CITY LEVEL PROJECTS

LADO SARAI - II

Site Specific Design for Ward Number 169

(An ISO 9001 : 2008 Certified Organisation)

Delhi Urban Art Commission

The Delhi Urban Art Commission was set up by an Act of Parliament in 1973 to "advise the Government of India in the matter of preserving, developing and maintaining the aesthetic quality of urban and environmental design within Delhi and to provide advice and guidance to any local body in respect of any project of building operations or engineering operations or any development proposal which affects or is like to affect the skyline or the aesthetic quality of the surroundings or any public amenity provided therein".

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Delhi Urban Art Commission

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DELHI URBAN ART COMMISSION with gratitude duly acknowledges the valuable contributions of the following in making this report:

Organisations / Others

Ministry of Urban Development
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Government of National Capital Territory of Delhi
North Delhi Municipal Corporation
East Delhi Municipal Corporation
South Delhi Municipal Corporation
New Delhi Municipal Council
Geospatial Delhi Limited
Delhi Metro Rail Corporation
Delhi Urban Shelter Improvement Board
BSES Rajdhani Power Limited
BSES Yamuna Power Limited
RWA's and Area Councillors
Google Earth

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Preface

The city of Delhi, capital of this vast land of diversities, is a city laden with layers of history, a place where civilizations have lived, prospered and perished over centuries. The modern city today, built over and around a rich tapestry of heritage, presents an opportunity at every turn, to allow for co-existence of the past, present and the future. In order to understand this multidimensional urban spectrum and attempt to plan the future, various city level studies have been initiated by the DUAC. I hope that these studies will help the planners of modern day Delhi to carefully articulate urban space, structure, form and environment and sensitively address future requirements.

I convey my thanks to all the Consultants and Members of the Commission who have tirelessly worked on this research project to bring out this document. I also take this opportunity to place on record my sincere appreciation of the efforts of Secretary and other staff of DUAC for providing the necessary administrative support to make this happen.

I fondly hope that the authorities of the local, state and national government take these studies seriously and implement, in right earnest, the suggestions given herein.

October, 2017

Sd/-
Prof. Dr. P.S.N. Rao
Chairman, DUAC

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Summary

Lado Sarai has been the subject of research on the planned development of urban villages and unauthorized colonies. The first phase of the project concentrated on the immediate problems generated by the inter-city transport arteries, and the consequent vehicular parking along the edges of the village. Another consequence of the Master Plan Road Network was the increase in new offices, studios, and galleries, because of affordable space available in the village.

The second phase of the project focuses on environmental improvement of the old village. Discussions with residents of the village conducted in the first phase highlighted the problem of managing public open spaces, including the main commercial lifeline of old MB Road. A detailed environmental survey became the entry point for understanding the life patterns of the resident community and inviting their participation in the planned development of their village.

The main issues of environmental dysfunction were evident in the public open spaces, and these were related to surface water flow and disorderly vehicular traffic. It was noted that an underground sewage network had been installed a few years ago by the municipality, but this did not appear to be functioning. As a consequence of the dysfunctional utilities, the public open spaces were not well used by the residents, and this led to further environmental decay. An organized set of community meetings with all stakeholders as well as local authority officials, and elected representatives, were held at the site and at the DUAC office. A consensus emerged that the primary issue to be addressed was drainage and sewage treatment, since the network already installed was not functional.

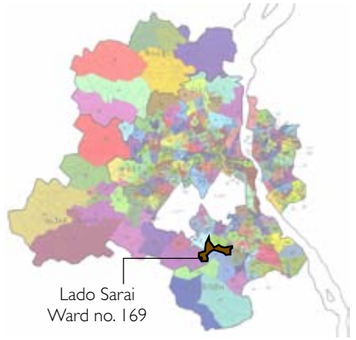
Ten significant public open spaces were identified in the survey. Of these, the most important was the central open space around the Shiv Mandir. It was agreed with the community that the adjoining area known as Shiv Mandir Chowk, would serve as the ideal example to demonstrate integrated environmental improvement action with active involvement of the local residents.

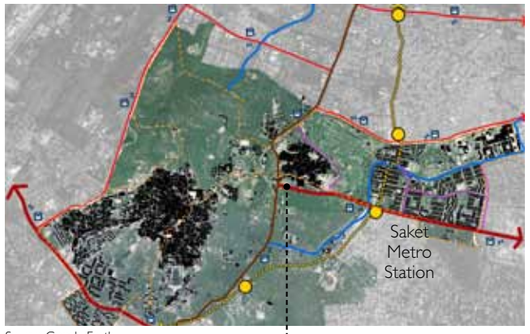
The demonstration project was a part of a comprehensive plan drawn up for the whole village to address the problems diagnosed: provision of civic amenities in public open spaces; sewage treatment facilities in a decentralized manner; rainwater harvesting with management of storm water; and a pedestrian friendly mobility scheme. As part of this plan, Old MB Road and the area forming its drainage basin, with the Shiv Mandir Chowk at its centre, became the starting point of the urban renewal proposal.

An important part of the project work has been the documentation of the entire exercise to provide learning for extending the work to other informal settlements of Delhi.

The multiplicity of agencies for the implementation of infrastructure work has been a major problem in providing urban utilities and their maintenance. The DUAC, which has a regulatory function over local authorities, is ideally placed to play an overarching role of coordinating local agencies for implementation of these works. The Lado Sarai study shows the way to overcome this lacuna in governance and provides a basis for the rejuvenation of informal settlements, which form seventy five per cent of the urban fabric of the city of Delhi.

1.1 City Level Location





Source: Google Earth

The ward lies in the south zone of MCD, under the jurisdiction of the South Delhi Municipal Corporation. Most of the ward lies in Zone F of the Delhi Master Plan, and a small portion of the ward lies in Zone J.

