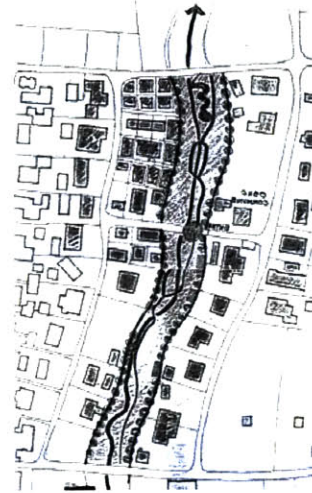
[Fig 5.] **Drains as Traffic corridors**
Source : School of Planning and Architecture (SPA)

Apart from heightening the visibility of the city's natural features to make its form and structure more legible, the imageability could be further enhanced by using the channels to bring the waterscape into the city to give the open spaces a character and identity. Thus these open spaces forming the public realm, if sensibly structured, can be used as carriers of elements of nature giving a much-needed contrast with the urbanized edges of congested Shahjahanabad.

---

[48] Saxena, L., et al. "Drainage Network of Delhi- Evolution, Problems and Opportunities", School of Planning and Architecture, New Delhi, 2002.

The master plan makes an attempt to study the open water drains that are associated with the walled city and tries to develop a comprehensive strategy to utilize them as eco-friendly transportation corridors.

5.2.3 Utilizing Urban water channels in to a non-vehicular zones movement patterns

Traffic in Shahjahanabad has now become a deadly grip of killer fumes and noise. Roads have become the dangerous for the people since there is not enough space left to accommodate them. At a point where government has been left as a crazy leftist in failing to reduce the pollution level of the city cycle mode of transportation brings forth the neat and clean pollution free environment.
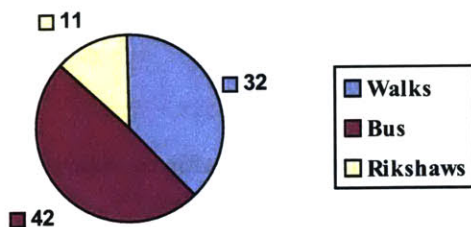
[Table 5.] **Traffic Distribution**
Source: Transportation Authority, Delhi
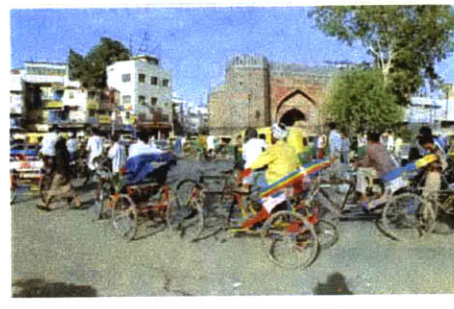
[Fig 5.3] **Non vehicular traffic near Ajmeri gate**
Source: Internet

There is an immense potential to create car-free zones in and around historic Shahjahanabaad. Members of the Central Road Research Institute in Delhi surveyed the traffic pattern in Delhi in 1990. They were amazed to note that bicycle usage in many parts of Delhi was still very high. It was as high as 48 percent of the total traffic flow in GT Shahadra, due north of Shahjahanabad[49].

---

[49] ibid

The proportion of bicycle traffic is more than 30 per cent of total traffic during peak hours on many arterial roads. Even today it has been estimated that 25 per cent of shopping trips, 15 per cent of the trips to work, and 50 per cent of the trips to schools which hare there can be undertaken by bicycles.[50].

The drainage channels offer a tremendous potential which can be developed as lifelines for the city. Though in theory, the proposals brought out seem quite appropriate and practical, but before they can be implemented both the opportunities and the constraints involved have to be examined and only after weighing the pros and cons of: each proposal, the overall strategy may be formulated.

Great potentials

- There is a great potential for the bicycle use in Delhi where even now the 40 percent of the journey distance is less than 2.5 km and more than more than 57 percent is less than 5 km in length.
- Bicycle trips can take the same or less time than any motorized mode for distance up to 5 km.

Even now the bicycle traffic is more than 30 percent of the total traffic and can be as high as 48 percent during the peak hours on main arterial road.

Drain as Transportation corridors

Apart from feeble gestures to get a plan for bicycle tracks or pedestrianize a few shopping malls in Delhi, nothing much has really happened. Only after the Supreme Court began to mount pressure on the Delhi government to take action to control vehicular pollution, the Union Ministry of Environment and Forests issued a White

---

[50] Land and Building Deptt. , , Govt. of National *Report of Task Force Regarding Covering of Nallahs/Drains in Delhi* Capital Territory, Delhi, pg. 1, 1993

paper on the state of Delhi's pollution in December 1997. The White paper proposed for the first time a "provision for bicycle tracks ".

The 1962 Master Plan had proposed to utilize these drainage basins and channels as greenways with pedestrian and bicycle priority and the 2001 Master Plan went on to propose bicycle tracks along the channels connecting important locations but due to the fact that these channels were not developed in any other way and remained as isolated and ill maintained stretches, the cycle tracks never worked. Though the paths were occasionally used as short cuts by the local residents of the area, due to the absence of any kind of public activities around them, the general public mostly avoided them, especially during late hours.

Perhaps the proposals did not prove successful because the solutions which were carried out at a macro level did not get implement at the micro scale. This issue rather needs to be based upon the detailed study of the drainage pattern over 200 yrs. In other words the issue requires the micro and macro level interventions.

The provision of the pedestrian zone and cycle track are valid proposals but before they can be implemented there is first a need to develop the channels as public open space system with a proposed development lining their edges, which would transform them into active zones for at least the major part of the day so that they can be safely used by the passers-by. The proposals are to be laid on the basis of the city planning as well as the local socio cultural needs of the people of Shahjahanabad, who are directly coming in contact with the drains.
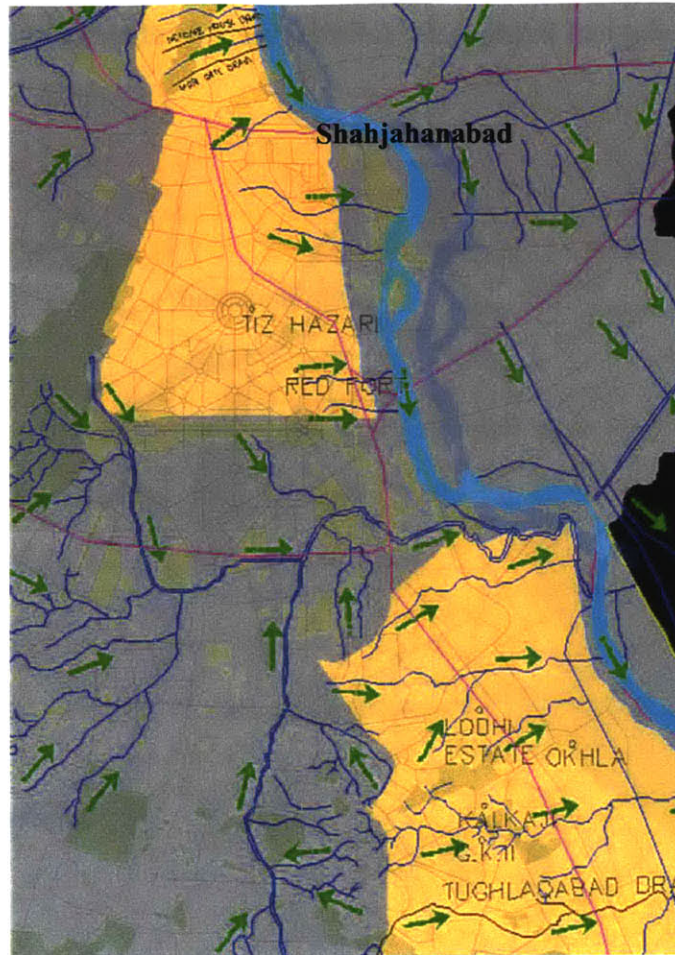
[Fig 5.3] **Drainage Network in and around Shahjahanabad**
Source: Author

The master plan gives a close link at the Nazafgarh Drain that flows through Punjabi Bagh and reaches University area in the north of Shahjahanabad. The zone contains immense potentials to be developed in to recreational zones working in the close relationship to the various Metro Stations located along its spine. The proposal for green corridors would not only make the pedestrian movement smooth and exciting but also expose the important parks and ecological zones outside Shahjahanabad which once served as Baghs (District level mangrove forest) during great Mughal era.

5.2.4 Creating Ecological Bridges, Redefining the role of ridge as city eco-vertebrate

[Fig. 5.3] Delhi Ridge and Green areas in the City
Source: Author
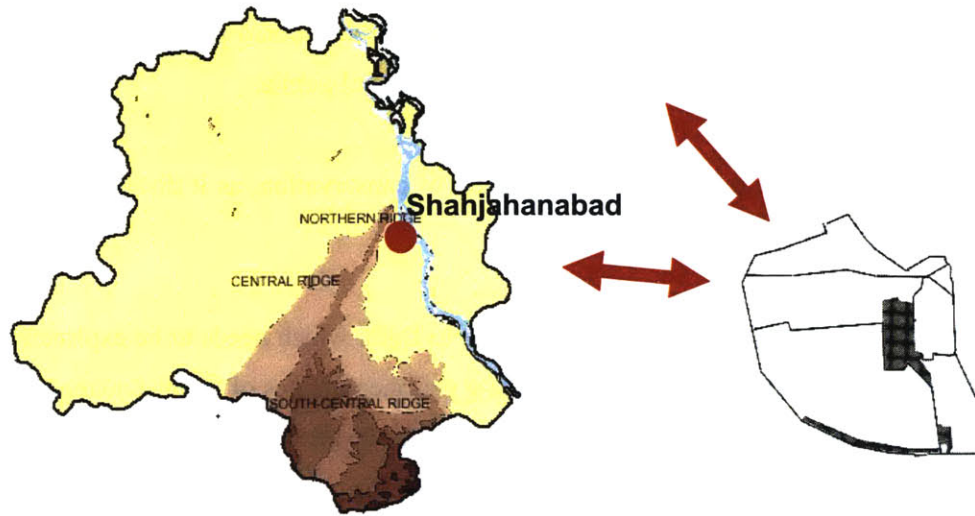
[Fig 5.4] Delhi ridge and its connectivity t oShahjahanabad
Source: Author

Delhi ridge has played a significant role in the climatologically, environmental, and ecological benefits of the city. Spread in the area of 53 kilometers, the ridge has been the major modulator of to shape the current city structure. Inceptionally, the present Shahjahanabad also based its location in a close relationship to the ridge and the river Yamuna. Today it forms as an intrinsic part of the Delhi heritage forming a habitat for biodiversity.

Although, over the period of time, the geographical and geological attributes have lost its relevance, the ridge continues to offer tremendous opportunities in creating ecological bridges between congested Shahjahanabad and rest of Delhi. The northern ridge in the close proximity to the walled city, covering an area of 87 hectares, provides conducive environments for Civil Lines and institutional north campus lying north of Shahjahanabad. The important monuments like Chauburja mosque by Firozeshah Tuglak, mutiny memorial by Britishers, and Ashoka pillar makes the ridge worthwhile city space to be recognized as an intrinsic part of the historic

Delhi[51]. The ridge offers rich bio diversity to its environments opening new channels for connecting those areas of development which suffers congestion and pollution. The city ridge needs to be identified as the source of recreational parks rather than preserving them as forest resources in accessible to normal public.

"The part of the problem lies in the very nature of conservation, as it disallows the use of heritage site"

The city ridge serves as an ecological vertebrate to Delhi which needs to be explored to generate city level green corridors connecting peripheral nodes of Shahjahanabad. Not only they can become the ecological corridors for healthy environments but can also serve as transit infrastructure well integrated with the public streets and squares.

