SHIFTING CENTRALITIES, SHARED LINES
A redefined role for the peri-urban space in Delhi, National Capital Region

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Colophon

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These two years spent in TU Delft, The Netherlands has been a very enriching experience. The program that I pursued, European Masters in Urbanism, has broadened my perspectives on a number of relevant and pressing urban issues which are constantly shaping the world. I am sure that I will continue to benefit from this immense opportunity that I got.

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Delhi is not my hometown nor where I grew up. My first interaction with Delhi was 13 years ago, as a school-going tourist, eager to experience the other side of my country. Having done my schooling in the Middle East; India in itself was a source of fascination with its varied identities, cultures and people intermingling in a seeming sense of chaotic balance.

My native place, a small town named Tiruvalla, in the province of Kerala from the tip of the Indian Peninsula, was literally and figuratively the other side.

Delhi seemed to have all the magic of the quintessential colorful Indian city. The strong presence of ancient heritage co-existing, albeit chaotically with British Imperial architecture, incessant traffic jams and hordes of people all had a lasting impression on me. When I was to visit it again 7 years later, I was exposed to other facets of the city, this time as a bachelor architecture student. I began noticing the urban fragments that defined the city, the widening income disparity; a city grappling to accommodate the large surges of people who set foot on her every day in the hope of new opportunities. Even then, my trajectories in the city were limited to the thriving urban cores; that of the main city and the neighboring cities, Noida and Gurgaon.

What really happens in the in-between places? Does everybody, like me only pass through them with a vague awareness of the space there? What kind of spatial conflicts is this space subject to? Is it a forgotten backyard of the big overwhelming city? How can this area achieve self-sufficiency?

These questions among others led me to define the prospects of my thesis. This is thus an attempt to understand these in-between spaces, also referred to as peri-urban spaces in academic terms. This thesis will hopefully be the start of an ensuing exploration to other similar spaces throughout the world.
Mingling of the old and the new...

Source: Picture by Fawaz
Informal Commerce

Source: Picture by Fawaz
Private and Public Housing

Source: Picture by Fawaz
Productive landscape

Super-Imposition of crude infrastructure

Source: Picture by Fawaz
Globally aspiring satellite cities

Source: Picture by Fawaz
Congested Urban Villages

Source: Picture by Fawaz
The processes that have shaped the urban transformation of Delhi are not singular. Similar trajectories have been observed in rapidly expanding metropolises especially those in the global South. This chapter entails an understanding of the factors that accelerated the processes of the formation of conurbations, ensuing fragmentation and socio-spatial segregation.
Debates on fragmentation have been synonymous with post-modernism and globalization; with those on the latter having already entered collective consciousness.

Post-Modernism was considered by Harvey (1990) to be a significant departure from the ‘modernist idea of planning and development that focussed on large-scale, metropolitan-wide, technologically rational and efficient urban forms. Instead, it conceptualises the urban fabric as fragmented, where there is a juxtaposition of ‘palimpsest of past forms’ and ‘collage of current uses.’ (Harvey, 1990, p.66)


Lyotard (1982, 1984, p.82) whose views on post modernism dominated the 1980s considered fragmentation as an opposite of ‘totalization’, ‘homogenization’ and an outcome of post-modern pluralism.

de Certaue’s influential text ‘L’Invention Quotidien’ (1980), while criticizing totalistic urbanistic projects, attempts to offer an explanation of how the practises of users themselves create urban fragments in the city by how they pick certain parts of the city and discard the rest. Through this, ‘the space is transformed into enlarged singularities and separate islands’.

Following this argument, it may seem that fragmentation indeed offers a choice for the user. But when analysed from the perspective of a rapidly expanding metropolis in a developing country, this choice infact restricts the poorest of stakeholders to being relegated to a small part of the space.

Theorists such as Jencks (1986) while attempting to synthesize an understanding of post modernism, also refer to its consequence on creating ‘piecemeal’ as opposed to ‘holistic’. This reference assumes the term ‘fragment’ in post-modernism discourses by Hassan (2000). However for both these theorists, the ‘fragment’ as opposed to the ‘holisitc’ is a positive phenomenon.

Even though Harvey (1990) agrees to the relation of fragmentation to post-modernism, he considers it a negative spatial phenomenon. He argues that ‘the acceptance of fragmentation and discontinuity’ is perhaps ‘the most startling fact of post modernism.’ He elaborates that this has also manifested itself in political, social and economic realms resulting in ‘fragmented politics of divergent special and regional interest groups’.

Similarly, when the interpretation of fragmentation is used to describe ‘dividing’, ‘splintering’ or ‘partitioning’ of metropolis (Fainstein et al., 1992; Graham & Marvin, 2001; Marcuse & Kempen, 2002), it is understood as a negative spatial phenomenon.

Through this lens, it can be seen to aggravate social disparities, creating ghettos and gated communities, car-dependent cities and privatised public spaces. These consequences occur through the impact of globalization, neo-liberal policies and laissez-faire planning.

This phenomenon was dissected with respect to American cities, particularly Los Angeles by Fogelson (1967) and later, Teaford, 1993) who used the term ‘Los Angelesisation’ and Jacobs (2002, p.18) who referred to the continuously expanding processes of spatial, social and cultural fragmentation that shaped ‘many western and especially American metropolitan areas.’
This model of city expansion was adopted by many metropolises of developing countries, particularly in Asia as an ideal model.

The problem of this model was that it extolled the virtues of ‘large scale urban projects.’ These prioritized ‘the design of the fragment’. (Aguilar, 2005). ‘Large scale urban projects today define the building of the metropolitan city’. (Borja & Castells, 1997, p. 162) In the case of Barcelona, such large - scale urban projects which culminated in the Olympic experience have been considered to be part of ‘strategic plans’ which provided spatial coherence backed by ‘conscious governance’. (Marshall, 2004, p.22) But subsequent paler emulations of this model has failed to produce the same coherence.

The issue with globalization is not with its promotion of ‘integration of societies and economies’ but with its subsequent de - regulation or corporate self - regulation, privatization and free - market orthodoxy,(Klein, 2002) which is responsible for world - wide inequality and environmental degradation (Burgess et al, 1997; George, 1999; Harvey, 2005). The resulting urban transformation are rendering a fragmented form and structure even to cities that are not global cities but those that aspire to become global cities.

The term fragmentation with respect to globalization theories is antonymous to integration. This means that increasing integration of the ‘globalized world’ is accompanied by a parallel process of fragmentation by the ‘non - globalized world’, transcending multiple scales. (Kozak, 2008). This leads to ‘imbalances in life chances between the world’s rich and marginalized poor’ (Hall, 2006)

Subsequent chapters situate these recurring phenomenon through the lens of globalization and fragmentation in the context of Delhi.
0.1 WHAT KIND OF PROJECT?

The conceptualization of this thesis project takes root from the possibilities of the ‘Horizontal Metropolis’ (Vigano, 2006, 2011).

The above elaboration of the same is situated in the peri-urban region between Delhi and Gurgaon; wherein the rural villages surrounded by productive landscape represents a case of isotropy, wherein isotropy has been used to refer to a dispersed territory, ‘an ancient landscape of evenly scattered development alongside roads and waterways’ (Secchi, Vigano, 2006) when referring to The Citta Diffusa.

In Delhi, this isotropy is subjected to fragmentation and structural imbalance when current planning policies promote a model of city expansion which is an archetypal sprawl.

This has to be scrutinized in the context of a continuous proposal of car-based infrastructures connecting cores; where development means townships and shopping malls. There are also ambivalent voices addressing severe water shortages, rising pollution levels and disappearing agricultural land, green spaces and biodiversity.

In light of such complexities, what might be the possibilities for an alternate model for the fragmented peri-urban region; one that hinges on multiple scales and multi-functionality?

In the case, the porosity of existing open spaces, public transport needs, employment, basic amenities and governance coerce to promote a situation of self-sustenance, spatial quality and empowerment of local population. This entails conceiving new ‘potential places of urbanity’. (Vigano, 2011)

0.2 URBANIZATION: A GLOBAL SOUTH PERSPECTIVE

The unprecedented urbanization is witnessed more in the global south particularly in Asia and Africa. The causalities are extensive but uneven processes of growth and expansion. This is in contrast to the early urbanized developed countries which are witnessing a slow and in some cases reverse population growth. In the case of Asia, most countries built up on the colonial and post-colonial preferential treatments that certain cities received; using macro-economic policies to reinforce the base settlement system. (Dewar, Todes and Watson, 1986)

The exigencies encountered due to the current pattern of urbanization, thus were a direct by-product of the economic and sectorial policies. These did not attempt to deal directly with the urban development policies or opportunities. This was expounded by the gap between spatial and economic policies (Rondinelli, 1991).

In recent decades, the patterns of urbanization engendered socio-spatial fragmentation and income disparities. The influence of globalization can also be considered a major causality of the imbalanced socio-spatial restructuring. It has resulted in a potential for economic volatility and raises challenges for the sustainability of existing urban forms. (McGee, 2009) This reaffirms the critique regarding the ‘problematic implementation of the western construct of the global city model’ – in the countries of the global south with limited resources. (Robinson, 2002, 2006; Lemanski, 2007)

In such cases, a major chunk of the country’s finances is allocated to emulation of global trends and beautification of the urban cores. It results in ‘policies of forgetting’ marginalized groups as was described in the case of Delhi (Fernandes, 2004).

0.3 NATIONAL SCALE: GLOBAL ASPIRATIONS

We are inhabiting an era when more than half of the world’s population live in urbanized areas. This transition is particularly evident in India, contrary to the Gandhian ideology of the self-sufficiency of the village on which the country’s independence was founded on. (Sudjic, 2007) India’s current world status as a developing country with a burgeoning urban economy and its magnitude of population makes it an ideal platform to discuss the future of the current models of urbanization.

Out of its 1.1 billion population, over 300 million inhabitants are stretching the tactile boundaries of metropolitan areas. The country is witnessing a rural to urban transition with remarkable speed and no strategic tools to initiate a moderate urbanization instead of the formation of conurbations as is happening now.

Besides being the political capital of India, Delhi is also the economic, cultural and commercial centre and a nodal point in international and national trade. Because of already established national significance, Delhi now is aspiring to be among this hierarchical network of global cities.
This ambition is evident from the master plan for Delhi 2021. ‘Vision – 2021 is to make Delhi a global metropolis and a world class city’. (DDA, 2007: Introduction) Even though it is evident that the city is far from meeting the global city criteria as framed by Friedman (1986) and Sassen (1991, 1994), it has be described as a ‘globalizing city’ (Sandhu and Sandhu, 2007) and ‘city in transition’ (Shaw, 2007).

The opportunities presented by the city intensifies migration from adjoining semi-urban and rural areas. Most of the policies that have determined Delhi’s growth trajectory has been a result of the dialectic relationship between neo-liberalization reforms initiated in the 1991 and globalization in Indian cities. The global scene influenced the reforms and dictated the arrival of a new urban scene. In exchange, the implementation of neo-liberal reforms enabled the integration of the bigger Indian metropolises into the larger global movement. (Dupont, 2011)

This was accompanied by policies of decentralization, deregulation and privatization. This saw the insurges of modern infrastructure, high-end residential complexes and shopping malls feeding the consumerist ideologies adopted by the increasing middle class.

On the negative side, this trend saw the relegation of ‘undesirable elements’ and urban poor from the main city area to the peripheries of the city. This is an indication of the global–local conflicts which resulted in further fragmentation and socio-spatial inequalities. (Bannerjee – Guha, 2002a, 2002b; Mahadevia and Narayanan, 2008)

Figure on the right shows urbanization process of the city through time
1. DELHI AS A FRAGMENTED CITY REGION

Perspectives and Conflicts: City, Region, Peri - Urban Region

This chapter entails the theme of the thesis. The context of Delhi in the region and the factors which contribute to the multi-scalar fragmentation are discussed. The fragmentation in the peri-urban area and the problems faced by this area are elaborated through the lens of existing trends and planning framework. The trends, conflicts and urgencies which will lead to an escalation of the fragmentation gives an indication of the main research.
Delhi, the capital of India is a prime example of these rapid processes of peri-urbanization in India because of its status as the political, economic and cultural nerve center along with its global aspirations.

Delhi is the sixth fastest growing city in the world at the rate of 39 residents per hour. With a current population of 18.2 million. Its population is expected to grow to 30 million by the year 2050.

However, such projections about the urbanized areas and urban populations may not have face value as it used to because of the pressing phenomenon of the formation of conurbations which are beyond urban – rural dichotomies. When a clear distinction is made between urban and rural, it ‘divides the indivisible’, thus ignoring the effects of urbanization on spaces that are classified as rural based on criteria adopted such as population, size and administrative classification among others (Brenner and Schmid, 2013). ‘A simple division of urban and rural may have the tendency to obscure significant spatial features’ (Chapwan and Wanniali, 1981).