Source: MCD Ward Map, 2007

2.1 Existing Village Structure

Village Structure Plan

Roads

The Village has an old core situated on the hill and is supposedly the only part inside the Lal Dora area. It is surrounded by three main roads.

1. Old MB Road – This is the ancient route connecting Mehrauli to Badarpur
2. Khaliya Gali – This used to be an open drain running towards agriculture fields to the north of the village
3. Hanuman Mandir Gali – Originally connected the core of the village to the agriculture fields, starting from the original location of johar to Hanuman Mandir on Phirni Road.

Old MB Road

Khaliya Gali

Hanuman Mandir Gali

Chowks

Kudi Chowk is the oldest chowk and is at the highest point of the village. Shiv Mandir Chowk, Khaliya Chowk, Baande ki Chaupal Chowk and Harijan Chaupal Chowk are other important open spaces. Another open space, simply called Chowk, which used to form the edge of the core, is now situated in the centre of the village.

Community Spaces

Community spaces include a number of chaupals, various kinds of chowks, an MCD park and a Panchayat Ghar.

A small chowk behind the Panchayat Ghar

Harijan Chaupal

Panchayat Ghar and MCD Park

Institutions

Institutions include Government Primary and Secondary Schools, a private school run by an NGO, dilapidated ancient structures and temples.

Hanuman Mandir

Dilapidated Tomb

Kali Mandir

2.2 Initial Observations

Water System

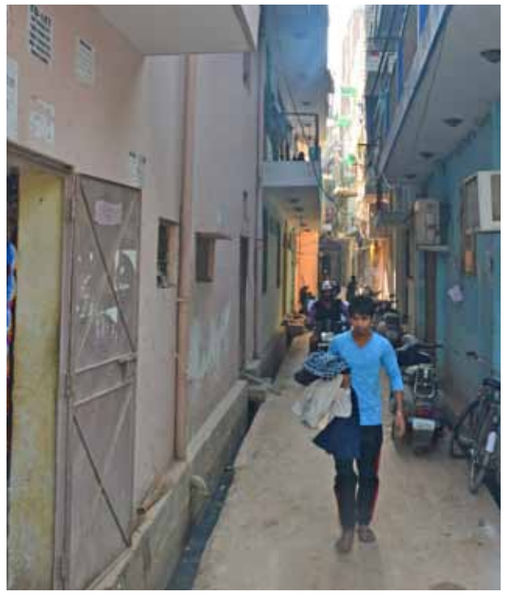
Abandoned wells

Scarcity of water

Open drains filled with sewage

Dry open drains filled with garbage

Preliminary observations revealed that the village has a sewer system but this is in a dilapidated condition. There are some open drains connected to these sewers which carry rainwater and sewage. The villagers have developed their own systems of draining rainwater by opening slits in sewers and extending sewer lines into new streets. To augment water supply residents use pumps during limited hours of supply.



Unconnected drains filled with stagnant sewerage

Connections in sewer lines transferring surface water

Water Supply Problem

There is a major water supply problem in the old core of the village. There are three main reasons for this problem:

1. Extremely high density
2. Bore wells at lower altitude
3. Private pumps connected to the main water pipe do not allow water to reach the last point of supply.

Areas near bore well with better supply of water

Areas with water supply problem

Open Spaces

Irregular car parking

Dumping of construction material

Private usage for animal husbandry

Dumping of garbage

Underutilized open space

Backward sewerage flow and rain waterlogging

UNDERSTANDING EXISTING BUILT ENVIRONMENT

2.3 Discussions with Stakeholders and Public Meetings

To familiarize ourselves with the conditions in the village and its cultural background, we entered into a dialogue with various stakeholders, some of who had participated in discussions during Phase I, and some who were new to the group.

Ward Councillor

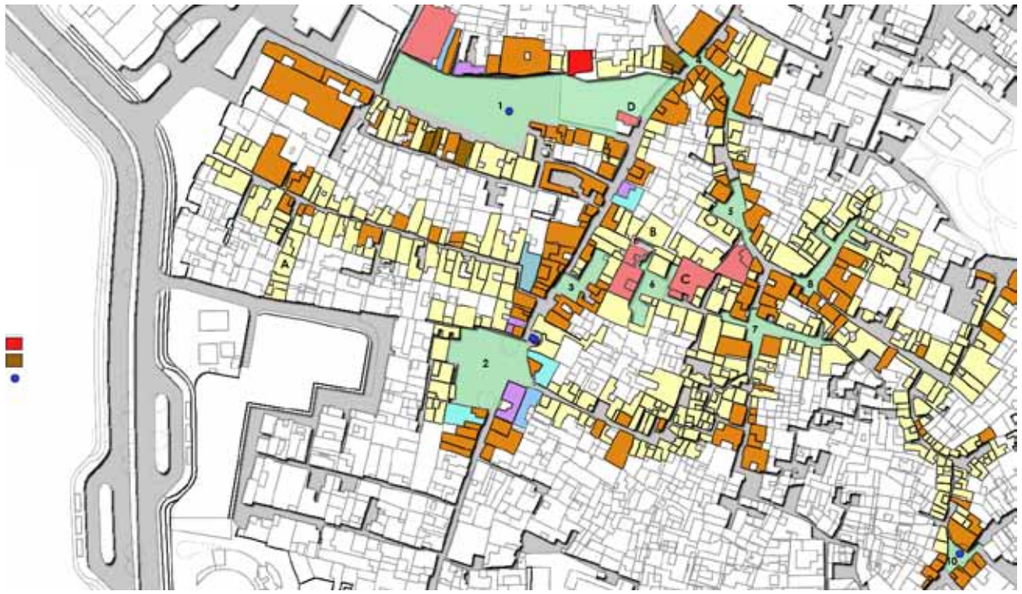
During the discussions with the Ward Councillor, we learnt that there is a drainage and sewerage project under construction by the PWD on Old MB Road. The project includes the building of a storm water drain and surfacing of the road. It is proposed that the sewage of Old MB Road, Khaliya Gali and Hanuman Gali will be connected to the Saket open drain and then further connected to the Mehrauli STP. The Ward Councillor suggested that Mohalla Sabhas should be organised in the village to take up the improvement program. The issues discussed were: school infrastructure, rainwater harvesting system, parking beneath green areas and the three underpasses proposed in Phase I.