5.2.5 Shahjahanabad reflecting Yamuna River front

Since immemorial times Yamuna river has been the main attraction for its social and cultural landscape. The river not only carried a symbolic significance but became the nerve center and contextual references for various historical cities which sprung up along its edges. Nevertheless, even the walled city of Shahjahanabad was sited in a close relationship to the river front. Ironically, the colonial interventions and later post independent development of Delhi did not focus on its river front. Rather, they treated it as urban backyards to receive city pollution. Over this period of time the Yamuna river front has seen a continuous loss of its fame and name due to overgrowing city pollution and conservational neglect of the monuments that lie along the river edge. However, the river still maintains its significance due to its sacredness and cultural values that is reflected by its numerous Ghats (funeral steps) located along the water edge.

The proposed master plan for Shahjahanabad treats Yamuna river front an ecological edge which can offer a vital city space for the congested Shahjahanabad.

---

[51] Jain, R., et al. "Drainage Network of Delhi- Evolution, Problems and Opportunities", School of Planning and Architecture, New Delhi, 2002.

88

Legend

- ■ Eco Friendly Religious site
- ■ Constructed Wetland
- ■ High Capacity Recharge
- □ Controlled waster irrigation
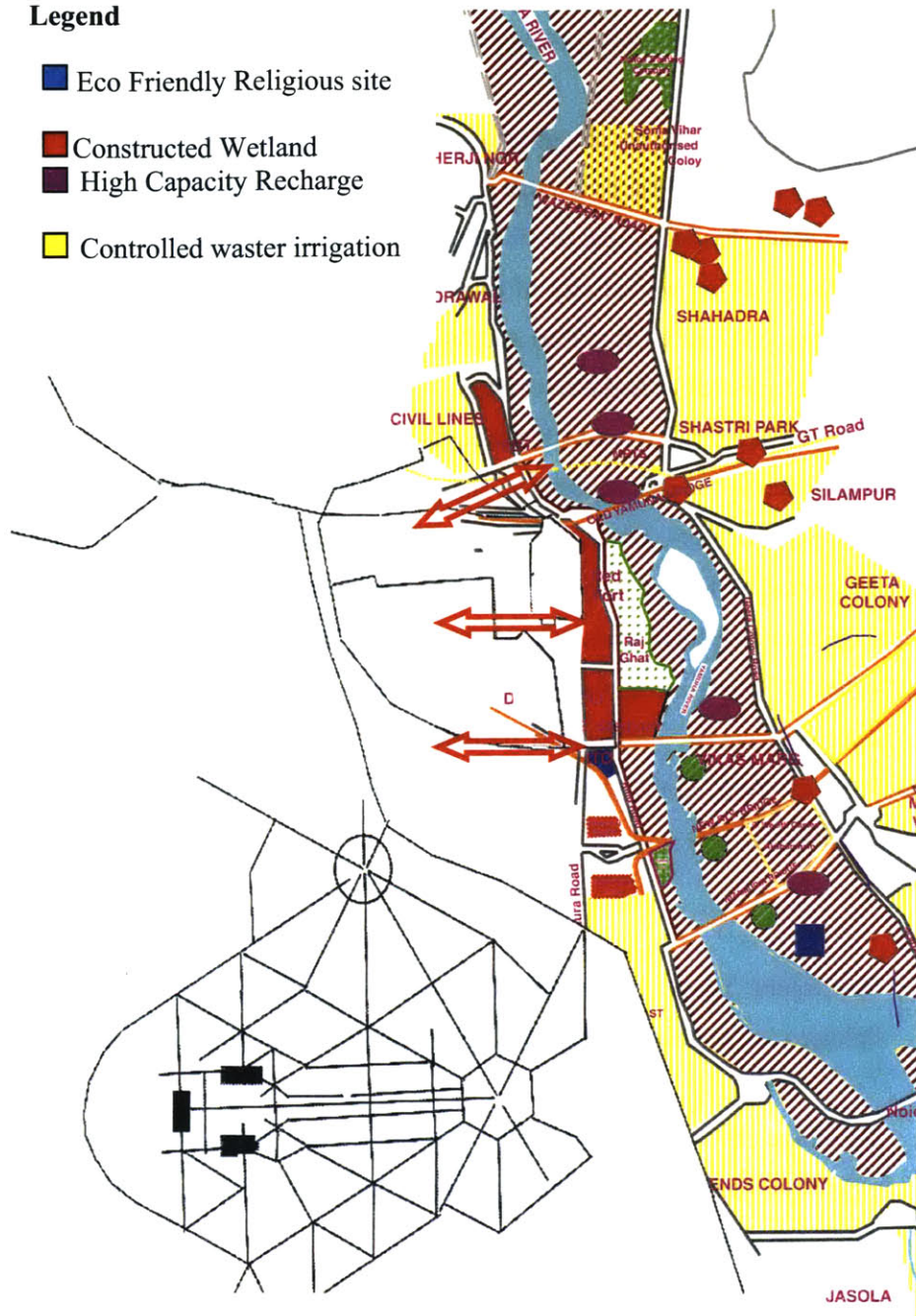
[Fig 5.5] **Shahjahanabad and Yamuna front Development**
Source: Adapted from DUAC, "Imagining Delhi"

89

" The river front in Delhi has been remained a relatively neglected part of its urban areas. Its recreational and visual potentialities have yet to be realized[52]"

The river front needs to be recognized as a leisure space for the city. Effective connections from city to the river edge can enhance the permissibility to vast space, which lies vacant due to its inaccessibility because of high speed traffic on the ring road. This cuts off the walled city of Shahjahanabad from the Yamuna river front. Moreover, the monumental Red Fort and its walls further deter the public movement from the city center towards the river edge. The proposed plan for the Yamuna river front envisions barrier free zone between the walled city and the river, which is visualized by taking the ring road below the ground at a certain portion of ring road. The visual and physical connectivity of the Shahjahanabad is generated along the Ram Lila ground by the pedestrian trail, which wraps around the walled city tying up the ecological and cultural landscapes along the river front. The master plan identifies the architectural ruins along the river front as the main tourist destinations, which become the intrinsic parts of a larger framework to regenerate the compete stretch of Yamuna river front. On a macro scale the master plan proposes the following recommendations:

1. Developing Yamuna river front in to a new city space by providing vehicular linkages and pedestrian connectivity to interior spaces of Shahjahanabad.

2. To utilize the water drains as the main resources of pedestrian connectivity, which can be regenerated in to ecological fingers terminating the large forested landscape along the river front.

3. Developing ecological parks along the river front, which retains the quit atmosphere generated by the various ceremonial landscapes and Sacred Ghats.

---

[52] Land and Building Deptt. , , Govt. of National *Report of Task Force Regarding Covering of Nallahs/Drains in Delhi* Capital Territory, Delhi, pg. 1, 1993

5.2.5.1 Developing economical connections - Delhi Common wealth games as a tool to regenerate river edge

The commonwealth games 2010 in Delhi can become the key generator in the over development of Yamuna river front. This would not only demand effective physical connections to the old city but also leverage a platform for cultural tourism in the close connections to the heritage city.

The series of sports activities in connections to the stadiums and sports village (housing complexes) along the river front, would allow for various expositions like sport events and image building exercises, to formulate comprehensible plans to restructure immediate links to Shahjahanabad.

These events need to be looked as opportunities to the principles of redevelopment of especially those lands, which surrounds the walled city. The ASI regulations for the building activities within the specific areas around walled city need to be evaluated again keeping the heritage value of those buildings which are worth preservation[53].

---

[53] Cherian, D. "Pairing Mega Events and Hydrology Systems for Urban Sustainability, Pairing Framework for Delhi beyond the common wealth games 2010", MIT Cambridge, 2004.

5.3 General Master Plan for the Walled city of Shahjahanabad

5.3.1 Defining an Urban ring

Shahjahanabad since its historical times has suffered with immense pressures of inner city activities, while the edges have remained inactivated due to contrasting land use patterns outside its walls. The general master plan identifies the edges of Shahjahanabad as an important zone of interventions, which needs to be redeveloped to re-knit the dense urban fabric of Shahjahanabad with the outside low dense fabric of New Delhi. The basic aim is to map the obsolete spaces around the walled city and redevelop them to solve the inner traffic problems; integrate the fragmented land use patterns across the boundaries; and to define a new public activity zone opening possibilities for future development.
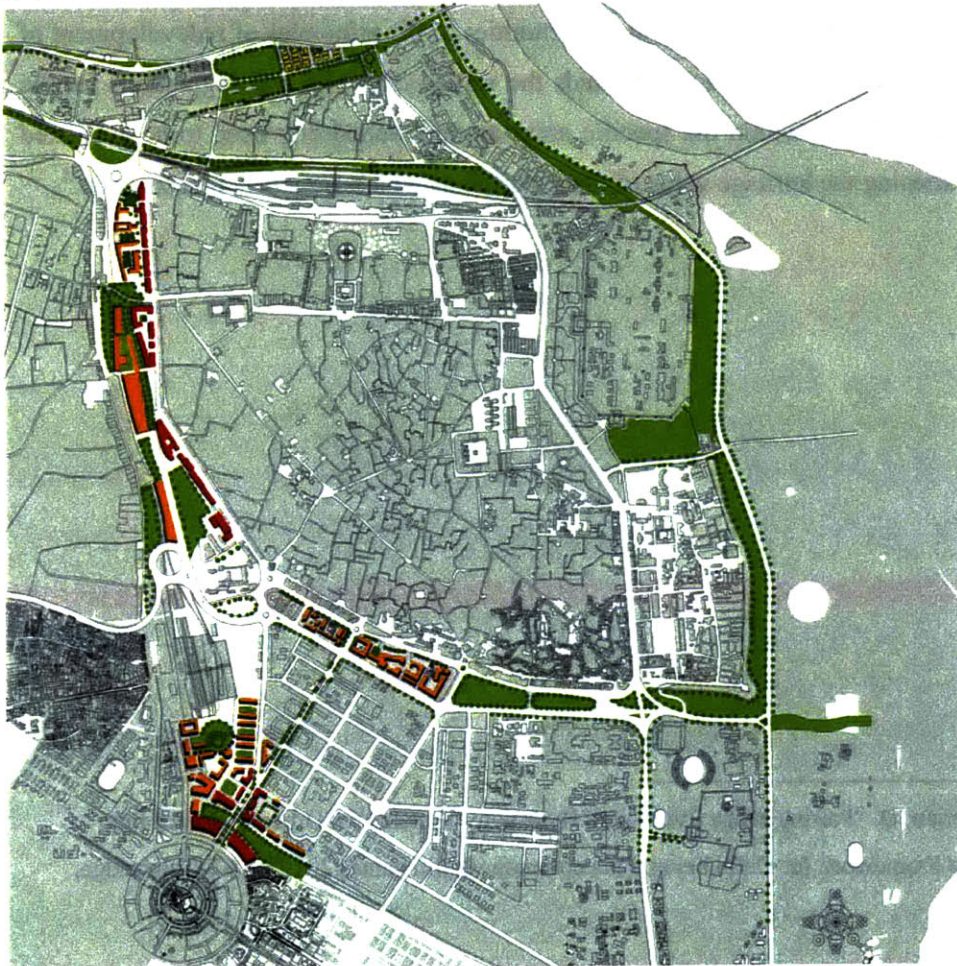
[Fig 5.235] **Proposal Urban Ring Development around Shahjahanabad**
Source: Author
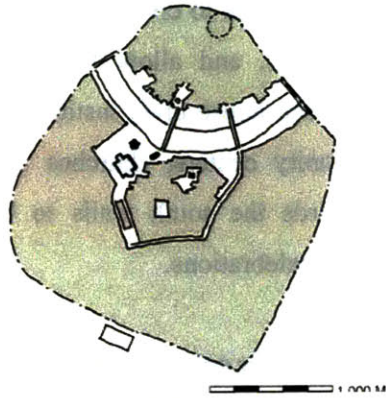
Plan Diagram for Pre war Dresden Ring
Source: The Dresden Project, MIT
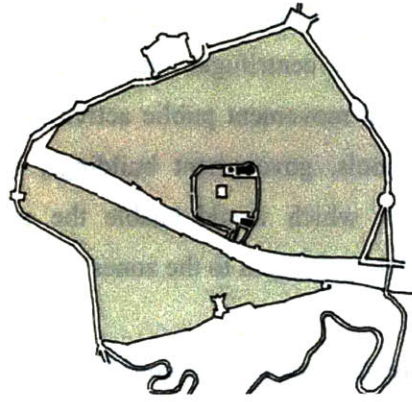
Plan Diagram for Florence Ring
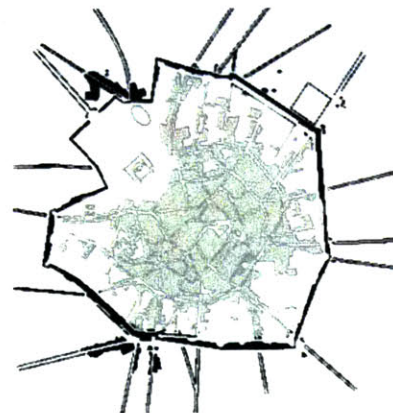Source: The Dresden Project, MIT