This phenomenon of conurbations has been acknowledged world over. Various terms have been used to define these spaces which are neither urban nor rural.

These are the academic designations that have been given to such in-between spaces over the years:


Henceforth the term ‘peri – urban’ used by Dupont (1997) who has written extensively on such spatial conditions in India and specifically in Delhi will be used in this thesis to refer to spaces that are neither urban nor rural. According to her hypotheses, ‘processes of peri-urbanization result in the formation of “mixed spaces”, midway between urban centers and rural spaces – transitory spaces subject to rapid and multiple transformations’.

References to ‘desakota’ formulated by McGee (2004) in reference to peri-urbanization in the metropolises of Asia will also be used to study the phenomenon in a regional context.

Delhi’s fragmentation though, is not a recent phenomenon that can be attributed to rapid urbanization alone. Its urban structure has been witness to various stages of encroachment. This was pre-defined by the city’s historic transmutation from one specific urban morphology to another. The seven cities of Delhi founded in the Mughal period, the planned city of the British colonial empire and further the modern Delhi’s subsequent urbanization have not followed a systematic spatial sequence.

This has meant that Delhi has very old and highly complex urban forms which co-exist mostly chaotically with the modern city fabric. This fragmentation is evident from the dominant morphological filaments which now has assumed forms of generic architecture such as high-rise apartments, townships and shopping complexes under the influence of globalization. (Dupont, 2011)

It is a city that makes it difficult to be analyzed in its totalitarian state, because of this complexity and lack of existing paradigms in urban discourses. Historically
or spatially, there is no single reference point or a defining system as can be said of cities like Chandigarh and Brasilia.

This fragmentation is evident in the city’s urban confrontations at all scales. In the regional scale because of the formation of conurbations and satellite cities, there is a neglect of the spaces that do not benefit from regional connections and urban governance.

At the city scale, factors of economy, mobility, governance and traditional factors such as residential segregation based on caste have all in one way or other exacerbated the fragmentation. This has a telling effect on the multi-directional sprawl that the city has seen in the last few decades. It has led to a degeneration of ecosystems, fragmentation of green and open spaces, under-utilization of natural water sources which are mostly polluted and an expansion which neglects natural topography.

Historically, the lack of integration between the historic and modern parts decided a spatial fragmentation which exists even today. The planned British capital, New Delhi is ‘planned like a spread garden city with a geometric plan, large roads and vast dimensions’ (Dupont, 2004). The last of the ancient cities; the walled city of Shahjahanabad has a ‘intricate web of narrow streets and densely packed buildings’ (Evenson, 1989, p.148)

At the peri-urban scale, the conflicts due to fragmentation are at a maximum. On the one hand, peri-urbanization sees the ‘formation of mixed spaces, midway between urban centers and rural spaces’ (Dupont, 2007). It is the peripheries of the metropolises where the transition spaces assume diverse and conflicting uses; a result of the processes that happen because of the political and societal visions that feed into the image of the city core.
It refers to trends observed by Harvey (1989) in advanced capitalist countries and now emulated by emerging economies in the Global South. The ‘creation of an attractive urban imagery’ dominates over the ‘substance of economic and social problems’ (Harvey, 1989).

Inadvertently, problems associated with peri-urbanization such as the need to accommodate people of diverse income groups and diverse lifestyles, maintenance of green belts and development of industrial activities are at conflict with each other.

A lack of recognition of these spaces as ‘specific entities of planning’ (Dupont, 2007) means the uncertainties, market speculations and endogenous forces dominate over attempts to systematize urban growth at the fringes. Hence, this gives rise to fragmented spaces as a result of conflicting visions and agendas of various actors. The needs and roles of the passive stakeholders, particularly the migrants and residents without tenure security are ignored in favor of private developer entities.

This thesis tries to attend to the spatial incoherence of the urban pieces at the peri-urban scale between the city cores of Delhi and Gurgaon, symbolized at large by various conflicts and a lack of integration between planning and design in the Delhi planning context. Urban villages which are a symptom of the fragmentation in the peri-urban areas form part of the structural ambiguity.

**DELHI AS A FRAGMENTED CITY REGION**
However, in the past two decades, these peripheral areas have increased levels of growth rate with insufficient infrastructure to support the increase in population.

The density of population per hectare as per 1991 is the lowest in the peripheral areas.

Source: Adapted from V. Dupont (IRD); Census of India, District Census Handbook, Delhi: 1981 & 1991.
Delhi’s current planning system is heavily oriented to its global aspirations. The collaboration of the National and provincial governments, Delhi Development Authority and private developers has seen an unprecedented development designed to favour the multi-national corporate companies, a modernistic car-based developments with numerous flyovers criss-crossing the landscape. This development inadvertently caters to the dominant actors; those in-charge of development and those looking for profit.

In the passive actor category, the high and middle income groups are seldom affected by these developments. Negative trends related to globally oriented urbanization include forced evictions, slum resettlement to peripheries away from jobs and accessibility, a lack of basic provisions such as drinking water, sewage systems, lack of social infrastructure such as schools and hospitals and lack of accessible public transport since all the investments are aiding a ‘concentration of spectacle and image rather than on the substance of economic and social problems’ (Harvey, 1989: 16). This affects the socially marginalised lower income groups, migrants and residents without tenure security.

The resultant spatial transformation which creates privatized exclusionary spaces and networks such as open spaces with restricted access, non-equity based public transport and lack of basic amenities, social and physical infrastructure thus excludes them from their needs thereby exacerbating socio-spatial fragmentation. A conflict of global opportunities with the local need and roles are symbolised by fragmentation with regard to existing mobility systems, trade and commerce gravitation points, planning policies, green and open spaces.

In the current zonal based development planning approach, there does not seem to be a scope of integrating the local needs. It does not subscribe to policies which promote a development based on equity.

Delhi, was, in its initial stages of development created by acquisition of villages. The Land Acquisition Act of 1894, formulated during the British rule was used as a primary device for creating space for new developments. This was done by acquiring farmlands and the villages for urbanization and expansion of the city since these villages were the only way to accommodate the mass migration of people into the city.

According to the recent master plans, to protect the traditional villages from being taken over by urbanization, it was decided that the villages itself will be protected by ‘Lal Dora’. The ‘Lal Dora’ refers to a red line which in earlier times used to refer to a way of dividing the agricultural land from that of habitation. In the present context, this Lal Dora would protect the villages and hence its traditional heritage and spatial structure from being urbanised, only the farmlands will be taken over.

This transfer of agricultural land into that for urbanization involves many actors. The DDA (Delhi Development Authority) is responsible for acquiring and selling the plots required for urbanization. The villagers owning the land would be given compensation for this. The villages that were rural until then become ‘urbanised’ as a result of acquisition of the farmlands around them and would henceforth be referred to as the oxymoronic term ‘urban villages’. They are then transferred to the
jurisdiction of the MDC (Municipal Development Authority) and are theoretically supposed to be entitled to the same infrastructural facilities as the city according to the master plans.

The reality however is far from this. The actual procedure of transfer takes from 15 to 20 years. During this period, maximum market speculation takes place. Since the villages are not under any jurisdiction during this period, the villagers can build as they want. The shift from the agrarian economy and loss of their farmlands is used to advantage by the villagers who densify existing structures and sell or rent it at a lower price than the surrounding urban developments. Sometimes, urban structures are built just inches away from heritage structures. The villages thus are subject to rampant commercialization which are not always legal and are mostly inhabited by lower economic classes. Most of them also do not also have proper facilities of water supply, sewage, public transport, physical and social infrastructures. Though they enjoy more tenure security in comparison to the unauthorised colonies and do not have to fear demolition because of the Lal Dora, the spatial quality is the same as unauthorised colonies, highly dense and without any facilities. Such newly ‘urbanised’ villages have nearly doubled in the last decade.

The predicted migration from the surrounding areas means that this phenomenon will continue and in the future, Delhi would tend to have islands of degenerated spatial quality facing social and spatial exclusion in a sea of urbanization.

The Act was also criticised because the DDA could not keep up with the demand for land. This escalated property prices. There was also dissatisfaction from land owners related to compensation decided by DDA. This led to disputes and litigations which meant that the land remained vacant until the dispute is settled.

During this period, it is subject to encroachment and illegal settlements.

A new devised Act, called the Land Pooling Act of 2013 was passed to ensure a more transparent and participatory planning approach. Instead of acquisition of farm-lands, land owners or private developers can individually or by forming consortiums, hereby called the Developer Entity, pool their land to a Land Pooling Agency which is a land bank. The DDA uses a percentage of the land for developing public amenities, physical and social infrastructure. The rest of the land is return as a percentage deducted from the land that was pooled within a five kilometre radius of the same. The Developer Entity can then choose to develop the land or sell it to private developers. The constraints of the act are that a percentage of the land should be developed for LIG and EWS housing which will then be consol-

idated by DDA for distribution.

In many ways, the act is significantly nuanced than the previous act. It dissolves customer dissatisfaction and the short supply of land. But it is heavily in favour of private developers and does not integrate the needs of the socially marginalized. In consequence, the spatial transformation that the new act may entail may not be any different from what it has been until now.

When these trends are dissected in a peri – urban area, the uncertainties are manifold because of the diversity of actors involved, formal and informal spatial morphologies and the lack of urban governance. This contributes to a maximum case of socio – spatial fragmentation. The socially marginalized passive actors inhabit the peri – urban areas with no access to equity based infrastructure.
PLANNING APPROACH AND ACTOR ANALYSIS
(BASED ON LAND ACQUISITION ACT, 1894)

**PLANNING APPROACH AND ACTOR ANALYSIS**

**ACTIVE ACTORS**
- Master Plan
- Zonal Devt Plan
- Layout Plan
- Local Area Plan
- Delhi Development Authority
- National & Provincial Government Authority
- Land & building Department
- Municipal Corporation of Delhi
- Private Developers
- Co-operative Group Housing Society

**PASSIVE ACTORS**
- DDA
- Govt Authority
- Land & bldg dept
- Private developers
- MCD
- Housing society
- Residents with tenure
- Land owners
- Site users
- Migrants

**LIMITS OF THE APPROACH**
- Does not solve issue of fragmentation
- Satisfies only regional goals and not local needs
- Creates exclusionary privatized spaces & networks
- Inadequate supply of land & rise in land prices
- Dissatisfaction due to low compensation
- Encroachment on land under litigation

**LAND USE CHANGE**
- Farmlands
- Rural villages
- Urban development
- Urban villages

**SPATIAL TRANSFORMATION DUE TO LAND USE CHANGE**

**Farmlands from farmers for urban development**
- Acquires
- Approves
- Formulates

**Basic Amenities**
- Basic Amenities like electricity, water supply, sewage disposal, roads
- Approves
- Develops

**Division of plots for sale**
- Approves
- Divides

**Sells plots to private developers**
- Sells
- Approves

**Based on guidelines in planning document**
- Regulates
- Approves

**Construction based on approved regulations**
- Selects
- Maintains

**Unformulated until now**
- Local Area Plan

**Farmlands**
- Approves

**Farmlands from farmers for urban development**
- Approves

**Basic Amenities**
- Approves

**Division of plots for sale**
- Approves

**Sells plots to private developers**
- Approves

**Based on guidelines in planning document**
- Approves

**Construction based on approved regulations**
- Approves

**Unformulated until now**
- Local Area Plan

**Farmlands**
- Approves
PLANNING APPROACH AND ACTOR ANALYSIS (BASED ON LAND POOLING ACT, 2013)

- Formulates land banks to which owners can pool land
- Consolidates land banks
- Approves developers

- Develops remaining land to developer entity
- Returns construction based on approved regulations
- Maintains (not formulated until now)

LIMITS OF THE APPROACH
- Does not solve issue of fragmentation
- Creates exclusionary privatized spaces & networks
- Spatial consequence remains the same
- Equity based infrastructure and public open space is compromised

ACTIVE ACTORS
- DDA
- Govt Authority
- Land pooling agency
- Developer Entity

PASSIVE ACTORS
- Residents with tenure
- Site users
- Migrants

SPATIAL TRANSFORMATION DUE TO LAND USE CHANGE

Urban development
- Farmlands
- Rural villages
- Urban villages

Govt Authority
- Approves Master Plan
- Approves Zonal Devt Plan

Local Area Plan
- Not formulated until now

LAND POOLING AGENCY
- Approves Percentage of land for public amenities and infrastructure
- Develops Percentage of residential for LIG, EWS as per regulation
- Sells/Develops for MIG, HIG, Commercial purposes

DEVELOPER ENTITY
- (Individuals/groups of individuals/private developers)
- Formulates consortia to pool land
- Approves Percentage of land for public amenities and infrastructure
- Sells/Develops for MIG, HIG, Commercial purposes
- Returns construction based on approved regulations

MUNICIPAL CORPORATION OF DELHI
- Maintains

NATIONAL & PROVINCIAL GOVERNMENT AUTHORITY
- Approves Master Plan
- Approves Zonal Devt Plan

DDA
- Approves Layout Plan

MCD
- Formulates consortia to pool land
- Approves Percentage of land for public amenities and infrastructure
- Sells/Develops for MIG, HIG, Commercial purposes
- Returns construction based on approved regulations

P.L. (PLANNING APPROACH AND ACTOR ANALYSIS (BASED ON LAND POOLING ACT, 2013))

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The conurbations have resulted in the formation of peri-urban spaces which face spatial and social fragmentation; devoid of physical and social infrastructure that binds the rest of the city to the larger region. The peri-urban spaces face structural ambiguity because of this fragmentation. The urban villages which are located on the peripheries between the main city and the satellite cities are a symptom of this ambiguity. The persisting uncertainties and negative trends in the peri-urban space is an outcome of the planning policies that were applied at various points in history as a response to the planning problems that were most pressing then. So the issue is further augmented by a lack of planning strategy catering to their specificities.