S.E., Delhi Jal Board

A discussion was held with S.E. (South) in the Delhi Jal Board office to understand ongoing projects on Old MB Road, including the sewerage system connection to the Mehrauli STP. Documents related to these works were not made available.

Indigenous Resident

A local resident took us into village interior and introduced us to the dynamics of the communities residing within. This made us aware of the open space structure and associated issues and problems.



Site visit mapping

He had observations about the Mohalla Sabha and was concerned about its potential due to the fact that no community leadership system existed in the village.

He mentioned that water supply is provided by bore wells constructed by the DJB near the underground water tank, near Kali Mandir and near the DDA housing. The areas which are far away from these points receive water with a low pressure for a maximum of 30 minutes out of the total 40 minutes of supply by the DJB. The area towards Anuvrat Marg is well serviced by water supply from the DJB reservoir in Mehrauli

Major Communities in Lado Sarai

Fashion designer working in Lado Sarai

A fashion designer gave us an insight into how two different worlds co-exist within this upcoming urban village. There is no communication between the indigenous community and the artist's group. He rarely enters the interiors of the village and finds the people of the village harsh and difficult to communicate with.

There are no recreational spaces in or around the village for the cosmopolitan newcomer, be it designers, students or visitors. Lack of parking facilities, and traffic jams caused by the CNG station were his main concerns. In his opinion, more designers are coming to Lado Sarai because there are resident muslim artisans in the village and also due to the availability of large floor spaces for rent.

Public Meeting with RWA

A meeting was organised to discuss the first phase proposals and to diagnose acts of Phase II.

The main concerns of the RWA officials were parking facilities for residents and visitors, availability of space for sports facilities and for family functions. Their main income is from renting out their properties and were concerned with value enhancement.

The site study regarding available open spaces, water systems and their inter-relationship was discussed. They appreciated the idea of rainwater harvesting in open spaces for community usage and suggested that this should lead to revival of wells in the locality.

The members welcomed the idea of a Mohalla Sabha and came forward with suggestions to support the activity. They mentioned issues such as the of lack of communication between government bodies and local people, and the importance of better communication for the benefit of inhabitants.

Site Analysis

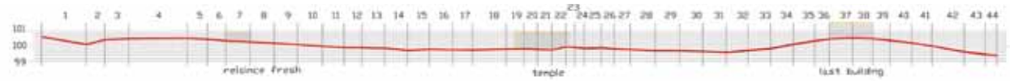
- Physical Survey of Three Roads
  - Old MB Road
  - Khaliya Gali
  - Hanuman Mandir Gali
- Existing Drainage System
  - Infrastructure
  - Surface Water Flow
- Existing Open Spaces
  - Key Map
  - Diagnostic Survey

3.1 Physical Survey of Three Roads

3.1.1 Old MB Road

Shiv Mandir Chowk forms a depression which indicates that the village johar was originally located next to this temple.

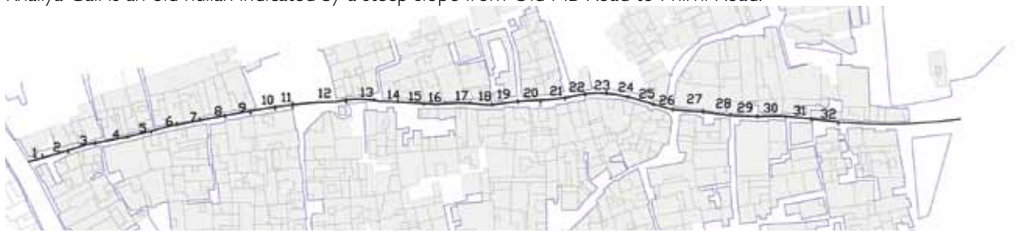
Old MB Road Plan



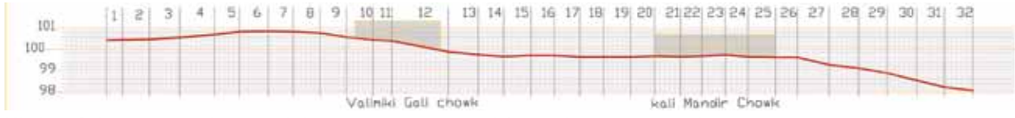
Old MB Road section with vertical dimension exaggerated for analysing topography

3.1.2 Khaliya Gali

Khaliya Gali is an old nullah indicated by a steep slope from Old MB Road to Phirni Road.



Khaliya Gali Plan

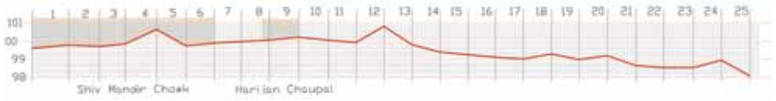


Khaliya Gali section with vertical dimension exaggerated for analysing topography

3.1.3 Hanuman Mandir Gali

Starting at Shiv Mandir Chowk, with the Harijan chaupal in the centre, and a slope towards Phirni Road.

Hanuman Gali Plan



Hanuman Gali section with vertical dimension exaggerated for analysing topography

Key Plan

3.2 Existing Drainage System

After conducting a physical survey of the three main streets, several site visits were made to comprehend village topography and to map the direction of surface water flow.

Waterlogging and sewerage back flow was noted in several mohallas. This made it necessary to map the existing infrastructure, particularly interface of open drains, sewer lines and contrary locations of water movement as following the topography.