Plan Diagram for Shahjahanabad Ring
Source: Author
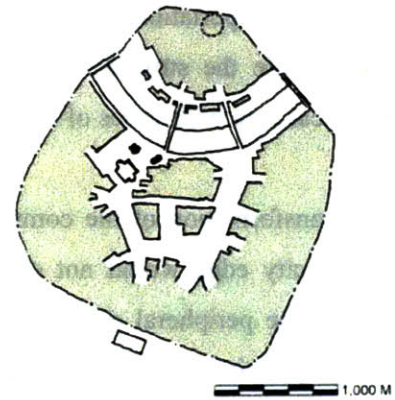
Plan Diagram for Post war Dresden Ring
Source: The Dresden Project, MIT
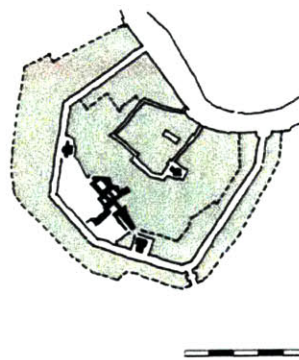
Plan Diagram for Vienna Ring
Source: The Dresden Project, MIT

Plan Diagram for Bologna, Italy Ring
Source: The Dresden Project, MIT

[Fig 5.236]Comparative Urban Rings for the walled cities

The urban ring hold an immense potentialities to be generated in to civic thread that would resist centrifugal forces of land use fragmentation, and allow for more centripetal movement public activities. This urban ring can house civic institutions like schools, government buildings, hospitals, community centers, churches and mosques, which would enable the green buffer towards the south walls to be efficiently utilized in to the zones of recreations and civic celebrations.

The circular zone of civic cord around the walled city would not only decentralize the public activities within the city, but also enhance the efficient mix of public activities on the either side of the peripheral zone. In terms of Urban design the proposal for the urban ring around the walled city would provide a common experience and markers transportation hubs at the junctions of radial and the peripheral streets. On a macro scale the structure of the walled city would be imagined to be the inner historical core with series of interconnected nodes located on its peripheries.

The transformation of the commercial land use in to civic use of the south of the walled city edge would not only enable the centralized decision making body to control the peripheral environments of Shahjahanabad, but also enable new urban design policies to revitalize the spatial configurations of the walls, which once framed the historical precinct. The idea of urban ring would provide synthetic character, creating linkages between the old fabric and New Delhi environments, and provide a unique formal expression to its identity and structure. The idea is to create an order of urbanistic beauty which respects the existing context and responds to the rhythms, hierarchies, surfaces spaces and patterns.

94

5.4 Developing urban connections to integrate the historical precinct

The proposed design makes an effort to create effective city level urban connections, which allows for movement perforation, and city level connectivity. The necessary step is to address the front back relationship of the historical core which would tie up with the urban design interventions and design parameters to configure density patterns, open space typologies and street character in the interface of obsolete open spaces lying along the edges of the walled city. The proposal for built un-built relationships helps in the physical, functional and visual integration of historical precinct.
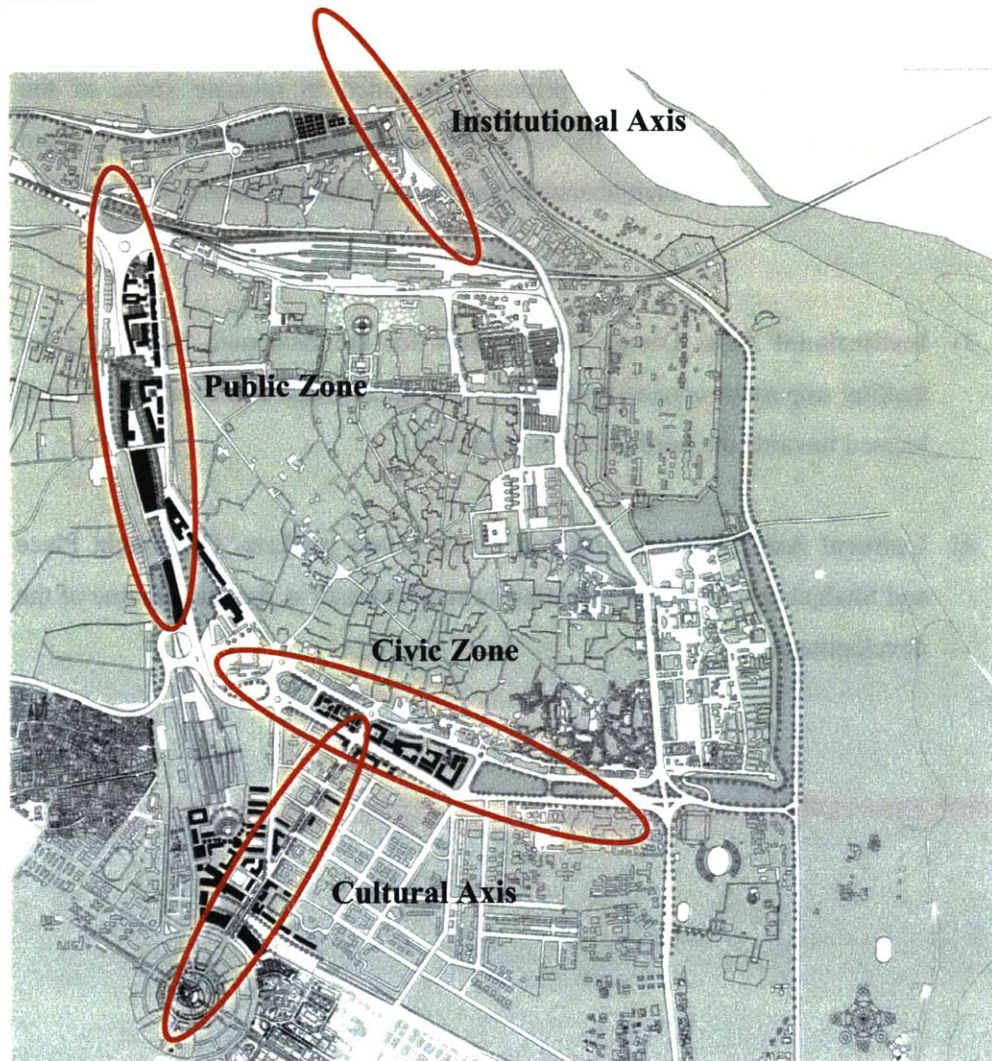
[Fig 5.34] **Development of Three distinct axis of development**
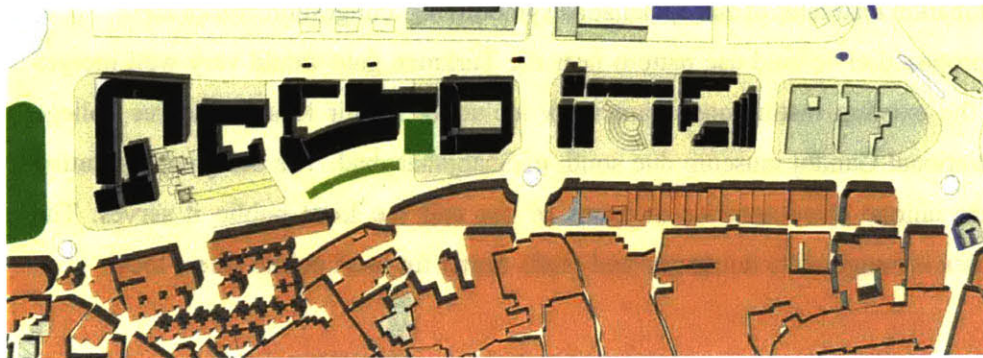Source: Author

In order to reintegrate the walled city of Shahjahanabad with the it's peripheral developments, the proposed master plan traces four different zones and axis of development along the urban ring. These areas are assessed on the basis of different issues and problems they embody, which are finally shaped through urban design proposals.

1) **Civic Zone**: Development proposal along the southern edge, near Ajmeri Gate, housing civic institutions like community centers and public gardens.

2) **Public Zone**: Design proposal towards the western edge of the Walled city supporting mixed land use, primarily intended to relocate some of the commercial activities from the congested streets and also to develop a green public access across Shahjahanabad and second Shahjahanabad (Pahargunj).

3) **Institutional Axis**: Design development for the Shamnath Marg corridor making important connectivity to the ecological ridge and institutional base located towards the north of Shahjahanabad.

4) **Cultural Axis**: Urban connection between two markets- Cannought Place and Shahjahanabad, by propagating cultural tourism as the main theme of the development.

5.4.1 Civic Zone
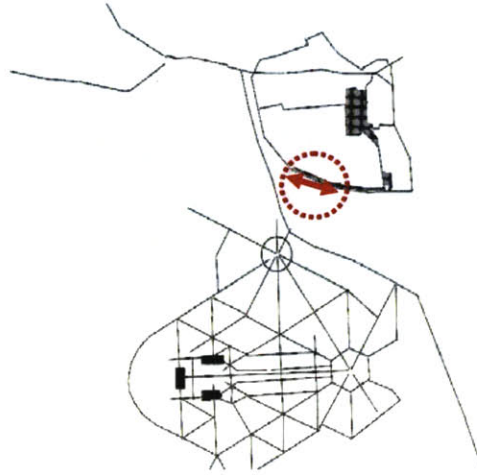
[Fig 5.32] **Plan Highlighting the site for Civic Axis**
Source: Author

[Fig 5.54] **Proposed Plan for Civic Zone**
Source: Author

[Fig 5.45] **Isometic View of the proposed Civic Zone**
Source: Author

[Fig 5.45] **Secyional View of the proposed Civic Zone**
Source: Author

The zone south of Shahjahanabad, between Lutyen's zone and the walled city is envisioned as a potential site for civic activities like schools, community centers, and interpretation centers which would establish a new public realm different from the usual market character of Shahjahanabad symbolizing congestion and chaos.