The conurbations have resulted in the formation of peri-urban spaces which face spatial and social fragmentation; devoid of physical and social infrastructure that binds the rest of the city to the larger region. The peri-urban spaces face structural ambiguity because of this fragmentation. The urban villages which are located on the peripheries between the main city and the satellite cities are a symptom of this ambiguity. The persisting uncertainties and negative trends in the peri-urban space is an outcome of the planning policies that were applied at various points in history as a response to the planning problems that were most pressing then. So the issue is further augmented by a lack of planning strategy catering to their specificities.

The resultant up scaling in production, trade and entertainment does not fit in the existing fine grain that until now defined the morphological pattern. So there is a proliferation of programs which are lying next to each other but which are disconnected to each other. Public spaces are transforming to controlled spaces which in most cases are accessible to the rich. The city’s relationship with the surrounding landscape is frayed as a result.

Current trends in zonal development plans has resulted in an induction of car-dependent urbanism in the peri-urban area. The infrastructure which is meant to serve the area is crudely designed with no relation to the context. Public transport has lost competition to the private car.

There is a loss in economic base because of the vanishing agricultural role. This is compounded by changes in lifestyles and traditional productive activities because of ‘developmentalist’ visions which pour investment to city cores (McGee, 2010).

All the systems are tending to a state of individualisation which affects the marginalised and disadvantaged social groups. There is a need to re-qualify the space for interaction between the various scales to counter the existing fragmentation.
Global - Local
Conflict due to Globalisation
Sprawl
Migration

Gap in Spatial and economic policies
Outdated planning policies
Lack of monitoring systems
Car-based transport
Discontinuity between historic and modern filaments
Investment in city cores

Socio-Spatial Inequalities
Spatial disorders
Exclusion
Structurally ambiguous spaces
Degraded ecosystems
Lack of open space
Academic relevance: India is a country which still has a rural majority even though there is an obvious shift to urban and metropolitan growth. Delhi in particular, is expanding very rapidly. The urbanized part of Delhi has figured in many academic discourses. However much less has been discussed about the possible strategic confrontations between urban and rural spaces that can benefit the city’s aspirations to be an attractive city. It also calls for a renewal in current spatial planning policies that are taken for granted.

Social relevance: The phenomenon of ambiguous peri-urban spaces also encompasses the debate on exclusion and inclusion. The planning processes are tilted in favor of market demands and not to marginalized social groups. The research will attempt to understand how the existing governance structure and the involvement of stakeholders may be refined to promote a balanced spatial justice by making the peri-urban spaces a part of the larger network. Further, it will attempt on analyzing how prevalent heritage and cultural legacies may be evoked to lend character and spatial quality and thus alleviate socio-spatial fragmentation.

RELEVANCE

AIM

Hence, the objective of the thesis is to examine the issue of socio-spatial fragmentation at a multi-scalar context, address the conflicts which contribute to fragmentation and propose an integrated spatial vision for the progressive integration of the peri-urban space into the regional and city network. Integrated design principles related to mobility, production, open space and urban form would guide the spatial strategy.

Since one of the issues of fragmentation also relates to a conflict between historical and modern filaments leading to a loss of heritage, the inherent spatial strengths from history would be used to generate urban design tools as a contemporary interpretation of historical rationalities.

On a localised scale, the strategy would be shown as a demonstration project of how the principles can be integrated to address local needs and roles.
As specified in the problem statement, the region faces multi-scalar fragmentation. The urban-rural dichotomy is evident and the role of the urban villages remain unclear which further seals the fate of the rest of the rural villages in the region. This brings the discussion to the main research question.

**MAIN RESEARCH QUESTION**

How can the role of the peri-urban spaces in Delhi be redefined as a middle ground which is part of a larger networked National Capital Region? What structures and values have to be reconfigured to enable the peri-urban space to benefit from the proximity to urban cores and is able to deal with the existing economical, social and environmental challenges and endogenous potentials?

Considering the time constraint, I will be selecting one sub-region for detailed analysis; that of the space between the urbanized core of Delhi and the satellite city of Gurgaon.

The following sub-research questions will enable to pinpoint the core aspects on how to deal with the problem. Each question specifically addresses the theoretical framework, analytical framework, visions, strategies, design and reflection in that order.

**RESEARCH QUESTIONS**

As specified in the problem statement, the region faces multi-scalar fragmentation. The urban-rural dichotomy is evident and the role of the urban villages remain unclear which further seals the fate of the rest of the rural villages in the region. This brings the discussion to the main research question.

**SUB - RESEARCH QUESTIONS**

1. What are the existing urban discourses on current models of urbanization and urban-rural dichotomies?
2. What are the political, social and economic parameters that escalate multi-scalar fragmentation?
3. What are the existing governance structures, planning bodies and actors, processes and master plans responsible for the urban development in the region?
4. What are the spatial and mobility parameters that would contribute to a networked urban-rural region?
5. How can permeability and porosity be used to alleviate the fragmentation of the peri-urban space?
6. What kind of planning policies can change the existing spatial condition of the urban villages?
7. What are the interventions that enable the peri-urban space to be part of the regional network which does not cater to local needs?
8. As a design outcome, what kind of symbolic elements can be evoked from the historic urban forms of Delhi to lend spatial character to the urban villages?
9. What regional impact can the redefined role of the peri-urban space have?
An integrated planning and design approach for regions that are not urban nor rural would be used for the research. Delhi’s master plan documents are mostly zoning related and they do not employ a long term and strategic approach. They also do not have policies which elaborate on how to deal with the peri urban spaces. I would like to understand how strategic long term planning can help achieve a balanced urban hierarchy without losing the traditional heritage and spatial qualities that the areas may possess.

Methods: Different methods have been used in combination with each other for the research. First, a theoretical framework is used to understand studies of urban rural regions done in different parts of the world. The current policies and processes in Delhi was understood from the Master Plan Development documents. Field work is done by photography to understand the morphology of the urban villages in relation to the surrounding urbanization. Mapping at different scales was done to understand over-lapping, conflicts, existing patterns and infrastructure.

Since the study concerns rural patterns, informal interviews with residents and site users were more insightful than formal interviews in this case. So interviews with inhabitants was done to understand the conditions, landownership status, commuting patterns and economic processes. Previous case studies of peri urban spaces has been used as a reference point.

At the intervention phase, a case study has been selected to understand the scope of strategic intervention through integrated design principles and integrated spatial vision.

The actual location of research is a sub region between the urban core of Delhi and Gurgaon, the satellite town. This patch is evidently the next potential patch to undergo the conurbation process because of its geographical location. This patch contains urban villages, villages which are on transition from rural to urban and rural villages. The presence of different morphologies in close proximity and actors with diverse lifestyles and interests made it interesting to understand the changes that shaped the area.

Critical spatial analysis using various criteria has been used to underpin the issue of multi scalar fragmentation. The potential of peri urban space as part of a larger network is explored. If the peri urban spaces can be recognized as a middle ground; instead of a non identity space waiting to be usurped by urbanization. The end product will therefore be an integrated design principles and integrated spatial vision as this lack of synthesis between planning and design also contributes to the non implementation of urban proposals besides the resources and the political decisions. A demonstration intervention is used as a design exercise to understand the use of proposed concepts.

Urban Sprawl, Urban rural diffusion, Multi Scalar fragmentation, Conurbation, Urban village, Peri Urban, Metropolitan Urban region, Green Infrastructure, Delhi, India

Urbanism, Metropolitan spatial design, Regional planning, Strategic design
## Multi-scalar Fragmentation: Methodology

### 0. General Introduction

**Structure**
- Problem Field
- Problem Statement
- Relevance
- Aim
- Research Question
- Causality Chart

**Peri-urban Space as a Resource**

### 1. Delhi as a Fragmented City Region

- **Global Opportunities vs. Local Needs & Roles**
  - Multi-national companies vs. Traditional production systems
  - Car-based transport vs. Public transport
  - Active actors vs. Passive actors

- **Historic Context**
  - Pre 1911 - 1911-47 - 1980s - 2000s

- **Dynamic Context**
  - 1980s - 2000s

- **System Typologies**
  - Production
  - Mobility

### 2. Delhi as a Liberalized Economy

- **Global Opportunities vs. Local Needs & Roles**
  - Multi-national companies vs. Traditional production systems
  - Car-based transport vs. Public transport
  - Active actors vs. Passive actors

- **Historic Context**
  - Pre 1911 - 1911-47 - 1980s - 2000s

- **Dynamic Context**
  - 1980s - 2000s

- **System Typologies**
  - Production
  - Mobility

### 3. Delhi as an Excluded Peri-Urban Space

- **Global Opportunities vs. Local Needs & Roles**
  - Multi-national companies vs. Traditional production systems
  - Car-based transport vs. Public transport
  - Active actors vs. Passive actors

- **Historic Context**
  - Pre 1911 - 1911-47 - 1980s - 2000s

- **Dynamic Context**
  - 1980s - 2000s

- **System Typologies**
  - Production
  - Mobility

### 4. Delhi as a Mosaic City

- **Global Opportunities vs. Local Needs & Roles**
  - Multi-national companies vs. Traditional production systems
  - Car-based transport vs. Public transport
  - Active actors vs. Passive actors

- **Historic Context**
  - Pre 1911 - 1911-47 - 1980s - 2000s

- **Dynamic Context**
  - 1980s - 2000s

- **System Typologies**
  - Production
  - Mobility

### 5. Peri-Urban Space as a Resource

- **Global Opportunities vs. Local Needs & Roles**
  - Multi-national companies vs. Traditional production systems
  - Car-based transport vs. Public transport
  - Active actors vs. Passive actors

- **Historic Context**
  - Pre 1911 - 1911-47 - 1980s - 2000s

- **Dynamic Context**
  - 1980s - 2000s

- **System Typologies**
  - Production
  - Mobility

### 6. Demonstration Intervention

**Criteria**
- Economy
- Mobility
- Governance system
- Actors
- Historical background
- Urban regional growth
- Urban regional growth

**Sub-Criteria**
- CBDs
- Road, Rail, Metro
- Governance, Boundaries
- Land use plans, Slums
- Multi-actor analysis
- Density, Growth rate, Caste systems, Historical growth, City expansion, NCR, Regional expansion
- Built area, Green, water, topography

### 7. Planning & Design Recommendations

**Chapters**
- Actors in peri-urban

**Generation of urban design tools by contemporary interpretation of historical rationalities**

**Integrated design principles**

**Integrated spatial vision**
2. DELHI AS A LIBERALIZED ECONOMY
Multi - Scalar Analysis
Region, City, Peri - Urban Region

Much of the recent urban development in the city has been accelerated by a liberalization of the economy in the early 1990s. This chapter entails to show how that led to a process of fragmentation in the economy, mobility, production systems, governance, diverse stakeholders, open space and urban form through a multi - scalar analysis. The conditions that led to this saw a heavy investment in the city cores with a neglect of the peri - urban areas. The fragmentation that resulted from this process affected all scales from the regional to the local.
TRADE AND COMMERCE

The trade and commerce nodes, are concentrated in the city core of Delhi and in the satellite cities of Gurgaon and Noida. This reflects the global city aspirations of the city wherein there is a greater investment in the city cores neglecting the rest of the city.