Street in the old core

A walking survey

3.2.1 Infrastructure

Open Drains

We were able to identify four kinds of open drains:

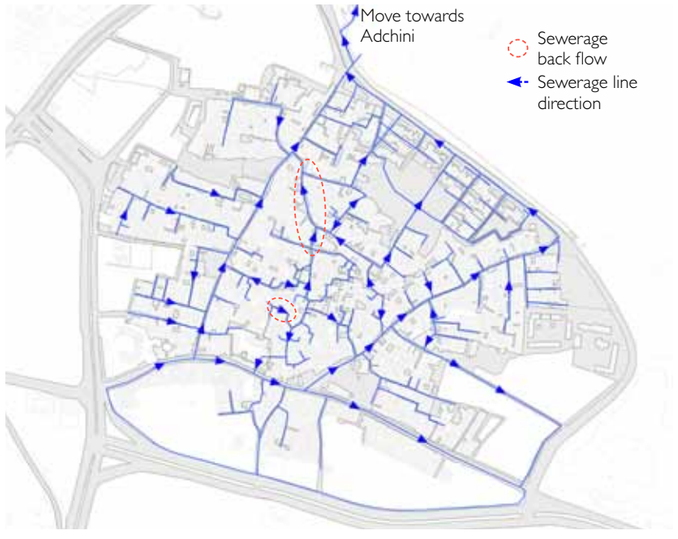
1. Dry drains not carrying any liquid but used as dumping space for garbage.
2. Drain carrying rainwater but abruptly ending without any outfall.
3. Drains carrying rainwater and connected to sewer lines.
4. Drains carrying sewerage from buildings and connected to sewer lines.

Existing Open Drains

Sewer lines

Sewer lines installed by Delhi Jal Board have the following problems:

1. Sewer lines are dysfunctional at places due to high invert levels. At two locations in the inner core villagers are affected by sewerage back flow.
2. At Old MB Road sewerage flows towards the southeast on to Phirni Road with no possible outfall.
3. Due to scarcity of water supply there is a problem of dry sewer lines.



Existing Sewer Lines

3.2.2 Surface Water Flow

Water flows in two directions in the three main galis as shown in the map

Major waterlogging is noted at the following places:

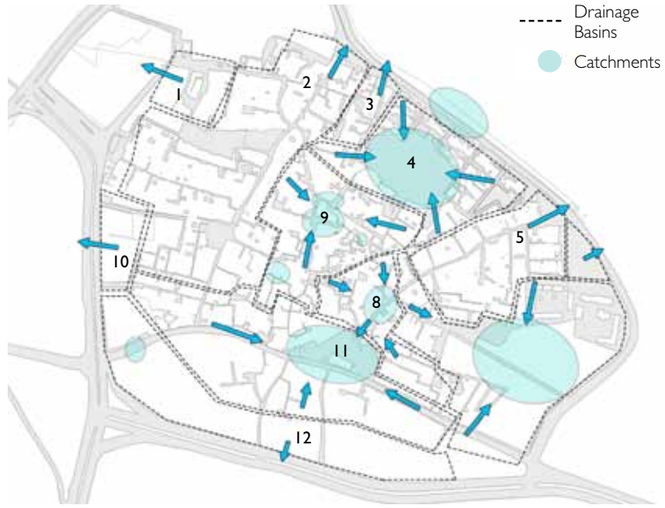
1. DDA Open Land
2. Chowk
3. Harijan Chuapal
4. Shiv Mandir Chowk

Surface Water Flow Mapping

There are a total of 12 basins formed:

1. Hospital Basin
2. Khaliya Basin
3. Baande Basin
4. DDA Basin
5. Hanuman Mandir Basin
6. School Basin
7. Prem Singh Basin
8. Harijan Chaupal Basin
9. Chowk Basin
10. CNG Basin
11. Old MB Road Basin
12. MB Road Basin

As per analysis there is an opportunity of storing/saving 50 per cent of rainwater within Lado Sarai.



Formation of Basins and Catchment Areas

Chowk catchment

DDA open land catchment

3.3 Existing Open Spaces

3.3.1 Key Map

Ten open spaces have been identified in the village which can be rejuvenated and utilized for the betterment of the community.

1. Kali Mandir Chowk
2. Khaliya Chowk
3. Valmiki Gali Chowk
4. Anurag Industrial Centre Chowk
5. Baande ki Chaupal
6. Chowk
7. Anurag School Chowk
8. Harijan Chaupal Chowk
9. Shiv Mandir Chowk
10. Prem Singh Gali