The proposed civic land use pattern near the Turkman gate would very well merges with the existing institutional framework including Zakhir Hussain degree college and National Gandhi museum due south of Shahjahanabad. The designed institution defines unique characteristics in terms of use and the local public it serves. The complex is imagined to house arts and crafts center for local public where local
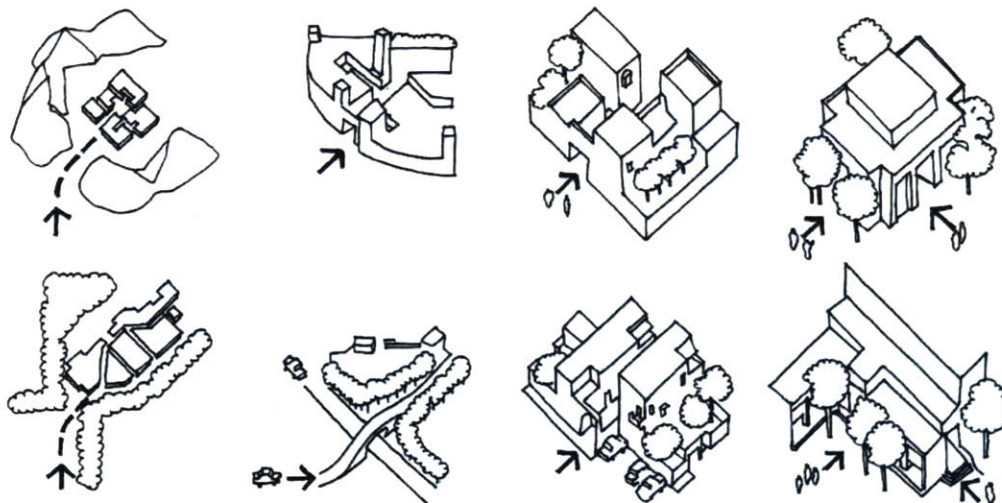

[Fig 5.34] **Urban Precedents defining Entry as one of the important attributes of Urban design proposal for Civic Structure**
Source: Adapted from habitat code for Iran, Ekistics 258

builders can taught the traditional construction techniques to promote traditional conservational methods. Building center by HUDCO would can be important initiatives to promote financial sustainability of these centers.

The proposed civic ring allows functional integration of people and functions on either side of the transitional zone under study. The civic edge proposal given for the Ramlila ground due south of Shahjahanabad respects the courtyard built typologies of Shahjahanabad while exploring series of urban forms that correspond to the fragmented edges of Shahjahanabad.

The new system of open spaces overlooks the existing urban punctuations that are defined by numerous openings and gates which marks the entry points to the walled city. Entry to the walled city whether through a residential zone or a public space creates a unique sense of entry to the walled city; the city level entry very much correlates to various urban precedents of the Indan indo-islamic urbanism centered around the green landscapes. The proposed urban design scheme for Civic vertebrate derives a design language that strengthens the entry points as important nodes of activities.

5.4.1.1 Garden and Urban design
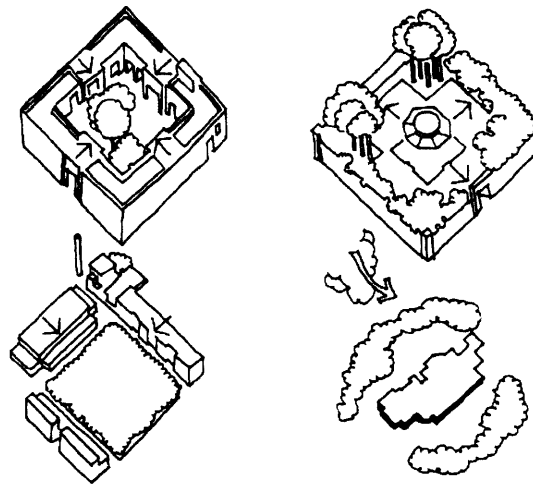
[Fig 5.34] **Garden as an important urban precedent for new Interventions**
Source: Adapted from habitat code for Iran, Ekistics 258

Courtyard garden has displayed an important relationship with the built form in Shahjahanabad whether it is small house or a big "Haveli" catering to the noblemen.

They not only provide the effective open space for the building but only open space for the inner city. Apart from providing a climatic relief, they have maintained a symbiotic relationship to between the built and narrow street of dense urban fabric.

" The garden and landscape interrelate through the intermediary form of the encampment. In this way they establish a fundamental relationship bound to effect, either consciously or unconsciously, the other acts of appropriation and settlement in the same territory[54]" Petruccioli, A.

The urban design proposal for the urban ring respects the "garden" as an important archetypical forms, which is universally adopted in the development proposals around the city peripheries. The aim of adopting "garden" as micorcosmic concept would add to the overall "green lung" concept devised for the overall city of Shahjahanabad. The smaller enclosed gardens become an intrinsic parts of larger green landscapes outside its building domain, which ties up all together to construct a green plan for the entire walled city of Shahjahanabad[55].

5.4.1.2 Design principles to treat the famous gates of Shahjahanabad as physical field of artifacts

The proposed segregation of different modes of transportation in to multiple hierarchies (fast traffic, medium traffic, and pedestrian) along the edges of Shahjahanabad generates physical fields around the monumental gates which previously lay inaccessible and offered nothing more than dead zones.

The various surgerical interventions proposed around the historical gates to allow for the following characteristics:

1) To strengthen the image and associative value of the "landmark" artifact
2) To convert the spaces around the gates in to places of visual platforms
3) To generate the gates as activity nodes along the proposed urban ring which acts as the public domains for physical connections.
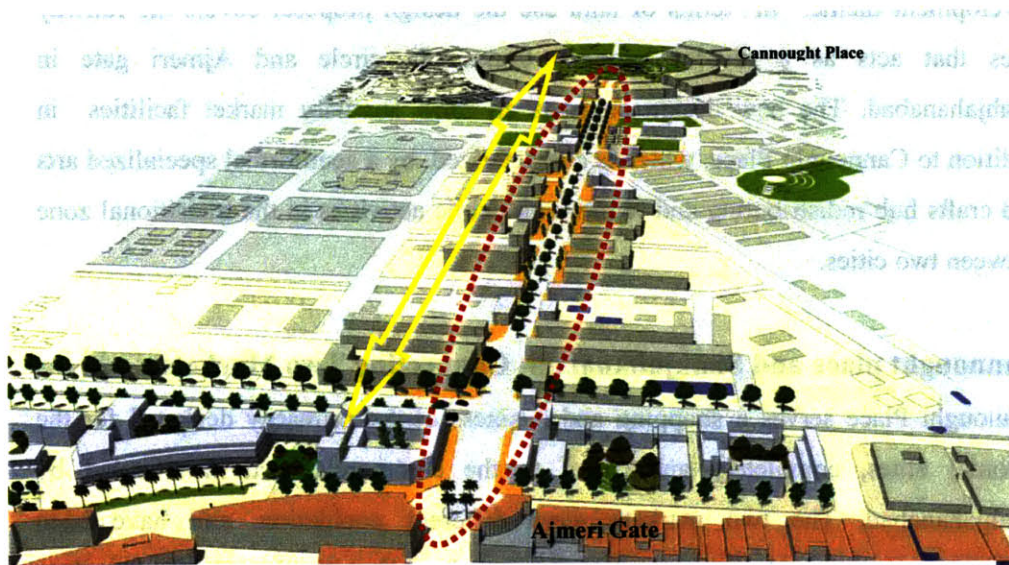
---

[54] Petruccioli, A. " Rethinking Islamic Garden" Islamic Environmental Design Research Center, Como Italy
[55] "Illustrated Habitat code for Iran" by Government of Iran
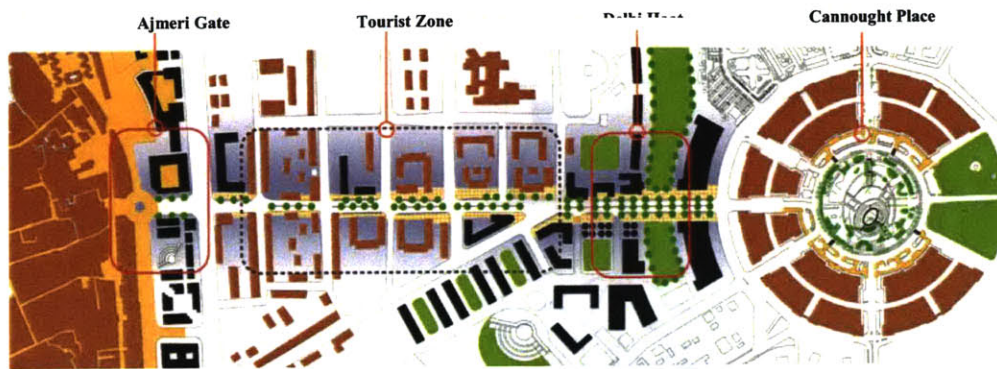
100
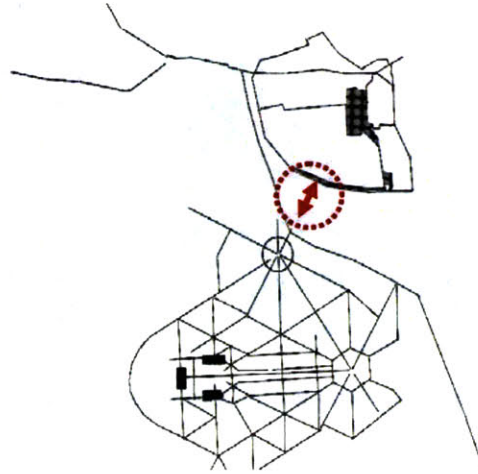
5.4.2 Cultural Axis

[Fig 5.32] **Plan Highlighting the site for Cultural Axis**
Source: Author

[Fig 5.76] **Proposed View for Cultural Axis**
Source: Author

[Fig 5.76] **Proposed Street view of Delhi Haat Market between Ajmeri Gate and Cannought Place**
Source: Author

[Fig 5.76] **Proposed Infill plan for Minto Road connecting Cannought Place and Shahjahanabad.**
Source: Author

The proposed master plan recognize the connection between Cannought Place and Shahjahanabad as an important nexus to propagate cultural tourism as its main development theme. In terms of land use the design proposal covers the railway lines that acts as a divider between Cannought circle and Ajmeri gate in Shahjahanabad. The new design supports an infill ancillary market facilities in addition to Cannought Place, which is characterized by a semiformal specialized arts and crafts hub redistributing and reinforcing public activities in the transitional zone between two cities.

Cannought place and Shahjahanabad- Connecting Two Markets

 Canought Place serves a shopping and business center primarily designed for the colonial elites, completely antithetical to the commercial activities served by Shahjahanabad. The two markets serve different population, and have been characterized differently in terms of land use and public activities. Cannought place market which was primarily design as a commercial center to serve the limited population within its influence, today serve as the primary cultural node with its rich heritage and symbolic values. Cannaught place marks one of the triangular nodes of New Delhi planning geometries, which was planned in order to form visual connections to Jamamasjid; the greatest mosques forming a religious nerve center for the walled city of Shahjahanabad. Unfortunately the visual axis was broken off by the high-rise office development around the Cannought circle during the 1970s, the

102

physical connections between the two traditional markets seek immense potentialities in terms of public activities and integrated land use patterns, which can concatenate effective linkages between the two markets.

The mixed institutional and residential zone offer fragmented street character between Cannaught place and Ajmeri gate which needs to be critically evaluated to be developed in to a cultural zone bridging the heritage sites of different images. The master plan proposes the re-densification of Minto road as an important nexus between the two markets (Shahjahanabad and New Delhi).

The master foresee the Minto road connection as an effective mixed land use with maximum inclination to create a recreational market similar to "Dilli Haat". The markets like Dilli Haat would not only propagate cultural significance of the two cities (Shahjahanabad and New Delhi) but would also helps in setting up a base for cultural tourism as an self sustainable base to infuse Inner city conservational process.

5.4.2.1 Cultural Tourism

Shahjahanabad today is recognized as the cultural capital of India. Along with other ancient sites of historical importance in the city, the walled city offer plethora of architectural monuments of national importance. However, since the city is poverty stricken which threatens the architectural environments of those monuments, which are hidden behind the convoluted streets of the old city. Unless a self sustainable idea is generated these monuments would continue to degrade until they are finally destroyed due to immense building pressures within the inner city.

Cultural tourism can emerge as an important tool to preserve and maintain the heritage value of the historical areas. It would no only help in being the important catalyst for the socio-economic benefits but also ushers conservational community to play an active role in the in the over all sustainable development of the traditional communities of Shahjahanabad.

Cultural tourism would help in the mobilization of resources where poor people pf the community can participate in the civic engagement; civic engagement which would require the establishment of participatory mechanism and services for the implementation of program and projects. Delhi tourism and the Government of National Capital Region (NCR) can play an integral role in creating a public private partnerships between the local people and various governmental and non governmental organizations (NGOs) helping in the over all development of the community.