The industrial activities are concentrated along the regional infrastructure. Initially they used to be planned in the periphery of the city. When the city expanded, they became engulfed in the urbanized areas.

There are hardly any nodes in the peri-urban area except for minor localised commercial facilities catering to local needs. This in-spite of the fact that much of the productive agricultural landscape of the city is situated in the peri-urban area.

The economic fragmentation has to be countered for retaining the agricultural values.

By benefiting from the proximity to the urban cores, agricultural production can be given new dimensions and new functions to cater to multi-scalar needs.

Map on the right shows location of trade and commerce facilities in the city

Source: Adapted based on data from Delhi Master Plan 2021; Base Map from www.geofabrik.de, www.openstreetmap.org
MOBILITY - ROAD

‘Colonial New Delhi was ‘planned by and essentially for, the automobile owning class’, which was continued in the post - independence urban planning’ (Evenson, 1989:188).

‘The expansion of the city beyond the administrative limits followed the main roads and railway lines. This connected the core area of Delhi with the fast - growing peripheral towns resulting in a poly - nodal metropolitan structure’ (Dupont, 2011).

‘Mobility has reinforced the current urban restructuring linked to the effects of globalization. This has seen the emergence of a new spatial order (Marcuse & Vankempen, 2000) and a resulting socio - spatial disorder’ (Bannerjee, 2002b).

Current mobility is oriented preferentially to global integration and neglects local integration. The infrastructure thus fragments the city and acts as barrier to cohesive development. This can be observed from the contrast of the number of motorway links in the city cores of Delhi and Gurgaon and the peri - urban areas.

To counter the fragmentation that the big infrastructure has caused, there is a need for inter - modal isotropic mobility restructuring to serve all parts of the city.

Map on the right shows the existing hierarchy of roads
‘The iconic pull of Delhi metro was used as a symbol of progress to stake claims as a world class city’ (Siemiatycki, 2006.)

‘The secondary concern for its function as an efficient means of mass transit, exemplifies ‘the triumph of image over substance’ (Harvey, 1989; 13)

‘The recent development in Delhi echoes trends first evidenced by Harvey (1989) in advanced capitalist countries and now in emerging economies. This involves entrepreneurialism in urban governance for the ‘creation of an attractive urban imagery (ibid.: 13) for the speculative construction of place in the context of competitiveness among cities’ (Dupont, 2011).

The functional inefficiency of metro is evident from its concentration in city cores.

It serves global aspirations rather than integration of the city.

It does not serve the peri-urban areas except for parts of the commercialized south east area.

The overlapping of railway and metro indicates a lack of inter-modal hubs.

To counter the fragmentation that the distribution of public transport has caused, there is a need for inter-modal, isotropic mobility restructuring to serve all parts of the city.

Map on the right shows existing metro and rail infrastructure

Source: Adapted based on data from www.geofabrik.de, www.openstreetmap.org
GOVERNANCE (Lack of Urban Local Governance)

The hierarchy of governance indicates the presence of urban governance only at the higher levels. There is an absence of local urban bodies.

This could be one of the reasons for a lack of responsibilities for shared resources such as water and open spaces.

This top-down decision making process neglects the needs of local actors and a participatory democratic process with regard to spatial decisions.

To counter existing fragmentation in governance, there is a need to promote urban governance at the local level to ensure equity and participation of passive stakeholders.

Figure on the right shows the hierarchy in governance system in the city

Source: Adapted from Urban Age, LSE, base map from www.geofabrik.de, www.openstreetmap.org
‘Politico-administrative decentralisation reforms of the 1990s entailed a transfer of responsibilities to the municipalities to promote participatory democracy’ (Mahadevia, 2003).

‘This was accompanied by the 74th constitutional amendment which recognised transitional areas and granting of civic status to them as ‘nagar panchayats’ or town panchayats. However, the central act has left it to the different states to create this new category. So many peri-urban areas remain outside the legal jurisdiction of any urban local body’ (Shaw, 2005, p. 31).

This ambiguity in governance is evident in Delhi. It is sub-divided into 9 districts with three sub-divisions each which are further sub-divided into wards. (as shown on page 55) Each sub-division is governed by a sub-divisional magistrate.

Further it has a division of 16 zones of which zones from A to H are urbanised areas (as shown on page 56) which are under the jurisdiction of MCD (Municipal Corporation of Delhi).

The areas under MCD receive greater attention than those that are not; that is the peri-urban areas, in the absence of urban local bodies.

To counter fragmentation in governance, strategic planning should involve participatory processes for negotiation and implementation.

Map on the right shows the existing districts and wards in the city

Source: Adapted from State Map Series, First Edition 2012
URBAN GOVERNANCE
The difference in administrative boundaries and urban governance boundaries is evident from the two figures. There is a lack of horizontal and vertical integration of governance.

To ensure that spatial decisions have a more participatory approach and a responsibility for shared governance, new modes of localised urban governance should be explored. This can even involve modes of soft governance by forming networks of experts, NGOs and volunteers to create awareness of the need for responsibility.

Map on the right shows area having urban governance in the city

'Although on the one hand urban land-use and land development was controlled by the administration, and new constructions submitted to numerous regulations, on the other hand, a large part of the urbanization process has taken place in an unplanned and informal way’ (Dupont, 2004).
LAND USE PLANS; TRENDS AND TENDENCIES

The provisions in MPD 2021 are in favour of private developers. Single family villas called farmhouses have been renamed as low density developments and their construction has been permitted on the green belt.

This indicates that the ensuing trend of urbanization will have all the negative effects of a lack of long term strategy.

A shift from the current model of reactive planning to pro-active planning which is strategic and long term is needed to change negative effects of the current pattern of urbanization.

Maps’ source: delhi-masterplan.com (last accessed on 28th March, 2014)

Zonal Plans - 2021

Even though MPD 2021 is the first time that zonal plans have been made, these still use modernist planning methods of separating functions and car-based developments as reference.

Public transport has not been given priority in any of the planning documents.
HISTORICAL BACKGROUND

SLUM RESETTLEMENT

‘Urban renewal accompanied by gentrification and population displacement is not restricted to cities of the global South; nonetheless, the scale and violence of evictions are particularly dramatic in certain emerging countries’ (Davis, 2006).

‘Slum clearance for the capital’s redevelopment and beautification has often resulted in pushing unwanted slums further out of the city’s physical and economic spaces, without solving the issues of adequate shelter for their dwellers’ (Dupont, 2011).

‘The exclusion of these ‘undesirable elements’ - in effect the poor - from reshaped urban spaces is a frequent outcome of the process of image construction of aspiring global cities in India’ (Banerjee - Guha, 2002; Mahadevia and Narayanan, 2008; McFarlane, 2008).

Delhi is an example of global - local conflicts and contradictions when adopting a global city agenda.

The initial locations of slums were in proximity to infrastructure and workplaces. The economic rationale for displacement was high price of land.

Displacing the slums to peripheries of the city where they do not have public transport access reinforces socio - spatial fragmentation.

Distribution of infrastructure based on equity should be reinforced to promote social inclusion.

Map on the right shows the location of slums in the core of the city and their displacement too the periphery of the city

Source: Adapted from V.Dupont (IRD); P. Chapelet (SETUP); Slum and Jhuggi - Jhompi Department, Municipal Corporation of Delhi, base map from www.geofabrik.de, www.openstreetmap.org

LEGEND
State Boundary
Main infrastructure
800m radii - metro
Resettlement colonies
Demolished in 1995,97,98
Demolished in 1999,2000
Demolished in 2001
Demolished in 2003, 2004
Main water courses
Urban agglomeration as per 2001
Note: Size of circles denote ratio of number of squatter households ranging from 1073 to 7500.
HISTORICAL BACKGROUND

RESIDENTIAL SEGREGATION BASED ON SOCIAL OSTRACISM

‘A review of studies dealing with socio - spatial organisation in contemporary Indian cities confirms the significance of caste as a factor of residential clustering’ (Noble & Dutt(1977); Gandhi (1983); Schenk (1986); Racine (1986); Trivedi (1996); Vaguet (1997); Auclair (1998); Saglio - Yatsimirsky(2002))

‘In Delhi, two factors contribute to the residential clustering of the scheduled caste population and their spatial distribution within the urban agglomeration: the survival of harijan bastis for ex - untouchable populations who had been socially ostracised and segregated for generations in separated urban quarters or rural hamlets now absorbed in the urban spread; and the contemporary concentration of poor scheduled caste migrants in squatter settlements, the only dwelling option they can afford’ (Dupont, 2004)

Here, social and spatial exclusion has been a deciding factor for the fragmentation.

Present urbanization and contemporary social dynamics has not tried to spatially solve the ostracism. The position of centralities also illustrates how the historical segregation influenced the urban development

Distribution of infrastructure based on equity should be reinforced to promote social inclusion.

Map on the right shows the super - imposition of the hierarchy in residential location of social groups based on ostracism along with the existing centralities

Source: Adapted from V.Dupont & LCA - IRD (Bondy) - M. Danard; Census of India 1991, Series 31 Delhi, Primary Census Abstract
HISTORICAL BACKGROUND

HISTORICAL EVOLUTION

‘Delhi has a history of at least three thousand years (Narain, 1986), and its area has been ‘the site for a succession of cities, each of which served as the capital or citadel or centre of a vast domain’’ (Frykenberg, 1986, p. xxii).

‘The possibility of creating the new city to harmonize visually with the old was never seriously considered. New Delhi was conceived as a purely British settlement juxtaposed to the Indian city’ (Evenson, 1989, p. 148).

‘This opposition between Old Delhi and New Delhi remains till today as an evident element of differentiation in the urban landscape as well as the socio-spatial organization of the capital’ (Dupont, 2004).

This spatial organization has set the stage for further urbanization along similar exclusionary processes.

Even though policies for heritage conservation have been outlined in planning documents (MPD 2021), no strategic policies have accompanied the same.

To conceive an urban - rural networked region, historic urban forms should be incorporated to lend spatial character.

Map on the right shows the location of the ancient city precincts in relation to the location of New Delhi

Source: Adapted from Peck, L. 2005. Delhi: A Thousand Years of Building. The Lotus Collection, New Delhi
**HISTORICAL BACKGROUND**

**CITY EXPANSION**

‘The spatial organization of Delhi is not only marked by the city’s different historic periods, but also by post-independence urban planning as well as endogeneous forces’ (Dupont, 2004).

‘The pattern of multi-nuclei model has been identified as the most relevant model to explain the urban configuration of Delhi’ (Nagpaul, 1988).

‘To ease vehicular traffic, the Delhi government has built or is planning to build numerous flyovers, bypasses and bridges: 28 projects are scheduled, most of them for completion between 2007 and 2010, including a bridge over the Yamuna river’ (Dupont, 2004).

The rampant urbanization saw the criss-crossing of infrastructure through what was until then a predominantly rural landscape.

This infrastructure did not serve the peri-urban areas. Instead they were enhanced to serve as corridors between the city cores.

It is evident that the rural villages in their present spatial condition cannot work in isolation.

The idea is to understand the potential that a robust secondary infrastructural network connecting to nearby urbanized areas can offer in terms of self-sufficiency and enhanced productivity status.

Map on the right shows the expansion of the city through time

HISTORICAL BACKGROUND
NATIONAL CAPITAL REGION

As per the stipulations of the National Capital Region Planning Board, 1985, the NCR was created to indicate the manner in which the land in the National Capital Region shall be used, whether by carrying out development thereon or by conservation or otherwise, and such other matters as are likely to have any important influence on the development of the National Capital Region

The infrastructural development has resulted in a multi-directional sprawl.

The main decisions of the act cater to infrastructural decisions, with regard to expressways, highway corridors and railways which connect the priority cities.

The current trajectory of urban growth in NCR indicates a policy negation of the peri-urban areas, thus not solving the problem of fragmentation.

Map on the right shows the existing morphology in the National Capital Region

Source: Adapted from IRS (Resourcesat LISS IV) 2012, National Capital Region Planning Board
PROPOSED MOBILITY PLAN FOR NCR 2021

Dedicated Freight corridor
Along infrastructure
National Highways
State Highways
Expressways
Main water courses
Natural reserves
Built areas
Urbanisable areas
Green belt

LEGEND

Urbanisable areas
Green belt
Green buffer
Upgradation to SH
Upgradation to NH
Metro railway line
New rail links
Proposed Rapid Rail
Proposed Dedicated Freight corridor

Figure 2 shows the proposed infrastructure; accelerated mobility corridors between priority towns

Source: Adapted from IRS (Resourcesat LISS IV) 2012; National Capital Region Planning Board

Figure 3 shows the proposed urban expansion; the existing peri-urban areas are absorbed into the expansion. The green belt has now assumed a ring around the Central NCR. It is evident that such arbitrary boundaries for green belt in the agricultural landscape does not ensure its sustenance. In the process, the vital green spaces are compromised for the urban expansion.
‘The resultant, unevenly woven urban fabric is today assuming extremely complex, polycentric forms’ (Lefebvre, 2003(1970))

‘The urban unfolds into the countryside just as the countryside folds back into the city’ (Merrifield, 2011)

Map on the right shows an interpretation of the future outcome in the region if the current expansion trends continue.