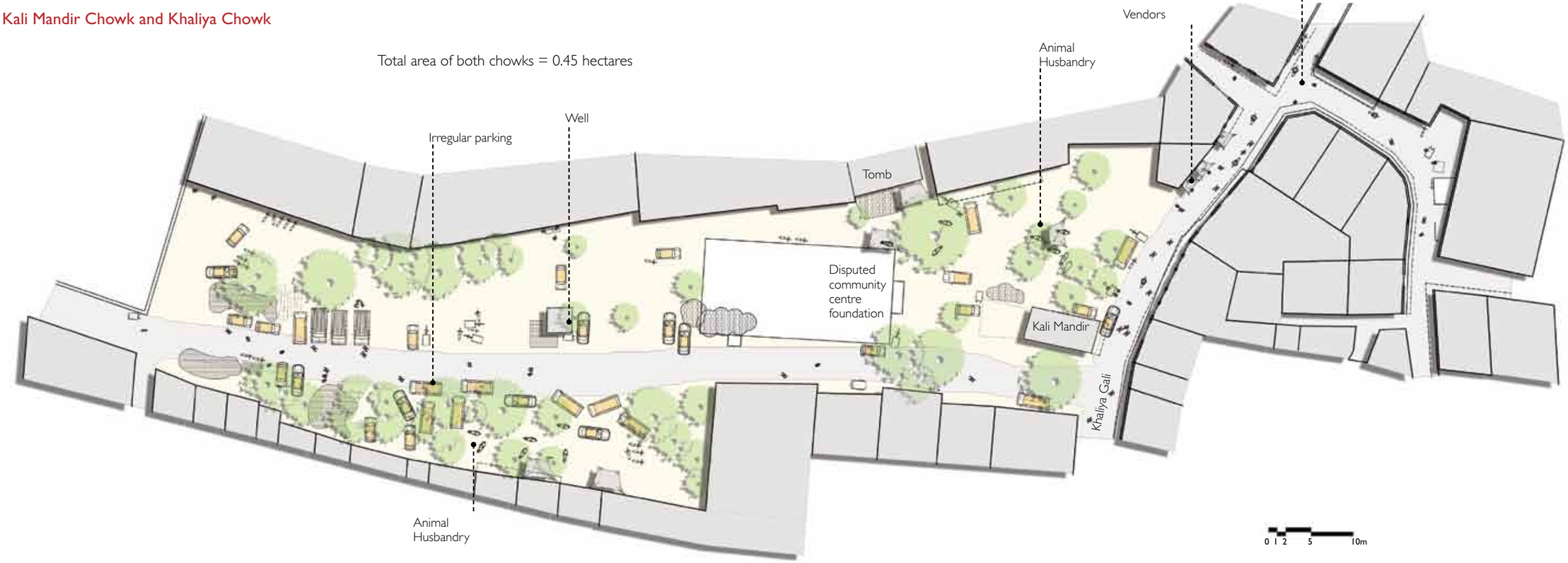
Existing Open Spaces

3.3.2 Diagnostic Survey

A detailed physical survey was done for each open space including topography analysis and activity mapping to understand the scope for improvement.

Kali Mandir Chowk and Khaliya Chowk

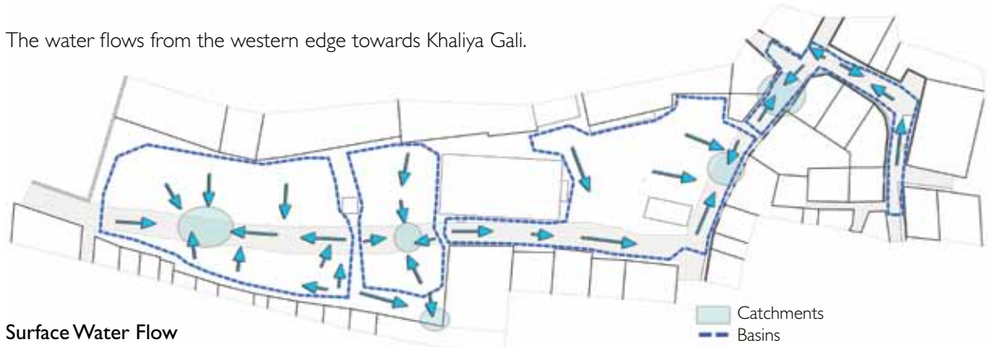
Total area of both chowks = 0.45 hectares



Activity Analysis

Kali Mandir Chowk
This is the area west of Kali Mandir and connects Khaliya Gali with Aurobindo Marg bus stop.
The major activities include:
1. Parking place for cars and tempos.
2. Animal husbandry done by villagers as this is one of the few big open spaces remaining in the village.
3. There is a disputed community centre foundation in front of the tomb. During construction an objection was raised by the Archeological Survey of India as it lies in the proximity of an old monument. Now residents have installed a net around the edge and use it as a playground.
4. There are some coaching institutes at the entrance of this open space.
5. Kali Mandir faces the houses on the chowk and behind it is an open space.
6. There are welding workshops, construction material godowns and garages which encourage a lot of loading and unloading vehicular activities.

The water flows from the western edge towards Khaliya Gali.



Surface Water Flow

Valmiki Gali Chowk

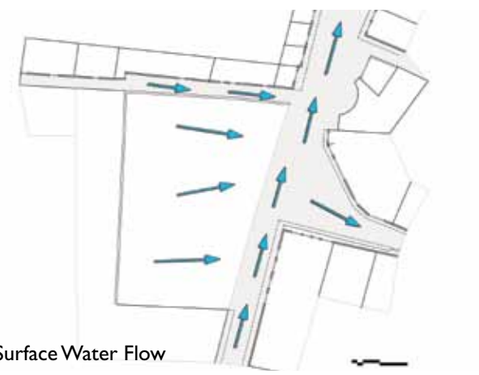
Activity Analysis

This chowk is exactly in the centre of Khaliya Gali and is created by the intersecting Valmiki Gali coming from the old core.

Most of it consists of a private plot under dispute that is used by neighbouring residents to dump construction material, for other activities such as animal husbandry and by vendors such as cobblers for repairing shoes.

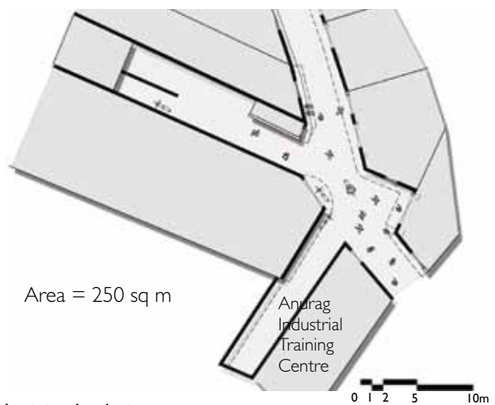
Total area including private plot = 0.4 hectares
(excluding private plot = 0.05 hectare/500 sq m)

The overall slope is towards the north.