In this sense this would allow the cultural tourism to function as a catalyst bringing different professionals like urban planners, tourist managers, and preservationists on a common platform to offer the following goals[56].

1) Managing the mobilization and relate investment effectively on the local and national level.

2) Strengthening local institutions so that they can become the parts of the larger systems.

5.4.3 Public Axis:
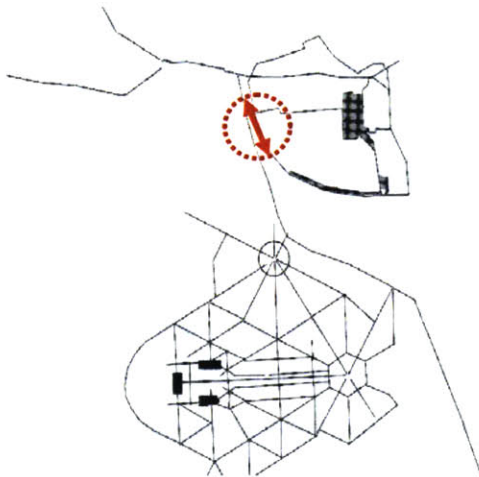
[Fig 5.32] **Plan Highlighting the site for Public Axis**
Source: Author
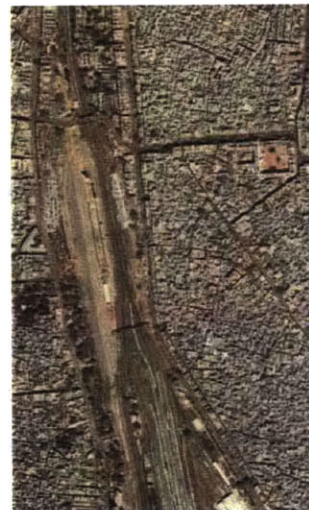
[Fig 5.32] **Aerial View of the site**
Source: Google Earth

---

[56] Wouuters,B. "Cultural Tourism Towards Community Development", Lund Univ. Sweden.

The public axis towards the western edge of Shahjahanabad, generates a new movement pattern occupying the spaces along and above the railway lines, so as to open new linkages connecting urban fabric on either side of the rail lines. The proposed pedestrian zone in the center creates a peripheral movement pattern connecting macro level, radial transportation and ecological corridors of the walled city.
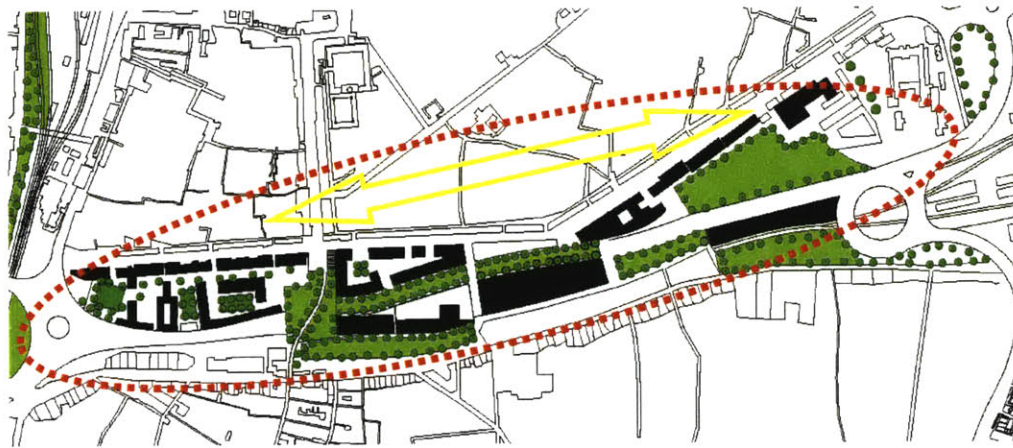
[Fig 5.32] **Proposed Infill plan for Railway Lines between Shahjahanabad and Sadar Bazaar**
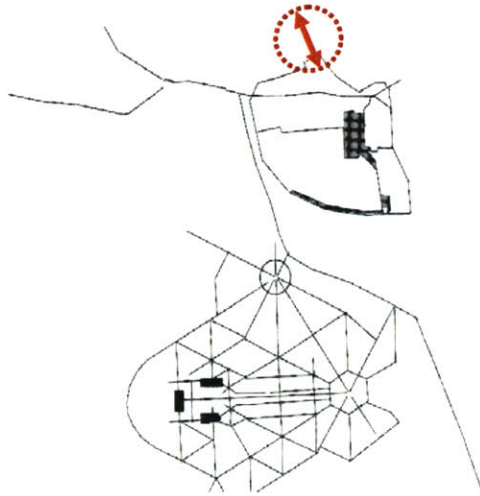Source: Author

[Fig 5.32] **Proposed Section Thru the "Public Access" Development**
Source: Adapted from DUAC

The squatter settlements provide one of the bigger problems as far as the redevelopment of Shahjahanabad is concerned. The proposed affordable housing along the railways lines towards Lahori gate tries to absorb the squatters in to a

formal housing, which uses the land effectively integrating its pubic spaces with the existing streets of Shahjahanabad. The proposed design regulates the widening of the street adjacent to the city edge in order to rehabilitate the commercial activities shifted from their original locations. In section, the design proposal envision three tier system of movement activity with lower most zone occupied by railway lines; the middle section occupying vehicular traffic and parking facilities; and the upper most zone occupying public activity with strategic placement of plazas and pedestrian trail corresponding to the macro level city connectivity.

5.4.4 Institutional Axis:

[Fig 5.32] **Plan Highlighting the site for institutional Axis**
Source: Author
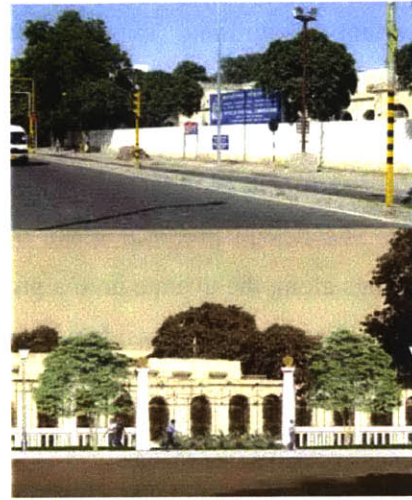
[Fig 5.32] **Before and After Street view Interventions**
Source: DUAC

[Fig 5.32] **Landscape plan for Shamaprasad Road connecting Kashmiri gate and Delhi Secretariat**
Source: DUAC

[Fig 5.32] **Proposed Street view for Institutional Axis**
Source: DUAC

The master plan proposes the development of Shamaprasad Mukherji Marg as an important institutional axis connecting Kashimri gate metro station in north Shahjahanabad and Central secretariat in the north of Civil Lines. The design focuses on the revitalization of street activities along the main avenue, which is lacking in the street due to the plotted institutional development isolated by the high boundary walls. The design proposal seeks the exposure and integration of many historical buildings along the avenue in to a proposed street landscapes, which generates public activity. The proposal considers Kashmiri gate metro station as the new gateway to the Shahjahanabad which marks the important end of Institutional axis towards Shahjahanabad[57]. The new design for the street encourages pedestrian friendly environment encompassing transit oriented approach in connecting the bustling Shahjahanabad with North Campus; an important institutional enclave of city Delhi for higher learning. North campus has been in news many times due to rising crimes, which are facilitated by its low density and inwards looking, vast green areas segregated from the main streets. The new master plan seeks the perforation of public activities from the intuitional campus to the street creating a safe environment for general public movement.
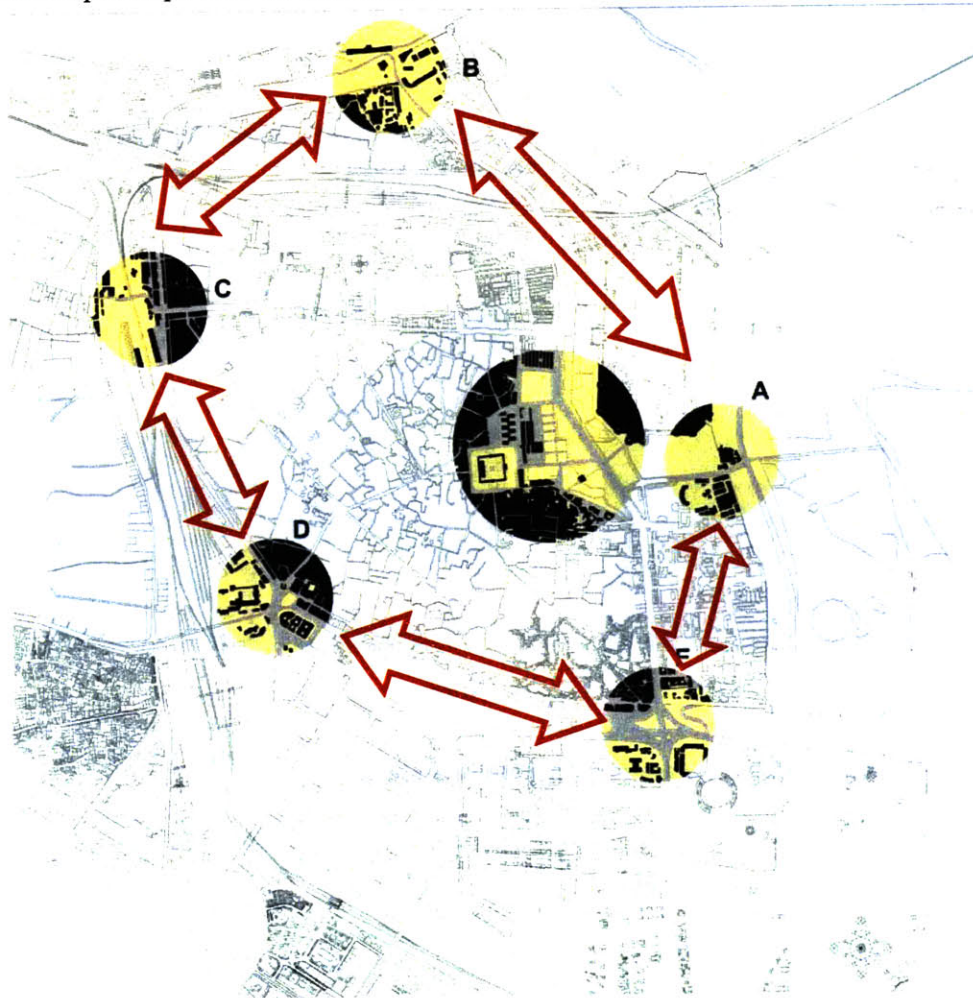
5.5 Conservational Development of Shahjahanabad Through special development, not by special Controls

Concept of "urban heritage" is encompassed as a conservational plan around the city edges, which would be equipped with the proposal for new development beyond the walls as important elements of conservational moves. The proposed civic center due south of Shahjahanabad would act as a intrinsic part of a larger comprehensive plan which would cater as strategic centers of public activity to educate local people towards the cultural heritage, protection, conservation and enhancement of the walled city. Physically the urban form of the designed complex is cotemporary in its outlook, however inspired by the traditional forms creates of interconnected central spaces purposefully connects the open areas adjacent to the walls offering a new public space for community celebration.

---

[57] "Imagining Delhi "by DUAC

108

The concatenate square skillfully designed within each block not only imitates the street character of traditional Shahjahanabad, but also serve as public space sensitively designed to attract public attention towards the historic character of the walled city.

Heritage walk along the great walls of Shahjahanabad: The proposed master plan perceives the zone near the walls as the non-vehicular traffic zone which facilitates public movement around the walls which is strategically tied up with the heritage walk perambulating the walled city. The concept of heritage walks would not only generate the public activity in those heritage zones, which lacks public activity, but also around those monuments whose edges do not offer any purpose but waste spaces for open toilets. The cultural walks are intended to connect the important landmarks and gates of the walls city which would propagate cultural tourism making the development process economically beneficial and community centered.