Source: Adapted based on interpretations by Dupont (2007); McGee (2009)
SPRAWL

‘Population growth was concurrent with a spatial expansion in all directions, including to the east of the Yamuna river. The official area of urban agglomeration almost quadrupled between 1951 and 2001 and its share in the total area of the National Capital Territory of Delhi increased from 14% to 53%’ (MPD 2021)

‘Multi-directional urban sprawl extended beyond the city limits, following main roads and railway lines connecting the built up area of the core city - Delhi - with that of the peripheral towns, leading to the development of a multi-nodal urban area’ (Dupont 2011).

Urban form guided by car-dependent urbanism does not contribute to the qualities and values of space.

The existing green and blue structures are ignored in the current model of urban expansion.

Urban form should be guided by structures that are flexible enough to adapt according to the progression of time and can thus form a backbone and network to link the various fragments.

Map on the right shows the existing built area in the city

Source: Adapted from INTACH Maps
‘Mixed spaces, apportioned between populations with contrasting lifestyles and varied land use, peri-urban spaces are also disputed spaces bringing into play divergent and even conflicting interests - hence the extensions of residential zones, or of industrial and commercial zones compete with the development of green belts, cultivated areas or nature reserves’ (Dupont, 2007).

In the ‘green versus brown agenda’, it would be the green belt which would be compromised as evident in the previous master plans.

The current green spaces are fragmented and mostly part of gated apartment complexes.

Existing green structures should form part of a multi-functional multi-scalar green network serving as lungs for the city.

Map on the right shows the existing green structure in the city

Source: Adapted from www.geofabrik.de, www.openstreetmap.org
Among the physical barriers that introduce a first line of demarcation line between urban sectors, the most important one is the Yamuna river with its large bed of agricultural land. It flows through the metropolis from North to South, separating all the zones located to the east, mainly residential zones of very varied types of settlement, but also including an industrial zone (Dupont, 2004).

‘The Yamuna river and the drains are highly polluted. The treated wastewater is being largely put back into the drains and gets polluted again before flowing into the river Yamuna, which receives 70% of its waste from the 22 kms of its flow through urban Delhi which, in turn, constitutes only 2% of the total length of the river basin stretching from its point of origin till its merger into the Ganga at Allahabad’ (MPD 2021).

‘A large number of the traditional water bodies in the form of ponds, etc. have been encroached or have otherwise become defunct’ (MPD 2021).

These issues have a negative impact on the ecosystem of the city and on the availability and quality of drinking water. It mostly affects the low-income groups in peri-urban areas as the new urban developments rely on trucks for drinking water.

The existing water bodies should be revitalised along with the existing green areas to form a green-blue network guiding the urban form.

Map on the right shows the existing water courses in the city
Source: Adapted from INTACH Maps and www.geofabrik.de, www.openstreetmap.org
TOPOGRAPHY
Delhi has a relatively flat topography. The ridge cutting through the middle part of Delhi is the only elevated area. It is a protected region and encroachments are not allowed there.

However in the area of the ridge in the peri-urban area, there is also no conscious effort to regenerate forestry to increase the overall green in the city.

By conceiving the ridge as a multi-functional element which contributes to the peri-urban area as a recreational and open space resource, the current fragmentation that it has engendered can be countered.

Map on the right shows the existing topography of the city

Source: Adapted from INTACH Maps, Base Map from www.geofabrik.de, www.openstreetmap.org
The figures represent the comparison of the potentials and negatives of the city. The potential areas are an overlap of the water structures, green spaces, public transport, nodes of trade and commerce and urban governance represented in figure 1. The negative areas are an overlap of the increasing growth rate in the periphery, the multi-directional sprawl, resettlement of slums to the periphery and location of backward castes because of historical ostracism in the periphery of the city; represented in figure 2.

In figure 3, when comparing, it is evident that there is a concentration of positives in the city cores which is well-accessed by public transport and has qualitative green spaces. The periphery on the other hand is marginalised space because of lack of proper monitoring systems and arbitrary rules with regard to green belt which is encroached as a result.

The conflicts that the city faces as a result of socio-spatial fragmentation is thus at a maximum at the peri-urban areas. Countering fragmentation in the peri-urban areas should take into account a reconfiguration of existing values.
Changes in productive activities and lifestyles are brought about by a lost economic base due to vanishing agricultural role. There is an upscaling in economy, production, trade and entertainment which does not fit in with the existing fine grain. Therefore there is the spatial condition where programs lying next to each other are disconnected but have prioritised connections with regional traffic.

Public spaces are transforming into controlled spaces accessible only to the rich. the city’s relationship with the landscape is thus frayed. Current zoning trends reflect an induction of car-based mobility in the peri-urban area as well. The proposed infrastructures which are to cater to the expansion of the city are crudely designed with no relation to the context. Therefore the public transport has lost the competition to the private car.

A lack of pro-active planning and absence of urban local bodies means that there is too much emphasis on the decisions of the market forces and nobody takes responsibilities for shared resources like water structures and open spaces.

A strategy advocating a diversification and value addition to the blue and green structures can enable a permeable spatial condition in the peri-urban area. A reconfiguration of the existing productive systems by combining with the open spaces leading to new centralities, nodes, clusters, mobility and urban form. This means the need for a new set of tools which are flexible enough to guide the different parts of the territory but precise enough to protect valuable qualities.

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<td>for village residents</td>
<td>Networked per-urban</td>
<td>Local: Integration of village residents</td>
</tr>
</tbody>
</table>

Of course, it is understood that in a market oriented society, it is impossible to guide the whole territory. Nevertheless, if networks of water and green structures can be used to guide the territory, a certain degree of control can be maintained.
3. DELHI’S EXCLUDED PERI
- URBAN SPACE
Peri - Urban Region
This chapter entails the understanding of fragmentation in the peri-urban area. Two squares of 12 x 12 km depicting two diverse spatial conditions are used for the purpose. The area on the left is dominated by rural villages surrounded by a productive landscape. The area on the left is more urbanized in comparison. The agricultural land in this area was acquired for urban development in the process leading to a congestion in the villages. These villages now go by the name ‘urban villages’. The trends are analysed by the same criteria of urban form, open space, mobility and production. This enables to understand how the process of fragmentation and ensuing exclusion that now exists in the second area might be avoided in the first area by introducing new strategies.
The morphology of Area 1 comprises rural villages each bounded by ‘Lal Dora’ road which separates the village from the agricultural land. The main water course is Najafgarh drain which has polluted water and drains into the Yamuna river. On the North - west of the drain is the town named Najafgarh.

On the North - east is the sub - city Dwarka developed in the last decade to accommodate the projected population in the city.

The morphology of Area 2 is a co - existence of diverse spatial conditions which are not connected to each other. The farmlands were acquired for urban development. In this area, the development is mostly single - family villas with private gardens. The villages have been transformed into highly dense urban villages with rampant commercialization. The north of the area also has housing by DDA and the main heritage park of the city. The area is bounded on the west by the protected ridge and on the east by reserved forests.
URBAN FORM

Urban form in Area 1 is dominated by introverted systems of rural villages and urbanized systems of Najafgarh and Dwarka.

Area 2 on the other hand has a spatial condition where the urban villages are surrounded by sprawling expansion of the city.
The following visual data depicts the diverse spatial conditions in Area 1 in close proximity to each other but segregated. Note the exclusive high rise apartments in the sub-city of Dwarka and the fine grain morphology of the rural villages.

Source: Pictures by author
The following visual data depicts the diverse spatial conditions in Area 2 in close proximity to each other but segregated. Note the contrast in morphology of single family villas and the congested urban villages.

Source: Pictures by author
The main open space in Area 1 is dominated by the agricultural fields which will disappear once the proposed Master Plan norms of urban expansion are achieved. A hierarchy of courtyards for social interaction comprise the open spaces within the rural villages.

The green spaces in Dwarka are mostly privatized catering only to the apartment complexes. The water systems does not even form a vital public space. This potential could be used to reconfigure the urban space.

Even though it might look like Area 2 has a high density of green, most of it is excluded and privatized. The ridge remains protected and hence no encroachment is allowed there. However, this potential is not used to increase the overall green in the area and diversify its functions to lend the space value and quality at different scales. The only publicly accessible open space here is the heritage park. Parks of smaller scales cater to the housing by DDA.
Area 1 is predominantly characterized by rural networks. Each village has a boundary ‘Lal Dora’ road and secondary roads which connect it to other villages. On the west, the sub-city Dwarka has bigger roads mainly built for intense car use. The metro line which runs through the territory only serves Dwarka. There are no metro feeder buses to connect the rural villages to faster public transport. So most of the villagers rely on buses which come only twice a day or on individual transport.

Being an intensely commercialized space and part of the traditional trade route, Area 2 is well served by city buses. A metro line from the city centre to Gurgaon also passes through the area. The urban villages which are located along these corridors benefit from this access by commercialization on the fringes. However, the smaller urban villages further south do not have any public transport connection. The single family villas mostly rely on individual transport.
MICROCOSMIC INTERPRETATION

PRODUCTION

In Area 1, the rural villages are predominantly residential with traditional urban forms. Dwarka is characterised by apartment complexes and townships; there are also educational institutions. Najafgarh is urbanized with mostly mixed use typologies.

In Area 2, the urban villages are mixed use with the hierarchy in commercialization determined by their proximity to infrastructural corridors or historical centralities. There is also preserved Mughal heritage towards the north of the area in the form of an archaeological park. Besides a few institutions, rest of the urbanity is residential, ranging from single family villas to DDA housing to apartment complexes.

Note: The individual buildings in Area 2 is obtained from INTACH whereas similar data was not available for Area 1 so urban blocks have been depicted in this case.

Source: Adapted from Google Maps
Summary from the interview

Water Issues
SEWAGE. DRINKING WATER.
LOW GROUND WATER LEVEL.
UNEQUIPPED SEWAGE PLANTS.
COVERED NALLAHS.
SEWAGE DUMP IN NALLAHS.
ENCROACHED WATER BODIES.

Livelihood
CHANGED OCCUPATIONAL PATTERNS.
WIDENING RICH - POOR DIVIDE.
LOSS OF PRODUCTIVE LANDSCAPES.
COMPENSATION IS VERY LESS.
MONEY NOT ENOUGH TO BUY LAND ELSEWHERE.
AGRICULTURAL LAND IS TEMPORARY.

Mobility
NO METRO - FEEDER CONNECTIONS.
USE COMPENSATION FOR BUYING CARS.

Amenities
NO SCHOOLS NEARBY.
EXPENSIVE PRIVATE SCHOOLS.
NO HOSPITALS NEARBY.

During the field work, open interviews were conducted along with the residents in the rural villages including the people shown in the pictures above. The village elders commented on the lack of basic amenities and no access to public transport. The current master plan norms also made it difficult to invest in agricultural lands since it is not possible to determine how long it remains in their ownership. They also acknowledged the widening gap between the rich and the poor as a result of policies which favoured only certain sections of society. The children mostly went to expensive private schools in the nearby sub-city of Dwarka as there were no good schools in the villages.
TRENDS TO EXCLUSION

These maps are intended to showcase an abstraction of the negative impact of the ongoing trends of city expansion.

Unless Area 1 is to be transformed by a new set of spatial tools and strategies, it runs a risk of appropriation of productive landscapes into exclusionary spaces just like the second space. The existing open spaces and water courses are to be valorized to counter the condition of fragmentation.

The transformations that Area 2 has been subjected to has rendered it to be a space of exclusion; where diverse income groups live in close proximity to each other but are disconnected to each other. The quality and the availability of services, open spaces and public transport are also decisive of the current exigencies in the master planning norms.
The logic of the existing diverse spatial conditions as a result of various endogenous forces in the peri-urban area is viewed through the lens of mobility, open space, production and urban form. Area 1 illustrates a condition of isotropy and Area 2 illustrates a case of sprawl, the sprawl usually resulting in a loss of historical and traditional strengths.

This comparison illustrates the need to conceive a multi-functional role for infrastructural corridors wherein a meeting between the different scales can be envisaged.

This comparison illustrates the need to promote multi-functional and multi-scalar open space network as a backbone wherein a translation from exclusive enclaves to hybrid spaces can be envisaged through this.