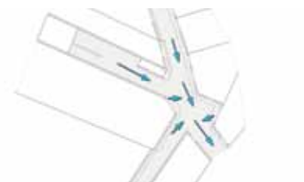


Surface Water Flow

Anurag Industrial Training Centre Chowk



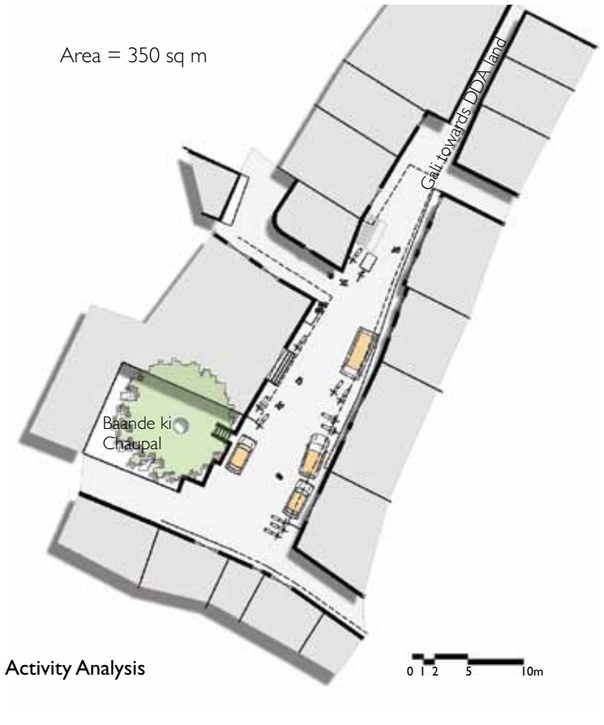
Activity Analysis



Surface Water Flow

This is a thoroughfare between Khaliya Chowk and the old core, mainly used by pedestrians and two-wheelers. It is surrounded by residences, a few small local shops and the Anurag Industrial Training Centre. Its natural slope is towards the south, but the sewer line here flows towards the north.

Baande ki Chaupal, Chowk



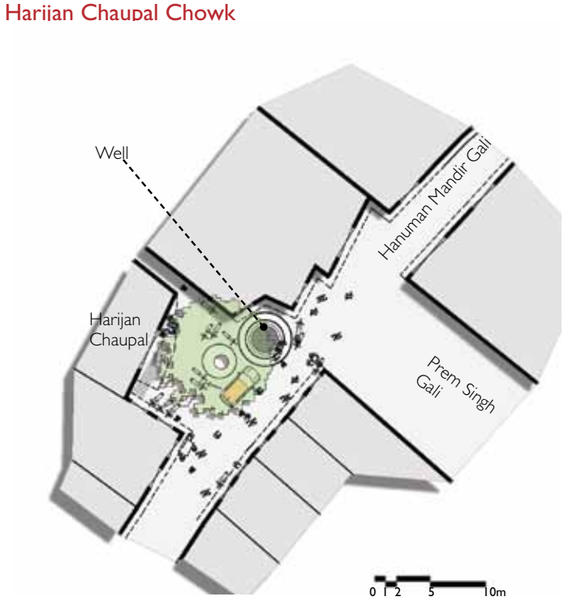
Activity Analysis

Surface water flow

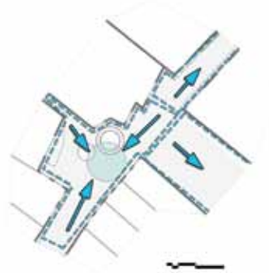
This is an approach road to Baande ka Mohalla, but because of its shape, it forms a square. Surrounded by residences and a chaupal it is an underutilized space which is mainly used as a parking space for cars and two-wheelers.

In one corner is a laundryman, and there is a small shop, which is generally closed.