[Fig 5.33] **Proposal for connecting important gates of Shahjahanabad through the heritage trail around the walled city.**
Source: Author

Before

After

[Fig 5.32] **Conservational
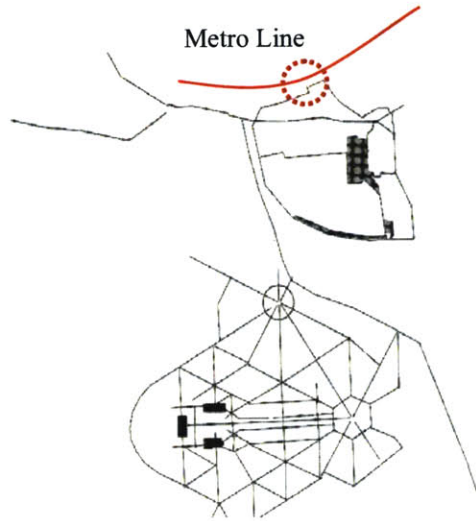development around the walls**
Source: Author

Metro Line

Fig 5.32] **Conservational development
around the walls**
Source: Author

Before

After

[Fig 5.32] **Heritage walk near Kashmiri Gate metro Station.**
Source: Author

110

5.5.1 Urban Renewal and Traffic

Intermix of multimodal Traffic poses greatest threat to the architectural conservation of the monuments especially on the edges, which are frequently encountered by the high speed vehicular traffic. The high speed vehicular traffic hinters the free movement and pedestrian accessibility to the monumental gates, which once served as the important entrances with high level of public activities.

Transportation needs to be the primary element for the conservation based urban renewal of Shahjahanabad. The master plan proposes a segregation of traffic in to three different concentric zones with the pedestrian trail serving the immediate surroundings of walls and monumental gates. The immediate zones of city monuments needs to be treated as the "area of minimum conflicts", which would prohibits the least possible traffic conflicts and congestion.

Delhi Transportation Authority can work in a close relationship with the various non-profitable agencies like INTACH in order to devise urban design policies to regulate the various zones of traffic activities aiming to treat the historical monuments as center of visual elements. Restriction on the private vehicular entry also become one of the transportation policies which would allow the definite entries to the pollutant vehicle while preserving the over all pedestrian environment within the inner city.

5.5.2 Urban Renewal and Preservation of Monuments

The concept of preservation needs to support improvement and redevelopment rather than treating the historical precinct on the mercy of draconian ASI's rule of " not constructing anything within the 100 meters" zone. The proposed master plan identifies the fragments of historical ruins not as the independent projects of conservation, but as the important components of a comprehensive planning framework, where all important sites are treated on the basis of three basic renewal strategies:

Conservation: Preserving and exploiting the aesthetics of the monument and incorporating them in to the renewal program of the precinct.

Improvement: Repair and maintain the architectural importance of the historical precinct through adaptive reuse.

Redevelopment: Promoting development around the historical precinct to enhance and protect the urban heritage.

Shahjahanabad needed to be treated as a special case of "heritage city" where the planning for the reconstructing the walled city would not be in isolation but in close relationship to the societal needs that negotiate with the everyday use of the historical space. Community participation of the local people of Shahjahanabad holds immense potentials, which needs to be harnessed in order to achieve following goals:

1. Coordinate amongst the public departments and private groups to achieve effective coalitions for urban renewal

2. To compare the costs and benefits for the individual renewal projects supported by the local community, as well as providing a larger financial goals for conservation based city center development.

5.5.3 Red Fort :

Red Fort is one of the finest monuments of Shahjahanabad. Build by the emperor Shajahan, the fort occupies a strategic location along the river Yamuna , with its walls symbolizing majestic appearance.

"In the larger context, Red Fort played an enormous symbolic role for the Indian people throughout the country, both during and after the freedom movement. On the morning of 15 August 1947, it was from this spot that Pandit Jawaharlal Nehru, the first prime minister of independent India, addressed his countrymen to commemorate a day that had long been sought". A.S. Mukherji, *The Red Fort*

Although the fort today acts as a talismanic emblem of the subcontinent's struggle against colonial rule, the monument faces severe neglect and deterioration in the hands of Archaeological Survey of India (ASI). The fort with 2.4 km wall, almost a quarter of it has been occupied by the Ministry of Defense which preclude any redevelopment activities within its precincts. The areas around the walls further see deterioration of historical precincts due to uncontrolled illegal activities of pick pocketing and unauthorized parking.

The proposed conservational plan for Red Fort proposes an adaptive reuse strategy for the monument so that some of the building within its boundaries can be reused as museum and interpretation center, where city's cultural and historical artifacts can be displayed. This is not only going to rehabilitate the monument with new activities through repair and alterations but also preserve those important portions of the building which are significant due to its historical and architectural values.

The process of adaptive reuse for the fort would bring financial gains and generate revenue to maintain the architectural quality of the historical buildings and manage the consistency of their appearances. Public accessibility across the fort is also one of the main factors which disable the city connectivity to the river edge, the river edge which holds immense potentialities to be redeveloped in to an important recreational space for Shahjahanabad. Although the gradual shifting of the river course from the forts walls has declined the symbolic and functional significance of the fort, the green buffers surrounding fort can be advantageously developed to revive the public activity. The proposed heritage walk and nature walks around the walled city can be well integrated with the macro level green strategies to highlight the importance of conservation in the local public.

The fort needs to be strategically developed so that it becomes the integrated effort to achieve the comprehensive conservational planning for "City Center Renewal". The efforts should not be to deal with the situation of Red Fort in isolation, but how it can be made interactive with its foreground space, which house multiple nary functions, right now creating ambiguity and non-directionality of movement patterns. The aim

of the interventions should be to create a comprehensible image by creating a sequential pattern of ordered events to increase the connectivity and legibility of various areas of historical precinct. An effective public transportation policy can help in restraining the entry of public vehicle in to the historical precinct. The open areas around the red fort should be developed to keep pedestrians as the most prioritized traffic.

The green buffers in between river and the fort should not only be dealt as the landscape buffer from the high speed traffic along the ring road, but should be explored as an important zone forming foreground and back ground relationship with the fort. The green strip should also be tied up in section to formulate interesting linkages with the river front landscapes of commemoration.

5.6 Traffic Plan:

5.6.1 Macro level traffic design

Shahjahanabad act as the primary transportation hub for the city of Delhi with the two railway stations located only 3 km away from each other. The establishment of satellite towns like Ghaziabad, Noida and Dwarka since 1966 has facilitated new connectivity to the center of Delhi, however, unfortunately lead to the increase in the overall congestion in Shahjahanabad. According to the recent study "Delhi area" handles about 230 passenger trains 65 goods trains, out of which 71 passenger trains and 34 goods train use Delhi main railway station in Shahjahanabad. It is also projected that New Delhi railways station act as a single rail road node, the users of which can support a large part of commercial activities proportionate to the volume of passenger supported by both Old Delhi and New Delhi railway station.
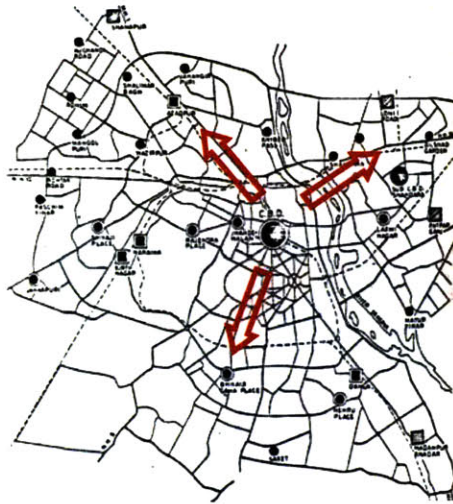
[Fig 5.32] **Plan Depicting Decentralization of Commercial activities in to suroundung CBDs**
Source: Conservation Based Development of Shahjahanabad

[Fig 5.32] **Plan Depicting Decentralization of Freight Activities in to surrounding rail stations**
Source: Author

Although the issue of excessive commercialization has been tried to be resolved by NCR 2001 plan (National Capital Region Planning Board) by the decentralization wholesale commercial activities in to the surrounding satellite towns, the plan did not succeed due to lack of regional level distribution of railroad transportation system . The satellite towns support all infrastructural facilities which are equally potent to

support commercial freight activities, if they are well equipped with the rail line freight transportation system. Nizamuddin railways station towards south east of shahjahanabad, Sarai Rohilla Railway to the east of Shahjahanabad, are few such station which can become as the target zones to distribute freight activities which are currently pressurizing on the two main railway stations of Shahjahanabad.

ISBT Interstate Bus Terminus towards Kashmiri gate also caters as a single main bus terminus located due to north of Shahjahanabad. Although the close connectivity of Kashimiri gate ISBT to GT road makes Shahjahanabad best location for Interstate transportation hub, the arterial ring road needs to be reevaluated in order to locate several other regional road based transportation hubs.

The important nodes along the ring road like Kale khan bust terminus and Indraprastha bus terminus in the trans-Yamuna area offer some of the opportunities to distribute the regional traffic out in to the satellite towns.
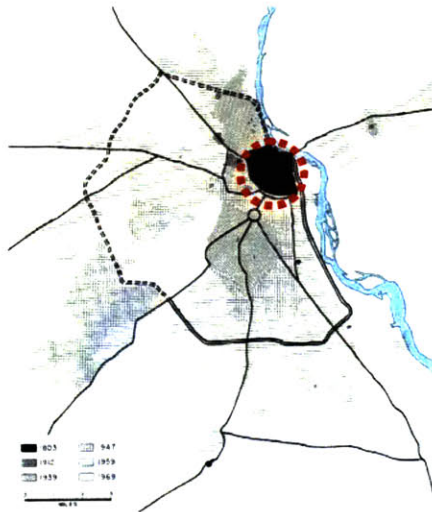

[Fig 5.32] **Regulating Ring Road Concept around Shahjahanabad**
Source: Http://Google.Image.com
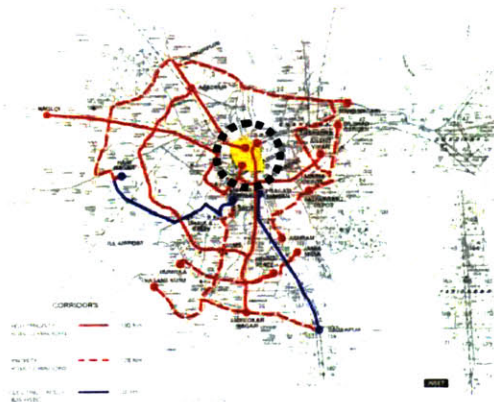
[Fig 5.32] **Integrating HCBS (High Capacity Bus System) with the proposed ringtrasse around Shahjahanabad**
Source: Transportation Deptt, Govt. of NCT

On a micro scale, the proposed traffic plan for Shahjahanabad closely looks at the histrionic movement patterns with respect to the new patterns, which add to the overall circulation system to the walled city. On the concept of a ring city within the larger context of Delhi, the master plan proposes an inner ring road around