This comparison illustrates the need to achieve a middle ground wherein the preserved parts of the productive landscape intermingle with new city expansions enhancing the multi-functionality of production.

This comparison illustrates the need to enable a shift in spatial dynamics towards equity and not segregation between existing traditional urban forms and new urban forms.

The comparisons establish the need to re-configure how the respective criteria function individually and in relation to each other.

Subsequent chapters derive principles from historical rationalities and propose an alternate model for the sustenance of the peri-urban area.
4. DELHI AS A MOSAIC CITY
Contemporary interpretation of Historical Rationalities

This chapter entails the morphological transition of Delhi. The diverse spatial structures and the political and social conditions that dominated then render Delhi as a mosaic; a palimpsest that witnessed Mughal traditions, British imperial architecture and post-independence boom with heavy global influence. The traditional structures such as rural villages and informal settlements are also a significant part of Delhi’s mosaic; some adapting to the rapid transformations and some losing their inherent strengths in the process. Design principles that are a contemporary interpretation of historical rationalities are used to feed into a strategy for the peri-urban area.
RURAL VILLAGES

Rural villages were characterized by a series of courtyards which varied in levels of privacy, size and the number of people who used them. They served as places of rest, interaction and points of orientation. These traditional public spaces are under a risk of being encroached as a result of arbitrary and uncertain uses being lent to it under the present scenario. Since they were part of an introverted system, to be valorized in a beneficial manner, they have to be connected to a larger network and have diverse uses.

Above the morphology of some of the existing villages is illustrated. It is evident that the village pond used to be a significant value in past times. Villages mostly originated near a water source. They supplied water for drinking and other purposes. Nowadays, these ponds have been ill-maintained and contain polluted water. The chief reason for not revitalising them is because of the lack of agreement between DDA and Forest department on who is responsible for the ponds. This again displays the need for localised urban governance on water issues.

**Urban Form and Open Space:**

Traditional Courtyard house

**Derived Principles**

**Open Space and Mobility:**

Hierarchy of Courtyards

The above tools have been derived from the spatial strengths of the rural villages.

**Open Space:** Village Ponds as multi-functional spaces: Water retention, leisure, urban climate, orientation point

Source: Adapted from Google Maps
The vitality of Old Delhi is characterised by predominantly mixed use functions with some centralities, fine-grained streets and open spaces.

During the mughal times, public gardens used to provide shade and were places of rest and interaction. They were not exclusive spaces but were many in number and spread out for use by the public.

The above tools have been derived from the spatial strengths of Old Delhi.
Plan of Imperial Delhi designed by Edwin Lutyens in Garden City style

Source: Adapted from Peck, L., 2005. Delhi: A Thousand Years of Building. The Lotus Collection, New Delhi
Even though the plan of New Delhi was superimposed on the old to showcase the imperial British power and was designed for a car-oriented population; the design has certain spatial strengths which may be used to reconfigure the peri-urban spaces.

The trees lining the avenues were a later decision taken to make up for the lack of density in the capital, but it ultimately gave character and quality to the wide roads.

The houses with verandahs were also a way to deal with the summer in Delhi.

**DERIVED PRINCIPLES**

**URBAN FORM:** Houses with verandahs; reverse of the traditional courtyard house

**MOBILITY AND OPEN SPACE:** Promoting multi-functionality; Tree-lined avenues as ecological links

**NEW DELHI**

**DELHI AS A MOSAIC CITY**


The morphology of housing plans by DDA show that they were heavily influenced by the Garden city model which Lutyens applied for the imperial capital.

When the lands were acquired, basic infrastructure such as roads, drainage systems, provision of water and electricity, parks and planting of trees were the responsibility of the DDA. The construction of housing was undertaken by either the DDA or co-operative housing societies.

What might be derived from these typologies is the minimum amount of spatial quality that was stipulated at the time of initiation itself.

POST - INDEPENDENCE HOUSING

The morphology of housing plans by DDA show that they were heavily influenced by the Garden city model which Lutyens applied for the imperial capital.

When the lands were acquired, basic infrastructure such as roads, drainage systems, provision of water and electricity, parks and planting of trees were the responsibility of the DDA. The construction of housing was undertaken by either the DDA or co-operative housing societies.

The housing sectors and categories were determined by segregation based on income which in itself is a policy of exclusion.

What might be derived from these typologies is the minimum amount of spatial quality that was stipulated at the time of initiation itself.
The above tools have been derived from the spatial strengths of post-independence housing. The district centres are a positive outcome of the DDA housing. These are located as nodal points to serve the needs of the residents.

Since the shops on the ground floor are accessible from outside, the district centres can be considered an inclusive urban form which also facilitates production and has interactive open spaces and vitality in opposition to the exclusionary shopping malls.

POST - INDEPENDENCE HOUSING

The above tools have been derived from the spatial strengths of post-independence housing.

The district centres are a positive outcome of the DDA housing. These are located as nodal points to serve the needs of the residents.
Life on the streets
Fine grained, walkable, bikable streets

MOBILITY:
Slow connections; walkable, bikable streets

OPEN SPACE:
Micro - spaces

INFORMAL SETTLEMENTS
The spatial strengths of the informal settlements ascribe to the fine - grained street vitality which are being swept away to conform to car - based city expansion formulas.

Life on the streets is a very vital part of the Indian city tradition. Micro - spaces are created through apprehension of spaces by the users. These assume different hues and qualities by virtue of the time and the people using them. Many such local spaces which were valued in the past are now being lost because of the rapid city expansion and encroachment.
URBAN FORM: Fine-grained urban form; enabling eyes on the street

PRODUCTION: Informal trade, temporary programs, kiosks, push carts

The above tools have been derived from the spatial strengths of informal settlements. The new sub-city expansions lack the vitality of informal trade and kiosks which are a trademark of the city cores.

Besides street vitality, these are also provide viable employment options for the low skilled. The exclusive apartment complexes and gated communities have only enforced the idea of danger on the streets. These have to be re-interpreted using traditional spatial strengths.

INFORMAL SETTLEMENTS

Eyes on the street

Informal trade

Source: Picture by author
CONSOLIDATION OF DESIGN PRINCIPLES
The traditional architectonic typologies had defined uses which were complemented by the urban forms. The derived principles are a re-interpretation to suit contemporary trends and demands of the area. They are sometimes used singularly and sometimes in combination as a response to the complex economical, social, environmental and political conditions.

URBAN FORM: Fine - grained urban form; enabling eyes on the street - Promoting safe streets

PRODUCTION: Informal trade, temporary programs, kiosks, push carts

MOBILITY: Slow connections; walkable, bikable streets - Permeable spatial condition

OPEN SPACE AND MOBILITY: Tree-lined avenues as ecological links - Promoting multi - functionality

PRODUCTION: Market on ground floor and residential on upper floors - Multi - scalar inclusive urban forms

MOBILITY: Commercial Corridor as regional orientation - A framework for future growth

OPEN SPACE: Parks - Multi - scalar recreational spaces

PRODUCTION, URBAN FORM AND OPEN SPACE: District centers - Multi - scalar inclusive urban forms

OPEN SPACE: Public gardens as orientation points - Multi - scalar patches for rest and interaction

PRODUCTION: Informal trade, temporary programs, kiosks, push carts

OPEN SPACE: Village Ponds as multi-functional spaces: Water retention, leisure, urban climate, orientation point

URBAN FORM AND OPEN SPACE: Traditional Courtyard house - To evolve residential typologies with hierarchy of usable spaces; semi-private and private

OPEN SPACE: Micro - spaces - Valorizing existing spaces

CONSOLIDATION OF DESIGN PRINCIPLES
The traditional architectonic typologies had defined uses which were complemented by the urban forms. The derived principles are a re-interpretation to suit contemporary trends and demands of the area. They are sometimes used singularly and sometimes in combination as a response to the complex economical, social, environmental and political conditions.
5. PERI - URBAN SPACE AS A RESOURCE
Integrated Design principles and Spatial vision

This chapter entails the regional strategy for the peri-urban area. Existing mobility, open space and production are used as criteria to define the strategies.
Until now, the planning systems in Delhi have been heavily influenced by the British planning tradition. The green belt was seen as a way of urban containment.

The figure above shows the relation between the proposed green belt according to Master Plan documents and the expansion of the city. This clearly indicates that the green belt as a spatial tool failed to meet its function. It ‘remains a blanket policy with roots in a bygone era of modernistic planning’ (Amati and Taylor, 2010). As the city expanded, the arbitrary boundary and the lack of delineation of specific functions led to the disappearance of the green belt.

There is thus a need for a new spatial tool which will ensure against a loss of diverse green spaces and is flexible enough to meet the demands and guide the growth of the expanding metropolis. In the process, identifying a continuum which will counter the existing fragmentation in the territory.

Source: Adapted from Master plan documents
In opposition to the green belt as an existing spatial tool, Green Infrastructure is proposed as a spatial tool which is multi-scalar and multi-functional.

The two articles ‘From Green Belts to Green Infrastructure? The Evolution of a New Concept in the Emerging Soft Governance of Spatial Strategies’ by Thomas & Littlewood (2010) and ‘From Green Belts to Green Infrastructure’ by Amati and Taylor (2010) formed the starting point of this direction. Both these texts envisage a shift from the taken for granted policy of green belt to a policy which can cater to diverse functions and through it enable a sustenance of overall green in the area. This evolution in policy is triggered by a recognition of the diverse functions and benefits which reinforces the need for the preservation of the belt.

Currently, the green belt is a top down decision imposed on farmands and farmers with no negotiation and no compensation for its maintenance. When a private developer approaches the farmer with the idea of development and a promise of a monetary award much higher than what can be made through agriculture, the land is exchanged for quick profit. To mitigate this process, to make the green belt a dynamic entity and to nuance the blanket policy, there needs to be a change in land management in the newly reconfigured belt and a shift in public perception.

This also concerns the idea of conserving the near-urban agricultural land, ‘valuing under-appreciated assets of the urban fringe’ (Thomas and Littlewood, 2010), preserving heritage, creating livelihood options, biodiversity, climatic aspects and a framework for future growth. Therefore, by ‘encompassing ecological, social, cultural and economic objectives’ (Amati and Taylor, 2010), the green belt undergoes a progressive shift to ensure its preservation.
PHYSICAL ELEMENTS USED IN GREEN INFRASTRUCTURE

Principles of landscape ecology based on Forman (1995) have been used to define the proposal.

The mentioned benefits and physical elements are based on interpretations by Sandstrom (2010), McMahon (2000), Ignatieva, Stewart and Meurk (2010).

A valorization of landscape elements and landscapes, to form a continuum across big and small scales, fine grained and coarse grained, distinct or a gradual boundary form the broader idea of the principles used.

These include elements which are as small as hedges and gardens to as large as forests and farmlands. If the vegetation patches are conceived as nodes, then the linear mobility filaments from the bike paths and the pedestrian paths to the highways and railways are conceived as links or corridors. This also involves interweaving water courses into the strategy to establish a continuum.

These broad principles are complemented and contextualised by the derivation of design principles from historical rationalities to conceive additional principles and a spatial language for valuing the endogenous potentials of the peri-urban areas.
Cluster housing around a courtyard

This particular case study was chosen for its articulation of low-income housing using a hierarchy of open spaces as the backbone of the plan. It is a project by Charles Correa. It is a LIG Housing scheme in Belapur, Mumbai. Drawing upon the Indian traditional courtyard houses, he used the open space as a primary structuring element.

A hierarchy of courtyard spaces linked to each other ensured open space for each family. The project can be said to have limitations in the sense that it did not use the existing water course to advantage. Also since the project was a site bounded by roads on three sides, it did not seem to have considered the implications on the larger territory.

Being a low density form, it cannot be directly applied to meet the housing demands in Delhi. So it has been adapted appropriately using design principles.
To conceive the peri-urban area as a resource, an addition of design principles are prepared. These are derived as a combination of historical rationalities, the existing situations, needs and roles and theories on green infrastructure. The principles from the case study also feed into the derivation of principles. The core idea is to attain a backbone for the peri-urban area through multiple scales and multiple functions.

The core idea involves a progressive phasing of implementation of secondary infrastructure which will eventually enable the peri-urban area to recognize and capitalise on its own strengths.

The integrated spatial vision proposed tries to envisage a situation where the migration to core city areas maybe mitigated by a self-sufficiency of peri-urban areas.
It is evident that if the current planning trends are continued, the peri-urban area would be overtaken by rampant urbanization. This would mean a loss to the vital productive landscape. It also means a scenario of eviction for the current residents of the villages.