Harijan Chaupal Chowk



Activity Analysis



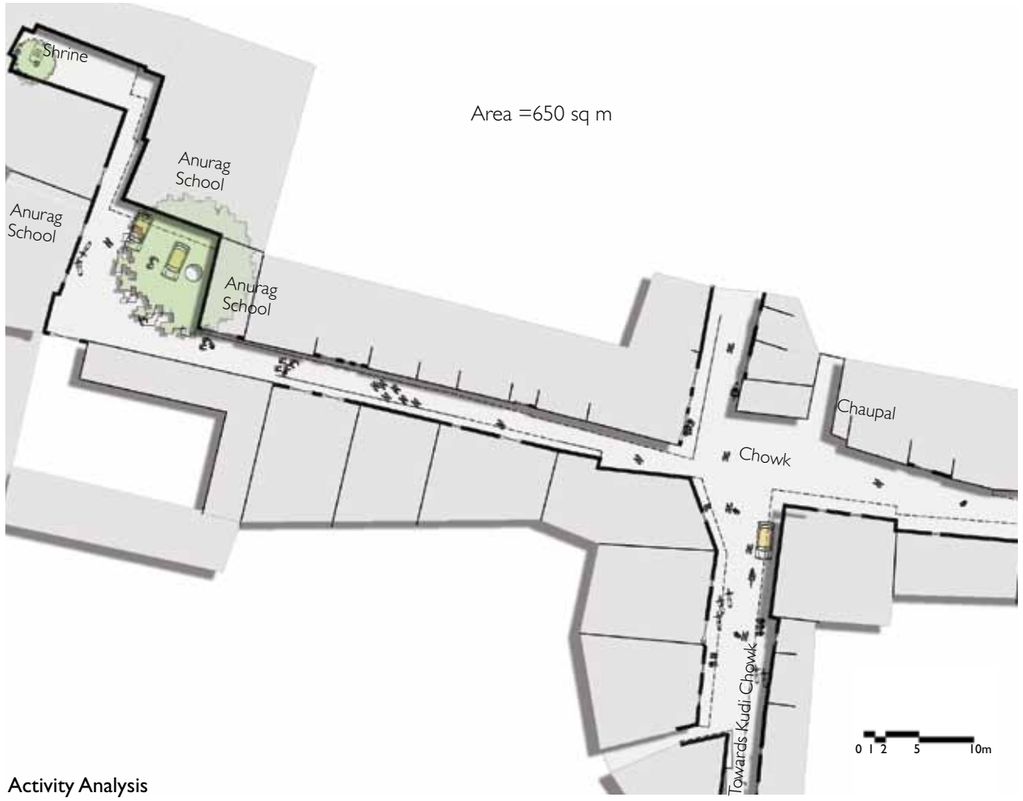
Surface water flow

Area = 250 sq mt

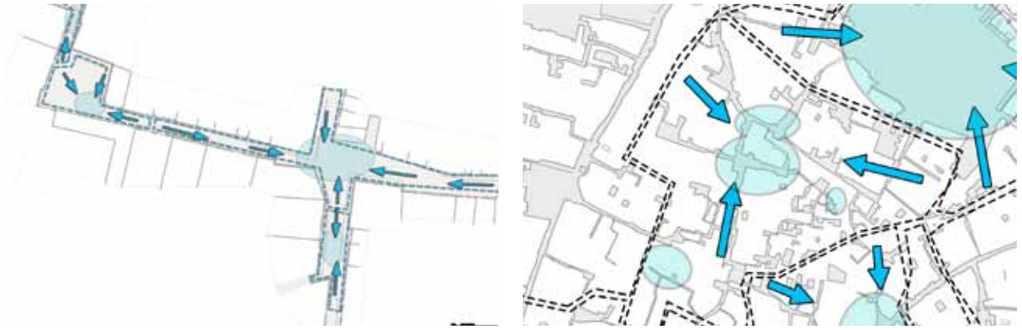
This space has a mix of activities. It forms a busy intersection of routes and collects Rainwater from all directions. It is the central point of Hanuman Mandir Gali bordered by the Harijan Chaupal on one side with a strategically located well.

SITE ANALYSIS

Chowk and Anurag School Chowk



Activity Analysis



Surface Water Flow

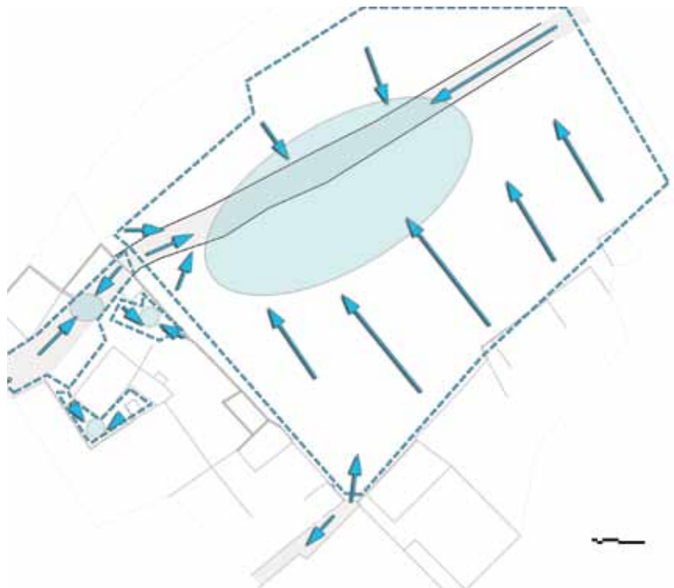
Anurag School Chowk area =250 sq m
Chowk =180sq m

This is the centre of the village and with the Baande ki chaupal chowk, it forms a central catchment basin over an area of three hectares. Anurag Society, an NGO school has three sides of the open space. A small ancestral shrine forms an extention to the open space. It is utilized by school students and is very active during the morning.

An open space popularly known as "Chowk" is surrounded mainly by residences, a few small shops, a dilapidated private building and a chaupal. There is major problem of waterlogging and mixing of sewage during the rains, due to the rising of the land level towards the northern edge. It is a challenge to deal with the water here as there is no availability of space for storage or an existing well to recharge ground water.

Prem Singh Gali

Activity Analysis



Surface Water Flow

This is the largest open space amongst those identified. It is surrounded by residences on the northern side, a handicraft emporium on southern side, a temple boundary wall on the western side and empty land allotted to the Aurobindo College on the eastern side.

It is mainly used for parking cars and buses that serve offices inside the village.

The catchment of this basin is 4.58 hectares.

Shiv Mandir Chowk

This is the heart of the village and is situated along Old MB Road which is the high street. Oral history sources indicate that there was a johar next to the Shiv Mandir, on the edge of the original habitation, which forms the Lal Dora. Shiv Mandir Chowk houses religious, recreational and transit activities.

A. Old MB Road

Original Layout of Shiv Mandir Chowk

Source : As recounted by old residents

B. Shiv Mandir

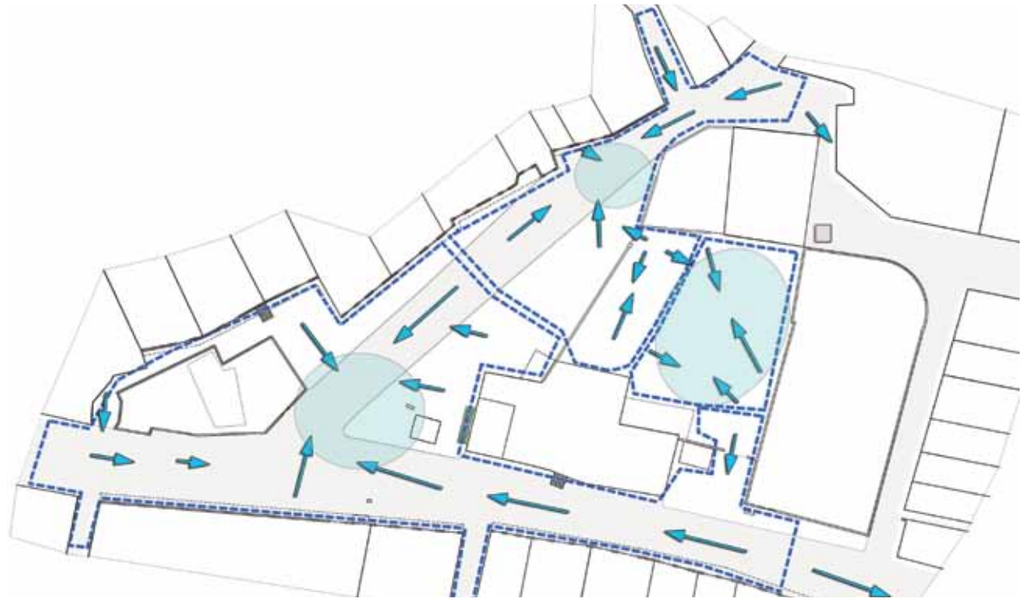
Stakeholders:

1. Shiv Mandir Trust
2. MCD Park and Panchayat Ghar
3. Delhi Jal Board Office and Underground Water Tank
4. Residents and people coming for work.