116

Shahjahanabad in order to restructure and integrate the existing modes of transportation, as well as seek future scope of absorbing current transit system and high capacity bus system aimed to decongest the traditional core. The main aim of the proposed traffic plan is not only to integrate multimodal transportation systems, but also to segregate the different modes of transportation to avoid lesser traffic conflicts, primarily on the edges of traditional core which acts an interface between the inner congestion of the historic core and open areas of New Delhi outside the walls.
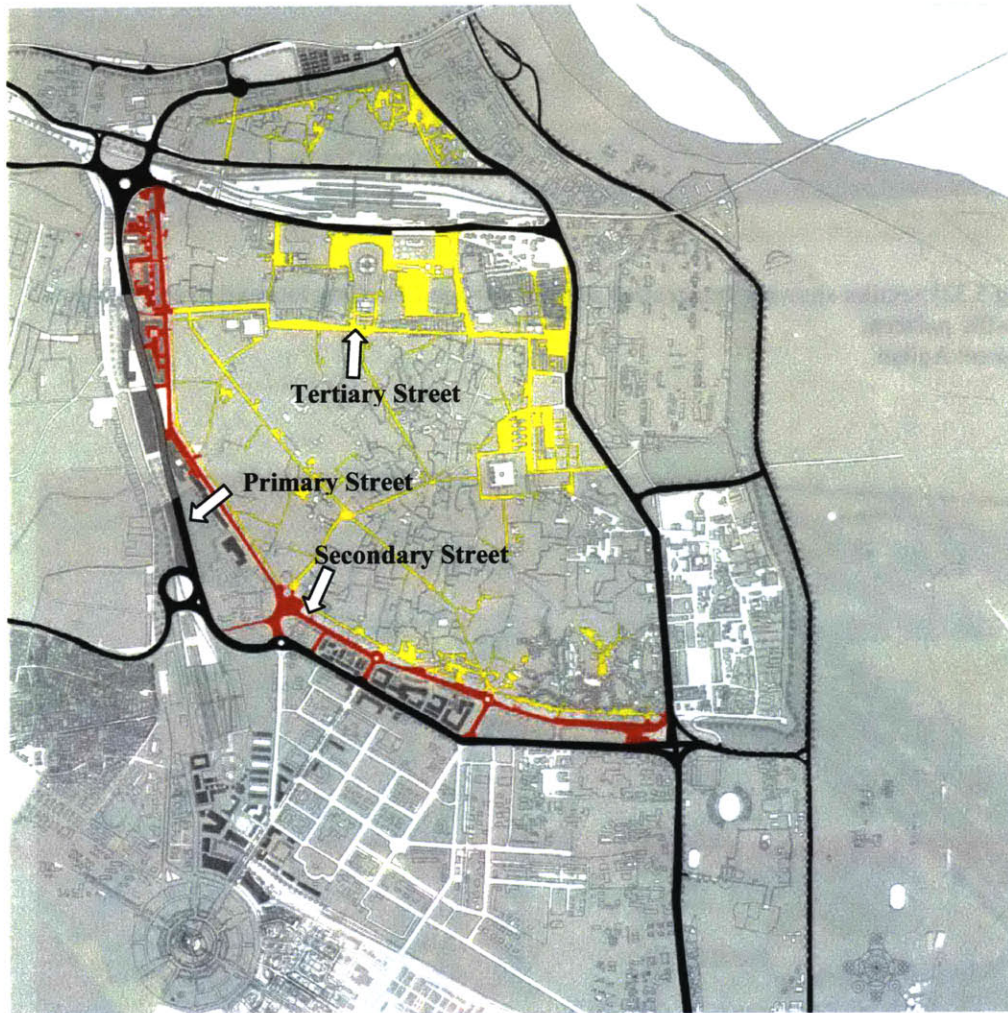
[Fig 5.32] **Plan showing three different levels of Traffic movements**
Source: Author

The outer ringtresse street is identified as the primary server of vehicular traffic which allows the circular movement pattern around walled city with uniformly

spread out entry and exits relieving the traffic pressures from the primary routes like Netaji Subhash marg and Mahatma Gandhi marg.

The proposed traffic plan for Shahjahanabad adopts three different levels of movement patterns:

[Fig 5.32] **Section showing Integration of under ground Parking lots and over ground Traffic pattern.**
Source: Author
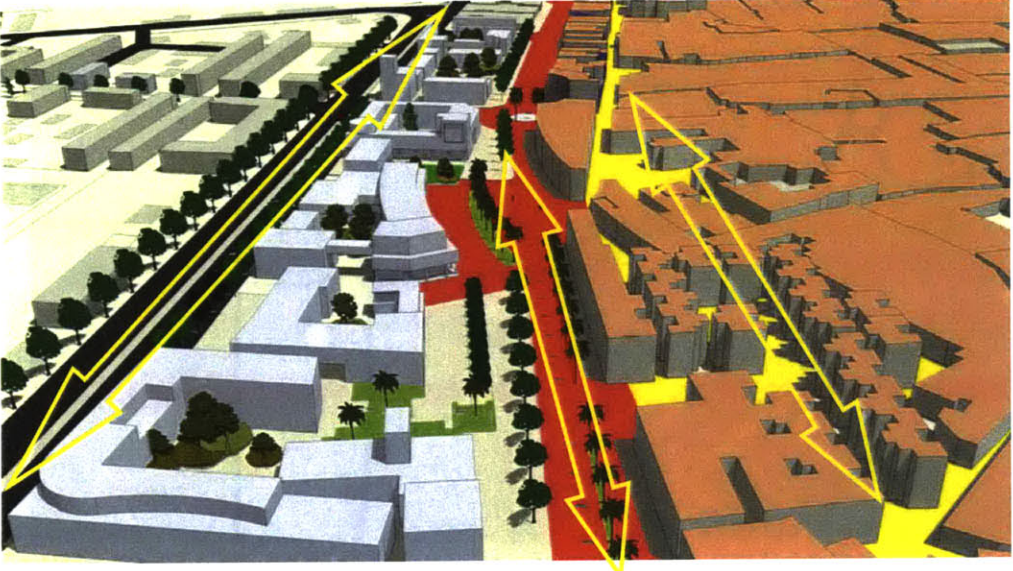
[Fig 5.32] Aerial **View showing Segregation of Traffic Patterns**
Source: Author

1. **Primary Street**: The proposed outer ring road, which would act as a subset of an existing arterial ring road of Delhi that would allow a incessant movement vehicular traffic around the walled city connecting various feeder streets reaching the innermost areas of the core. The master plan identifies a series of parking lots around the ringtresse which would restrict the entries of the private vehicles in to the narrow streets of Shahjahanabad.

2. **Secondary street**: Including medium pace moving traffic including cycle Rikshaws, and bicycle and hand driven carts.

3. **Tertiary Streets**: Slow traffic in the innermost of street system especially along the historical walls which supports pedestrian movement and medium fast traffic including cycle rickshaws and two wheeler scooters.

5.6.2 Walled gates as transportation nodes

The proposed design identifies the gates of Shahjahanabad as the urban nodes of public activities, which hold immense potentials to be developed in to transportation terminals offering effective integration between the internal and external traffic systems. For example the Ajmeri gate can be developed as a traffic exchange between New Delhi railway station, high capacity bus system and transit station with the five minutes walking distance to the interior areas of the walled city. Kashmiri gate can be developed in to another transportation node serving Kashmiri gate metro station ISBT, Old Delhi railways station, and inter state bus terminus.

The traffic of Shahjahanabad is characterized by two basic patterns of movement; first with short trip distances and high share of walking and medium traffic; second with the motorized traffic, which primarily operates in and out of the city core for definite trip destinations. Since these systems are not organized, they provide maximum confusions in the traffic pattern, especially at the edges, which slows down the overall traffic creating severe inner city and congestion environmental problems.

The proposed master plan identifies the important gates of the walled city as the major transportation hubs allowing integration between different modes of transportation. An important study done by Delhi Transportation Authority states that the proposed metro system Delhi do not cover up all the interior areas of the city, bus evolves as the best and cheapest modes of transportation especially for those areas which are poverty stricken.

The proposed master plan supports High Capacity Bus system as an important component to propagate pedestrian friendly environment for the walled city. Moreover, the concept of "pedestrian friendly city" is further strengthened by supporting different other private owned eco-friendly public vehicles like battery operated mini buses and cycle rickshaws to make the transportation system ecological, as well as economically sustainable. The walled city of Shahjahanabad needs to be treated specially, but as a part of a larger Delhi transportation strategy , in which Delhi government should play an important role in creating a financial and institutional framework that leverages private and public funds in the implimentabilty of sustainable infrastructure. The upcoming Delhi metro would provide an important contribution in order to solve some of the primary problems of traffic and congestion. It is important to recognize how the proposed transit stations associated with Shahjahanabad can be incorporated with the proposed transportation strategies for the ringstrasse around Shahjahanabad. As a part of traffic strategy for the walled city, the famous gates around Shahjahanabad are treated as the important nodes for traffic interchange, which offer multiple modes of transportation neatly designed to avoid any traffic conflicts. The gates of the walled city are not only treated as important nodes of traffic interchange, but also effective zones of "restrictions"; restricting private motorized traffic entering the walled city. The design proposal would be supported by urban design policies, which restrict the entry of private vehicles based upon the different timings and purpose trip purpose.

### 5.6.3 Converting streets in to Pedestrian Thoroughfares

Rikshaws
13%

Walks
38%

Bus
49%

- Walks
- Bus
- Rikshaws
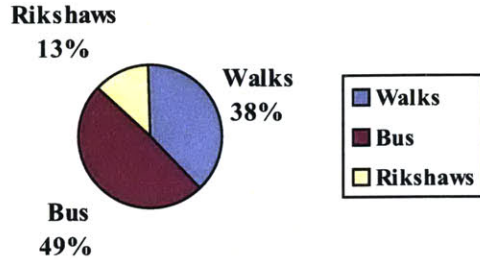
[Table 5.32] **Table showing Non vehicular traffic in Shahjahanabad**
Source: Delhi Transportation Authority

[Fig 5.32] **Traffic View of Shahjahanabad**
Source: www.photochrome.org

Ever since it's initial times, the streets of Shahjahanabad have been the major assets as a generator of the local economy. An interesting calculation would prove how the space occupied by a pedestrian on the street would generate economy as compared to other modes of transportation, which includes two wheelers, or other medium modes of transportation. The streets not only offer linear spaces of traffic mobility, but also remarkable spaces of public activity. The intrusion of vehicular modes in to the narrow winding streets of traditional city have been occupied by the major portion of street spaces in to vehicular thoroughfare.

The statistics given by Delhi Transportation Authority shows that there have been nearly 32% of trips by walks, 42% trips by bus, 11% trips by slow modes like cycles and Rickshaws. "Walking" needs to be identified as the primary and the most necessary modes of traffic for the inner city since most of the areas of within ten minutes of walking distance; because walking offer free mode with better environmental controls; and because it is the most affordable means of transportation for the major portion of the population that lives and work in Shahjahanabad.
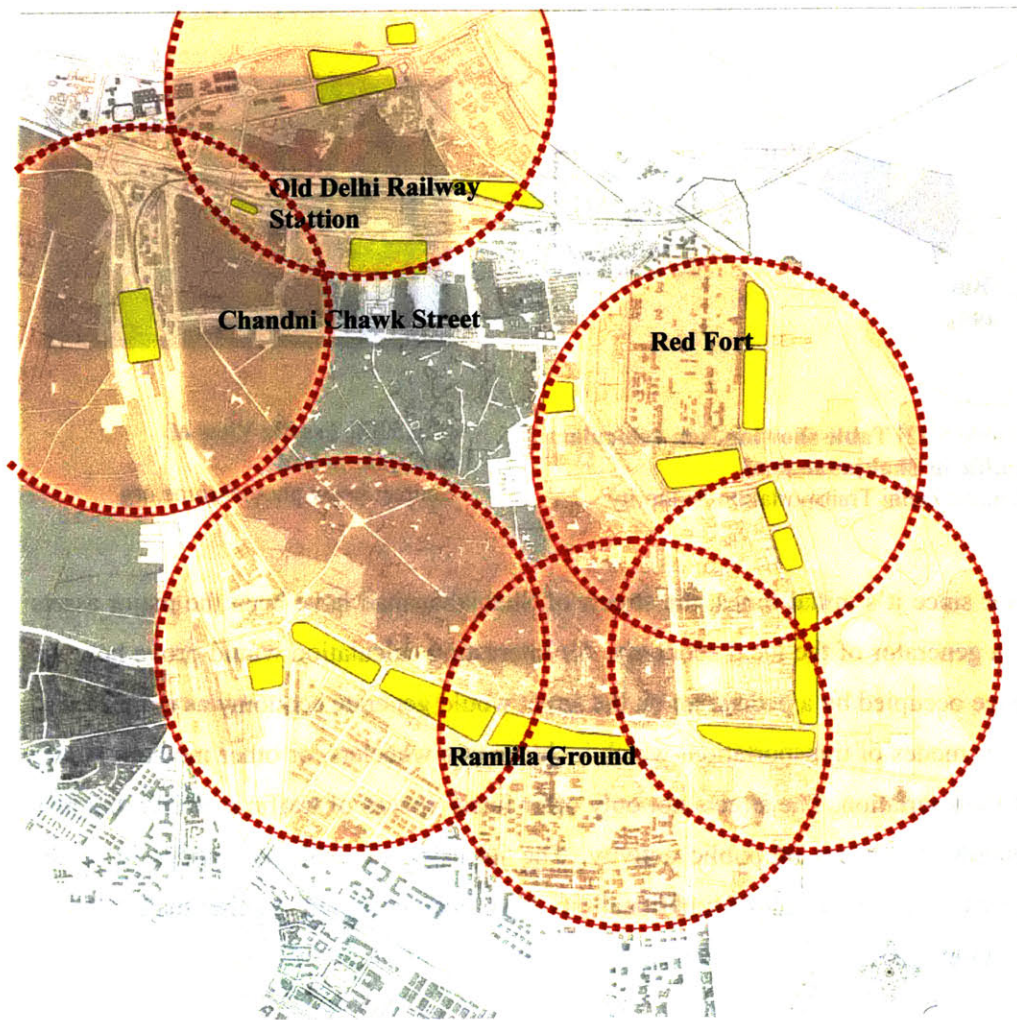
[Fig 5.32] **System of Parking lots and 5 minutes walking distances**
Source: Author