By embedding green infrastructure as a new spatial tool which is multi-functional and which transcends scales, the peri-urban area can be envisaged as a middle ground where new nodes and centralities emerge. It also offers potential for integration of the needs of the village residents. Walkable networks of large and small spaces would define the territory. Existing green and blue networks would be enhanced to guide the urban development. Soft mobility would be promoted for individual transport.

Basic services, amenities, schools and hospitals would be positioned appropriately to serve the local population. Boulevards and streets would take precedence over the fast connections. This would increase the overall green thus also lending spatial quality to the area.

The proposed principles are therefore intended to serve an alternate model which is tested in the demonstration intervention.
REGIONAL PLANNING FRAMEWORK
This section discusses the desired regional planning framework that is needed to embed the green infrastructure as a planning tool.

The existing mobility structures, green spaces and water are re-interpreted with new roles to operate as a continuum.

The governance also assumes significance in terms of negotiation on shared resources, local bodies and participation of passive stakeholders.

MOBILITY: ROAD, RAIL, METRO
The figure above represents existing mobility in the region. Currently, mobility patterns determine the rapid urbanization along their side.

This highly intense zone is peppered with exclusive urban forms. These linear filaments should be re-interpreted as ecological corridors instead of just TOD zones. This enables continuing strips of green in the region.

For empowering the peri-urban area with an alternative strategy, the two districts and wards have to collaborate and negotiate on agendas for shared resources.

ADMINISTRATIVE BOUNDARIES
This section discusses the desired regional planning framework that is needed to embed the green infrastructure as a planning tool.

The existing mobility structures, green spaces and water are re-interpreted with new roles to operate as a continuum.

The governance also assumes significance in terms of negotiation on shared resources, local bodies and participation of passive stakeholders.

PERI-URBAN SPACE AS A RESOURCE

Existing mobility: Road, Rail, Metro

Existing administrative boundaries
GREEN AND WATER
As illustrated in previous chapters, a large percentage of the green areas are fragmented, privatized, reserved and/or exclusive in nature. There are smaller vacant or fallow lands which can be re-purposed temporarily or permanently for imbibing alternative hues for the peri-urban region.

Similarly, the water structures have to be de-polluted to address water shortages as well as to contribute to spatial quality.

The key concept for the regional strategy is derived from Forman’s (1995) ‘Patch - corridor - matrix’ principle. This principle primarily categorizes every point within a landscape as a patch, corridor or a background matrix.

It stresses on the need to have large and small sized patches and corridors to enable a link between the regional and human scales. This also ensures a way of retaining landscape patches even in densely urbanized areas assuming various roles in the process.

REGIONAL CONCEPT

Patches, corridors and matrix

Existing green and water

New forests and farms as reserves
Existing forests, reserves and archeological parks as hubs or trial heads
Highways and railways as regional ecological links
Existing streams and canals as corridors
The regional strategy is envisaged as a combination of linear systems of open space, production and mobility. The fragments meanwhile are re- configured as an arrangement of multi-scalar courtyards around which new programs and new centralities are devised. This demonstration project of 3km x 3km proceeds to show how fragments maybe reconfigured by a combination of open space, production and mobility systems. On a localised scale, typologies of appropriate urban form is proposed; derived partly as a contemporary interpretation of historical forms.
INTERVENTION OBJECTIVES

This project of 3 x 3 km is used to demonstrate a simulation of an alternative for the peri-urban area.

The existing context is mapped using the criteria of mobility, open space, production and urban form. An analysis of the existing trends establishes the constraints and limits of the project. Concepts driven from theory and the needs of the space inform the design proposal.

Further, planning and design recommendations are derived from the proposal as an aid to similar interventions in the peri-urban area.
The pictures above depict the various spatial conditions in the project area.
EXISTING URBAN FORM

The condition of isotropy in the area is defined by the introverted system of traditional rural villages. The urban form is fine grained and mostly residences which are single or double storied.

The Border security force camp is a closed system since it is a restricted area.

On the north, the housing for low income groups by DDA is a mixed-use urbanised system.
EXISTING OPEN SPACE

The idea of this mapping was to explore the extent of porosity of the space. The mapping gave some clear indications of the potentials of the existing open spaces. If these micro-spaces are valorized by introducing functional diversity, it can enable the linking to larger scales and thus benefitting the whole region.
EXISTING PRODUCTIVE LANDSCAPE

Traditionally, large portions of land were owned by a single landowner. This consolidation was divided into organized plots and cultivated by landless farmers on a tenure basis. Most of the landless farmers are from poor and disadvantaged groups. When the current model of city expansion is followed, the landowners consolidate wealth by selling their land to private developers or become developers themselves in wake of a steep increase in land value. The poor farmers meanwhile lose their primary means of livelihood.
Existing Open space potential

This map sets the base for understanding the scope of multi-functional interfaces between existing open space and production. The water courses, ponds, big open spaces and localized micro-spaces are valorized to contribute to a larger open space strategy.
EXISTING MOBILITY

Existing mobility structure represents a fine grained street structure. The introverted rural villages are bounded by organic streets, the main roads among them referred to as Lal Dora which separates the agricultural land from the habitable areas.

The proposal of the 100 m wide Urban Extension Road threatens to disrupt this isotropy. While cutting through the landscape, it proposes to be an expressway which enables faster access to the National Highways.

The subsequent section confronts the existing situation with the ongoing trends.
TRENDS: EXISTING PROPOSAL
This section analyses the on-going positive and negative trends in urban development in the city.

The criteria was selected based on their capacity to inform about the endogenous constraints, limits and potentials which may hamper or aid the idea of green infrastructure in the peri-urban area.

These include crude infrastructure proposals, water shortage, environment, open space, transportation, technical infrastructure, heritage conservation, land policy, informal sector, trade, commerce, mixed use facilities and housing.

1. UER (Urban Extension Road)
Existing trends

The proposals of the two Urban Extension Roads (Width of UER II - 100 m and Width of UER 1 - 80 m) can be seen as to have positive and negative effects. On the one hand, it can be seen as a way to ease the congestion in Delhi and enable access of the National Highways without entering the city.

On the other hand, since there is scarcity of land in Delhi, these roads will be elevated in most parts. It is highly probable that the proposed UER will act as a barrier in the peri-urban area similar to the Delhi - Gurgaon expressway. Therefore it is necessary to have strategic design principles which will prevent this. It has to have provisions which will enable benefits for the peri-urban area as well.

‘UER to be taken up as a TOD project with multi/mixed-use high density development within the influence zone of the entire Multi Modal/MRTS corridor with enhanced Public Transport Connectivity ensuring reduction of Carbon Footprints.’ (Excerpt from Minutes of the 44th Delhi Development Authority Unified Traffic & Transportation Infrastructure (plg. & Engg.)Centre governing body meeting, held on 22.8.13.)

Along with the UER proposals, provision of ecological corridors, soft mobility, space for informal trade and using space under the highways for diverse functions should be included.

This can enable a more permeable condition in the peri-urban area instead of a fragmented situation as has been witnessed in light of big infrastructural proposals.
2. WATER SHORTAGE

It has been acknowledged in the MPD 2021 that rejuvenation encroached water bodies will solve the issue of water shortage in the city.

This has to be accompanied by design principles that combine this need with diverse functions based on context. The water body can be a node, centrality or part of a hiking trial.

3. ENVIRONMENT AND OPEN SPACE

The MPD has emphasised on the conservation of the ridge. It has also emphasised on the provision of 15 - 20% OF LAND USE TO LUNG SPACES/ RECREATIONAL AREAS AND GREEN BELT.

Arbitrary boundaries leads to encroachment of open spaces. This provision has to be accompanied by policies elaborating functions to the green areas.

4. TRANSPORTATION

The MPD stipulates the need for multi - level parking, underground parking, multi - modal public transport system, cycle tracks and pedestrian paths to achieve a synergy between land use and transport.

This is confronted with the proposal to allow for a condition of equity based infrastructure.

5. TECHNICAL INFRASTRUCTURE

The rejuvenation of River Yamuna accomodating measures such as refurbishment of trunk sewers, treatment of drains, sewering of unsewered areas, treatment of industrial affluent and recycling of treated effluents has been included in MPD 2021.

This provision reflects on the larger need for spatial quality and addressing environmental concerns in the city. It also needs the backing of robust technical infrastructure to ensure alleviation of pollution.

6. HERITAGE CONSERVATION

The MPD stipulates the identification of heritage zones, archaeological parks and development of special conservation plans for listed buildings and precincts.

This provision becomes significant in the regional aspirations of green infrastructure. The articulation of green infrastructure and soft mobility can be combined with this provision to enable hiking trials and enhance tourism potential.
7. LAND POLICY

MPD 2021 envisages a decentralised local area planning by participatory approach. It also incorporates the idea of performance oriented planning and development, with focus on implementation and monitoring.

However, this vision has to be backed by concrete design strategies for practical implementation. Existing planning systems do not have provisions for participatory approach for passive stakeholders.

8. INFORMAL SECTOR

Incorporating unauthorised colonies into the mainstream by adequate provision of infrastructure, services and facilities have been outlined in the MPD 2021.

This challenging task has to reviewed in light of current housing needs. The informal sector remains neglected and segregated from the rest of the city. The proposed alternate model for the peri-urban area should seek to address this fragmented situation in a strategic manner.

9. TRADE, COMMERCE & MIXED USE

For better synergy between public transport and work centres, MPD 2021 has mooted the idea of district and community centres as facility corridors along major transport networks and integrated freight complexes/wholesale markets along urban peripheries. The idea of mixed use, informal markets, push carts and mobile vans has also been given prominence in light of shortfall of available commercial space.

Since these are inclusive forms in comparison to the exclusive shopping malls, it can be a very vital component for the alternate model for the peri-urban area.

10. HOUSING

Shortage of land is a very pressing issue in Delhi with the projected population in 2021 to be 23 million from the current 18.5 million. DDA stipulates an addition of 1.44 million dwelling units of various categories to be accommodated in 20000 - 22000 hectares of land. To prevent proliferation of slums, 50-55% of housing has been provisioned for urban poor.

While this may be a positive sign to address shortage of housing, it is important that the urban poor also avail of spatial quality, basic amenities, accessibility to infrastructure & public transport and not succumb to residential segregation.
IF CURRENT TRENDS PERSIST..

- Gated communities, exclusive apartments and privatized open spaces
- Rural villages turned into congested urban villages
- 100 m wide UER becomes a barrier cutting through the peri-urban landscape
DEMONSTRATION INTERVENTION

PREScribing the CURRENT DEVELOPING TRENDS

The existing situation of urban development reinforces the regional and local tensions. The urban form and mobility adopts an exclusive spatial condition striving to meet the global demands of the city while neglecting the local needs. The agricultural production and open spaces are compromised for the rapid colonization of urban form. It can also be said that the urban transformation overtakes the social transformation neglecting passive stakeholders.

APPLICATION OF GREEN INFRASTRUCTURE AS A SPATIAL TOOL

Alternative model of development is necessary to counter the fragmentation that this causes. The proposal seeks to balance the needs of the urban form, mobility, agricultural production and open space layers. This enables a strong backbone for the urban form rather than haphazard development.

In this demonstration project, green infrastructure is used as a spatial tool to promote cohesive development. Each layer is delineated with a specific function to achieve an alternate model of development for the peri-urban area.
1. BARRIERS
The site has two main barriers - the UER and the water course. These have to be reconfigured to create a permeable spatial condition in the space.

2. INTERFACES
Using the derived design principles, continuous interfaces are created between the existing open space and the existing production. These are devised as a combination of multi-scalar courtyards joined by boulevards and streets.

3. CROSSINGS
The area is made more permeable by means of crossings and links over the barriers. The UER which was intended as a fast connection now becomes part of the open space framework. Crossings every 500 - 800 m over the water course makes the space more accessible.

4. PROGRAMS
A hierarchy of programs and nodes are evolved from the site conditions. Those nearer to regional connections serve higher scales as well. Existing wilderness and smaller water bodies serve as localised nodes to which diversity is introduced by addition of new functions.

DESIGN PRINCIPLES FOR GREEN INFRASTRUCTURE

1. BARRIERS
2. INTERFACES
3. CROSSINGS
4. PROGRAMS
PROPOSED OPEN SPACE STRATEGY: CREATION OF INTERFACE

The interfaces are created following the organic structure of the existing agricultural plots. The spacing is in such a way that every urbanized area is in proximity to facilities of the green infrastructure. In this way, the green infrastructure is embedded into the system rather than an arbitrary after thought.
PROPOSED OPEN SPACE STRATEGY: EVOLVING PROGRAMS

Based on the context, various possibilities of programs are devised. These offer spatial quality, employment opportunities and recreational options.