The proposed master plan traces various parking lots on the peripheries of the walled city so that, on a city scale, there is a comprehensive system of parking spaces which offer "park and walk" system, facilitating commuters to park and walking to their nearest destinations in the walled city.

Final Remarks:

The city walls were one of the main urban precedents of medeival cities, which were created in order provide a sense of territoiality and safety from their opponents. Althoughthe human physcological factors eroded with time, these cities continued to grow introvertly to create an inside outside relationship across the defined edges, bifurcating density patterns across the walls. Many of these cities became technologically obsolete when city expansions became inevitable. The way these walled cities responded to the urban growth beyond the peripheries differed due to their sociocultural patterns they contained, and development patterns which they confronted outside their traditional cores.

These cities reflect many commonalities with definite edges, high density patterns within the walls, and ringstrasse structure defining the overall city form. Many such walled cities in the Indian subcontinent like Amritsar, Ahmedabad, Shahjahanabad, Jaipur, and Aminabad in Lucknow offer some of the common expriences of inner congestion. Although there have been numerous revialization efforts to deal with the inner city problems of these old cities, the solutions failed to comprehend the primary reason behind all problems, which is primarily because of inefficient physical and funtional connectivity withing the larger regional development.

"City decentralization" and "City integration" emerges as important notions of urban planning which should be explored in order to deal with the introvert nature of the walled cities. For example, the thesis adopted the redevelopment of the edges of Shahjahanabad as the primary urban design move to fervor "city decentralization" , which I believed is an important step to achieve constant mobility patterns across the city boundaries. City decentralization process, however, might undermine the cultural significance of the traditional cities, which I believe should be the primary concern while proposing new urban designs in the historical precincts. The new designs should not only be guidied by the strict zonal regulations, but also through the close relationship of exsiting open spaces and streets, which corelates to the exsiting histrionic patterns of traditional city.

The walled cities need to be looked differently as comared to other historical cities, because they offer similarities in their structures, the solutions to which can become learning experiences for other walled cities.

Bibliography

A.k.Jain, *Urban Planning –Papankala*, Architecture+Design, July-August, 1989

Badshah, A. "Interventions in to Old Residential Quarters- The Case of Shahjahanabad", Published Thesis, MIT Cambridge, USA, 1981.

Berman, M. "All that is Solid Melts in to Air", Thames and Hudson, New York, USA, 1997.

Bhatnagar, A.P. "Delhi and its Fort Palace- A Historical Preview", Shubhi Publications, Delhi, 2003.

Blake, S.P. "Shahjahanabad: The Sovereign City in Mughal India", Cambridge University Press, New Delhi, 1991.

Boyer, M. "The city of Collective Memory- Its Historical Imagery and Architectural Entertainments", the MIT Press Cambridge, Massachusetts, 1994.

Breese, G. "Urban and Regional Planning for the Delhi- New Delhi Area", Capital for Conquerors and Country, Princeton, New Jersey, 1974.

Breese, G. "Urban Development Problems in India", Online Posting, Apr 14. 2006. http//www/jstor.org

Chatterjee, P. "The Nation and its Fragments", New Jersey: Princeton University Press, 1993.

Cherian, D. "Pairing Mega Events and Hydrology Systems for Urban Sustainability, Pairing Framework for Delhi beyond the common wealth games 2010", MIT Cambridge, 2004.

Delhi Development Authority. *"Master Plan for Delhi"*, New Delhi, 1962.

Dupont, V & Tarlo, E. "Delhi" Manohar Publishers and Distributors, New Delhi, 2000.

Eckart. E & Kraft. T. "Shahjahanabad Old Delhi- Tradition and Colonial Change", Lordson Publisher Pvt. Ltd., New Delhi, 2003.

Fonsec, R. "Walled City Shahjahanabad", Architecture + Design, Vol 25-26, 1992.

Frykenberg, R.E. "Delhi Through the Ages-An essay in Urban History, Culture and Society", Oxford University, Oxford, 1986.

Ghosh, B. "The making of New Delhi", School of Planning and Architecture, New Delhi, 1982.
Goodfriend. D. E. "The Chronology of Delhi's Development (1803-1982)", Architecture + Design, Vol 25-26, 1981-82.

Gupta, A. "Dominion Geometries- Colonial Construction and Post Colonial Persistence of Imperial in New Delhi Plan", Masters in City Planning (MCP) Thesis, MIT Cambridge, 2005.

Gupta, N. "Delhi Between two Empires 1803-1931", Oxford Univ. Press, Delhi, 1981.

Hearn, G.R. "Seven Cities of Delhi", W. Tacker & Co., London, 1906.

Helen, M. "Patrick Geddes, Social Evolutionist and City Planner", London: Routledge, P 235, 1990.

Hosagrahar, J. "City as durbar: Theatre and Power in Imperial Delhi", in Alsayyad (83-105), 1992.

Hosagrahar, J. "Indigenous Modernities- Negotiating Architecture and Urbanism", Routledge Taylor & Fransis Group, 2005.

Irving, R.G. "Indian Summer- Lutyens, Baker and Imperial Delhi", Yale Univ. Press, London, 1981.

Jagmohan. "Rebuilding Shahjahanabad, The walled City of Delhi", Vikas Publishing House Pvt. Ltd, New Delhi, 1975.
Jain, A. "Delhi Debates: Should Lutyen's Delhi be opened to Development?" Seminars on Architecture, School of Planning and Architecture, New Delhi, 1999.

Jain, A. "The Future of the Past: Revitalizing Through Adaptive Reuse", Seminars on Architecture, School of Planning and Architecture, New Delhi, 1999.

King, A. "Colonial Urban Development- Culture, Social Power and Environment", Routledge & Kegan Paul, London, Henley & Boston, 1976.

King, A. "Colonial Urban Development: Culture, Social Power and Environment", London Routledge and Kegan Paul Ltd, 1976.

Kulsrestha, N. "History of Formal Housing in Delhi", Published thesis, University of Leuven Belgium, 1993.

Kumar, A. "The inverted Compact City of Delhi", in Jenks et al, 2000.

126

Kumar, Rajeev "Reinforcing the imageability of Delhi through restructuring of the drainage channels as an open space system", unpublished thesis-Department of Urban Design, School of Planning and Architecture, New Delhi, 1994.

Land and Building Deptt. , , Govt. of National *Report of Task Force Regarding Covering of Nallahs/Drains in Delhi* Capital Territory, Delhi, pg. 1, 1993

Lynch, K. "Theory of Good City Form"

Mehra, A. "The Politics of Urban Development- A Study of Old Delhi", Sage Publications Inc, New Delhi, 1991.

Menon, A.G.K. "Monuments of Power- Delhi", Manohar Publishers & Distributors, New Delhi, 2000.

Menon,A.G.K. "The Case for Indian Charter" Online posting 2003, http://www.india-seminar.com/2003/530/530%20a.g.%20krishna%20menon.htm Metcalf, T. "The Aftermath of Revolt: India, 1857-1870; Christopher Hibbert, The great Mutiny: India 1857 (1978).

Metcalf. R. "An Imperial Vision- Indian Architecture and British Raj" , Faber and Faber Ltd. London., 1989.

Mitra, A. "Delhi- Capital City", Thomson Press, New Delhi, 1970.

Mohan, I. "The world of Walled Cities", Mittal Publications, New Delhi, 1992.

Mukherji, A. "The Red Fort of Shahjahanabad", Oxford University Press, New Delhi, 2003.

Nath, V., Dr. " Planning for Delhi", Geo Journal, Kulver Academic Publishers, 1993.

Parthasarathy, S. "Reading Maps and Plans: Changing Perception of Delhi", Published Thesis, MIT, Cambridge, 1990.

Peck, L. "Delhi- A Thousand Years of Building", The Lotus Collection, New Delhi, 2005.

Roy, A. "Interpreting a Contemporary Urban Vernacular for Cities- The Case of Delhi", Published Thesis, MIT Cambridge, USA, 1988.

Saha, S.K. " Conservation Based Development of Shahjahanabad: Historic Captial City of India", UNCRD research report series No.9, United Narions Center for Regional Development, Jan 1995.

Samuel, V. "Old Lahore and Old Delhi,- Variations in Mughal Theme", Architecture + Design, Vol 25-26, 1981.

Sanjay Prakash, *Mall and Mela*, Architecture +Design, July-August, 1994
Saxena, L., et al. "Drainage Network of Delhi- Evolution, Problems and Opportunities", School of Planning and Architecture, New Delhi, 2002.

Shaf, S.S. et al " Seminar on Redevelopment of Shahjahanabad, Delhi, 1975", Town and Country Planning Organization, Govt. of India Ministry of Works and Housing New Delhi.

Sharma, Y. "A New Memorial Landscape for India", Published Thesis, Illinois Institute of Technology, Urbana Champaign, USA, 1998.

Singh, K. "Delhi", Penguin Books, New Delhi, 1990.

Singh, P. & Dhamija, R. "Delhi- The Deepening Urban Crisis", Sterling Publishers Private Limited, 2003.

128

Singh,P & Dhamija. "The Deepening Urban Crisis", Sterling Publisher's Private Ltd, Delhi, 1989.

Sobit, I. "Urban Form and Space in the Islamic City", Published Thesis, MIT, Cambridge, USA, 1993.

Spear, T.J. "Delhi- A Historical Sketch", Oxford Univ. Press, Bombay, 1945.

Stephan Cutler.L & Stephen Cutler. S, "Establishing Dialogue for Recycling Cities", EKISTICS: The Problems of Science of HUMAN SETTLEMENTS,Vol.43, No.254, 1977.

Town and Country Planning Organization. (1975), Redevelopment of Shahjahanabad- The Walled City of Delhi, New Delhi.

Tracy. J.D. "City Walls", Cambridge University Press, Univ. of Cambridge, 2000.

Trancik, R. "Finding Lost Space- Theories of Urban Design", Van Nostrand Reinhold Company, New York, 1986.

Transik, R. " Restructuring Antispace", Chalmers University Press, Goteborg Sweden, 1986.

Verma, G. "Inner City Renewal: Lessons from the Indian Experience"