- Localised parks, permeable surface, water retention, local water purification, drinking water alongside existing ponds
- Permanent/Temporary functions in big open spaces alongside primary routes
- Reconfigure localised open spaces for local markets, farmers markets, corner shops, vegetable gardens, temporary programs to benefit from multi-scalar green infrastructure links
- Reinforce forestry at existing vegetation precinct
- Water retention in existing wetland precinct
- Recreational scenic route alongside main water course-permeable surface, resting points, street lights
- Agro-based functions, commercial farming, small-scale industries and services of regional significance alongside UER
PROPOSED MOBILITY STRATEGY: RECONFIGURING LINEAR FAMILIARITIES

The mobility is reconfigured to suit the needs of the local population. It functions as ecological links and corridors at the regional scale. New bus routes are introduced to make public transport accessible and within walking distance to existing urbanization and new development.

- Bike paths and pedestrian paths are reinforced to increase accessibility.
- Urban extension road becomes regional ecological corridor connecting different scales
- Extending bus routes alongside village boundary road
- Reinforcing ecology, bike paths and pedestrian paths alongside major village roads
- Intermodal crossing: Metro-feeder, Bus, auto-rickshaw, bike, pedestrian
PROPOSED MOBILITY STRATEGY: EVOLVING NEW CENTRALITIES

New centralities are evolved based on contextual demands. The hierarchy of nodes is decided by their location, proximity to facilities and their accessibility.

The primary node is situated on the UER and attains functions of regional significance. It will also have metro - feeder stops and motorway links.

The tertiary and quarternary nodes are evolved as part of later phasing once the area becomes busier. The idea is to have public transport stops at all the nodes within walking distance of all types of urban development.

Proposed bike and foot bridges to increase permeability; cutting through wilderness alongside main water course. As part of phasing, ferries can be used for crossing initially.
PROPOSED MOBILITY STRATEGY: EVOLVING SLOW MOBILITY

Bike routes and pedestrian paths are evolved organically according to existing morphology of dirt roads bordering agricultural roads. This is to break the sectorial pattern which is the norm in zonal development plans. The bike routes and pedestrian paths thus introduce inter-modality in the space.
The final strategy is a combination of the open space, production and mobility systems. This green infrastructure system which is multi-scalar and multifunctional ensures that the system is a permanent fixture in opposition to the arbitrary green belt.

In a fully urbanized or a partially urbanized scenario, the green infrastructure is a flexible spatial tool which can be reconfigured to serve the transforming situations. It creates a space which is used by diverse social, economic and demographic groups. The hierarchy of nodes establishes gravity points which can serve regional and local scales.

The valorization of localised spaces ensures continuity of the system into the rural villages as well.
INTERACTION OF EXISTING URBAN FORM WITH RECONFIGURED OPEN SPACE, PRODUCTION AND MOBILITY SYSTEMS

This final outcome displays the interaction and functioning of existing urban form with reconfigured open space, production and mobility systems.

A centrality is devised every 500 - 800 m promoting walking or biking as part of one’s daily activities. Depending on the hierarchy of the centralities, these may have district centres offering commercial, hospitality, recreational and medical facilities.

The facilities are such that they are publicly accessible and seeks to promote equity.

The highlighted area of 1 x 1 sq.km is used to illustrate a simulation of the proposal.
Discussing the relation between built and unbuilt space

The building typology is evolved as a combination of the historical urban forms of the village courtyard house and the British verandah house. However, these forms were low density single floor houses.

To address the housing issues in Delhi, multi-storeyed urban blocks are envisaged without compromising on open space. Mid to high-rise terrace houses surrounded by and benefiting from green infrastructure is evolved as a result.

A transition from outside to inside is achieved through extension of public open space realm and a category of porous spaces in the urban block. These porous spaces are flexible, interstitial spaces catering to diverse functions.

Figure showing the derivation of building typologies from traditional urban forms
This chapter presents how the principles derived may be embedded in the planning framework by means of design principles. As negotiation and governance also plays a crucial role in implementation of new planning principles, proposals are made with regard to additional bodies in the existing planning institutions. Reflections are made with respect to how planning and design can mutually inform to counter fragmentation.
Reflection on region

The region of Delhi currently functions as largely monocentric with Delhi as its crux surrounded by satellite cities which have hinged on their proximity to Delhi to expand. (Figure a)

Being the political, economic and cultural nerve centre along with its global aspirations, none of the satellite cities were evolved enough to alleviate the expansion pressure on Delhi. With the city expanding four fold in six decades, there was evidently the need for a regional plan to counter the mass migration.

The National Capital Region was evolved with this projected vision, wherein the region as a whole could be developed in a holistic manner. Infrastructure linkages were given priority. The intention was to accord a character to each of these satellite cities where they form a robust substitute for all facilities that Delhi imparts. (Figure b)

The idea of imparting character to the satellite cities to rejuvenate a region has been used in many planning strategies in various city regions around the world. However, it is to be understood that the cities which surround Delhi already have an inherent mixed use character; a strength that should be preserved.

Even though NCR Planning Board Act was passed in 1985, the strategies accompanying it are at a nascent stage. One could even say that this is perhaps the right time to intervene, integrate and empower the peri-urban areas which are never considered in planning documents. Hence as shown in Figure c, a regional strategy which incorporates the needs of the peri-urban areas, capitalizing on inherent spatial strengths, creating spatial quality and means of livelihood should be promoted.

The planning and design principles on the subsequent pages aim to inform the importance of promoting the endogenous potentials of the peri-urban areas into the region.
This principle seeks to increase the overall green in the peri-urban space. Current planning provisions displaces industries which are harmful to residential areas. A proper classification of agro-based light industries should be combined with a provision of multi-functional green buffer. The green infrastructure immediately surrounding the industrial area can be thick vegetation acting as carbon sink. Those nearer periphery of residential areas can function as parks, recreational space, water retention and space for informal trade.

This principle seeks to promote an equity in distribution of public open space. The clause in MPD 2021 stipulates 15 - 20% of land for green belt and green open spaces. The green belt as a spatial tool has failed to secure the open space in the city. Instead of the green belt, this principle should be used as a guiding tool to enforce green infrastructure with dedicated recreational functions. The public parks can be orientation points for housing for diverse income groups.

This principle seeks to address the negative implications of crude infrastructure. The infrastructure should be embedded in a hierarchy of courtyards which combine production, open space and soft mobility.

This principle tries to ultimately promote multi-scalar benefits and increase chances of employment, quality of life and services to the local population.

Multi - Criteria Oriented design principles
This principle seeks to promote inclusive built forms in green infrastructure. In dedicated Green infrastructure spaces which occur alongside regional corridors, built forms which cater to multiple scales are permitted. However, these should not be exclusive shopping malls. These should ascribe to the typology of the district centre to ensure local scale street vitality along regional infrastructure. The commercial spaces in ground floor should be accessible from outside.

This principle seeks to increase positive chances of negotiation with private developers and real estate agencies. If the private developers agree to give away a space that would have become an excluded privatized space to the public realm, they would get a floor space incentive. This would leave provision for dedicated spaces for green infrastructure and informal trade thus promoting street vitality.

This principle seeks to promote equity in distribution of housing. A single block has to have a mix of affordable and HIG housing. The standards that have been stipulated in MPD 2021 for housing typologies enforce segregation. The space standards that are given in MPD 2021 maybe used to complement this design principle. Affordable housing may be mid-rise without lifts. HIG housing may be high rise with basement parking. Design of the block should be in such a way that every income group should have easy access to public transport, amenities and open spaces.
This principle seeks to alleviate the problem of water scarcity in Delhi. This is done by valorizing every water source in the area right from encroached village ponds, newly discovered water bodies and polluted streams to act as sources for water retention. Decentralized waste and water treatment plants, technical awareness about desilting processes should accompany this provision.

Reconfiguring dirt roads

Current mobility preference for bikes in Delhi is by the lower economic groups. This principle seeks to promote equity in the use of soft mobility. Dirt roads can be converted to bike paths and pedestrian routes with minimum investment and without compromising on porous paving. By articulating the paths along scenic routes, its recreational use can penetrate the collective consciousness which can trigger its benefit as a primary mobility in later phases.

Preserving nallahs and village ponds

This principle seeks to activate micro spaces which are now decrepit for diverse functional uses. This should be done by promoting local markets and farm produce and providing incentives for the same. By ensuring regional connectivity, this principle can seek to widen the outreach of functional micro-spaces as multi-scalar anchor points. This enables to use porosity in existing urban tissue to maximum advantage.

Micro-space activation
A participatory planning process is envisaged for the green infrastructure to be embedded in the planning framework. In the absence of urban local bodies, a number of aiding negotiation stakeholders have to act as mediators between the active and passive stakeholders. These can include experts who can help in informed decisions as to appropriation of land for green infrastructure as well as NGOs and volunteers who can help in awareness of the same.
Delhi is a city with many complexities, these manifesting at a maximum in its peri-urban space. Over the ages, the city has witnessed the triumph and defeat of various political powers. This has resulted in a rich cultural milieu in the city, remnants of each historical period co-existing and lending Delhi its unique charm.

Its position as a national political capital and related complex governance, a widening gap between the have's and have-not's, an emerging dominance of the private real estate sector, the throes of migrating population which is threatening to saturate the city’s resources, the various large infrastructural projects and proposals which seem to possess a lack of rationale among other issues define Delhi’s over-arching conflicts.

The rapid population rise indicates the increase in passive stakeholders, wherein the stakeholders are reduced to an invisible entity with no power of negotiation. In the case of the weakest stakeholders, most often with no power of choice for decision making. This has meant a visible segregation in distribution of resources and quality.

And most often, in the quest for a global identity and as claimed solutions to some issues, the more pressing issues which require urgent responses are ignored.

The pressing issues include the severe water shortage, environmental issues, loss of productive landscapes and biodiversity, all of which through time have robbed the city of its historic aesthetics. The infrastructural proposals are mainly car-based which does not really reduce the congestion experienced by the city. The same can be said of the ambitious metro rail plans.

This decadence has most affected the in-between zones, a lost territory to which all the problems affecting the city core are pushed to. It has meant an urban spatial condition where very diverse income groups reside next to each other without having the choice of availing the same facilities.

Evidently, what the city needs are new tools, those that can promote equity and enable a progressive integration of the neglected periphery into the city and the region.
By reflecting on Delhi’s complexities, particularly in the peri-urban area, the space assumes the role of a testing ground for new spatial tools. These spatial tools while being inspired by theoretical background, also stems from Delhi’s rich cultural tradition and the apprehension of spaces by the users until the recent past. This is in contrast to the present absence of rationale in the planning documents which threatens to obliterate these traditional spatial strengths. It also means tapping into the endogenous potentials of the largely neglected peri-urban areas.

The complexities associated with the city’s fringe were dissected with the use of four core criteria which make up the city’s fabric: Mobility, Open space, Production and Urban Form which enabled to identify the lapses and points of conflict between the criteria. These were analysed separately to simplify the process of analysis and were then re-assembled and super-imposed to showcase the overarching complexity.

The idea of green infrastructure which has been employed as an alternate spatial tool is a call for a larger shift in the current decadent planning vocabulary. An immediate switch from green belt to green infrastructure may be impossible. A progressive integration of the tool through local scale principles which promote multi-functionality, whereby monitoring of the implementation is carried out can be a starting point.

The shift in public perception is also a necessity for this change to happen. Individuals who are experts in the idea may champion the idea, market the idea to various levels of governance, take aid of volunteers and NGOs, afforestation programmes where even local people are encouraged to participate are ways in which the new tool can be embedded in public consciousness as well.

Also, an overnight shift to a public acceptance of soft mobility may be romanticizing the idea. One cannot deny the dominance of car-based transport and the role of individual car transport as a status symbol, particularly with the rise of the Indian middle class population. However, what can be done to subdue this domination is by embedding the crude infrastructure with the elements of green infrastructure, exploring recreational possibilities of soft mobility thereby softening the negative impact of automobile-based transport in the process.

The nascent possibilities in the regional and city planning framework have to be reinforced and complemented with design principles as well for connecting multiple scales.

The primary objective of this thesis is not a definitive answer to all the urban issues that are present in the city’s peri - urban area. What it aims is to offer a new perspective; an alternative planning approach in opposition to the current over-arching master plan.

It also hopes to inform the planning community in Delhi of the issue of pushing the problems to the city’s fringe without solving it appropriately.

Through the process, it hopes to renew debates on appropriate contextual solutions on water shortage, environmental issues and housing possibilities.

It also hopes to become a lens into ways in which Delhi can tap into its own rich tradition to come up with unique solutions to its urban issues instead of an aspiration for global city hierarchy thereby witnessing a future where it becomes a paler emulation of other cities.

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