Area = 0.53 hectares / 5300 sq mt

C. Hanuman Mandir Gali

D. Open space behind Panchayat Ghar



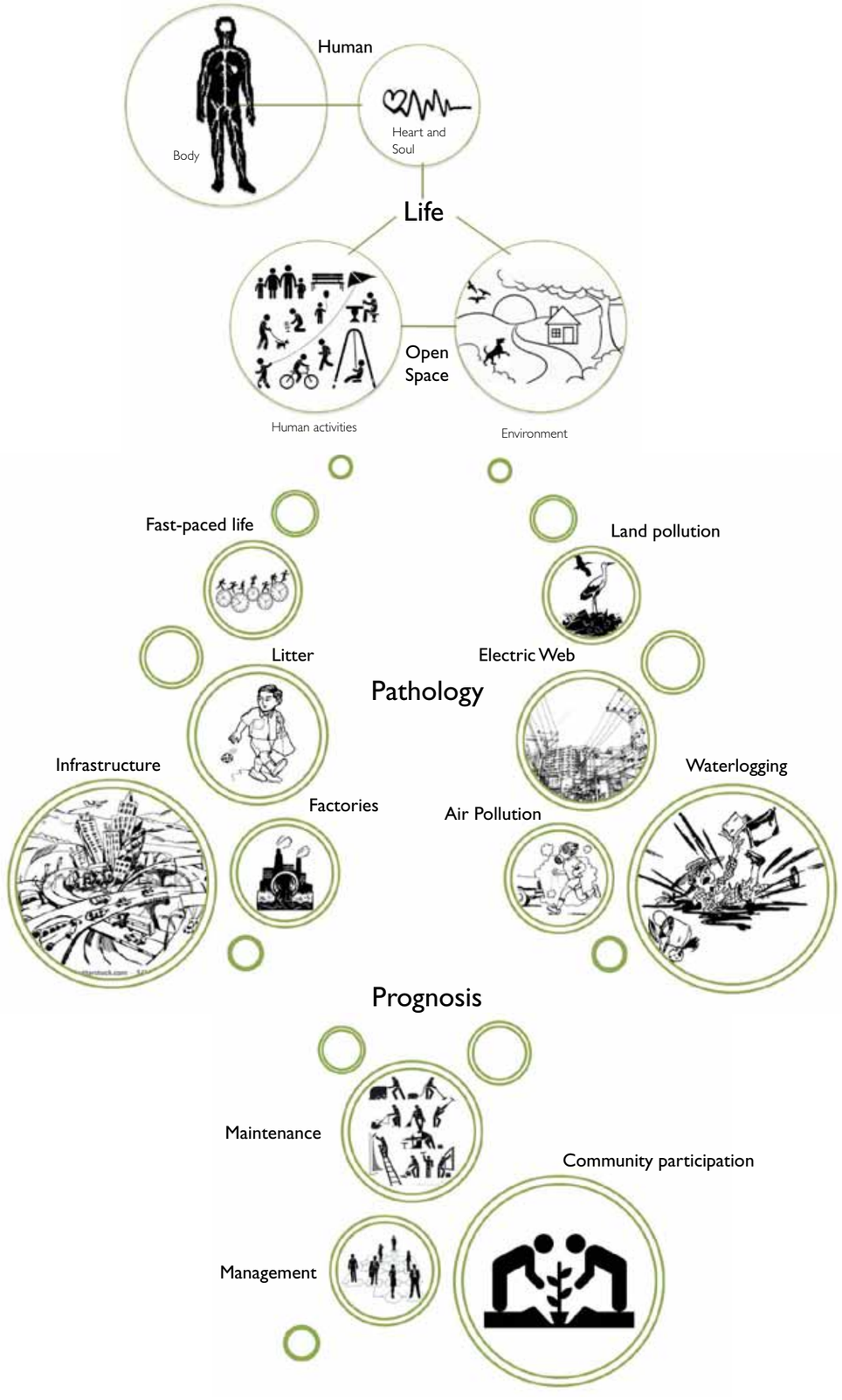
Surface Water Flow

Activity Mapping

Exploring Methods and Techniques

- Understanding Major Issues and the Process of Urban Renewal
- Case Studies
- Rainwater Harvesting Techniques

4. 1 Understanding Major Issues and the Process of Urban Renewal



4.2 Case Studies

DDA Park, Lado Sarai

DDA Park

Manek Chowk, Ahmedabad

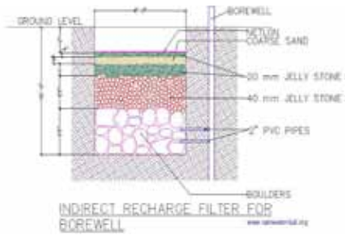
View Of Manek Chowk, Ahmedabad
(Source: DNA Ahmedabad, November 01, 2013
Mishra, A- Available at: www.quora.com, August 21, 2015)

Bhadra Square, Ahmedabad

4.3 Rainwater Harvesting Techniques

Collection

Roof runoff collection
(Source: Parjanya water harvesting, October 21, 2014)



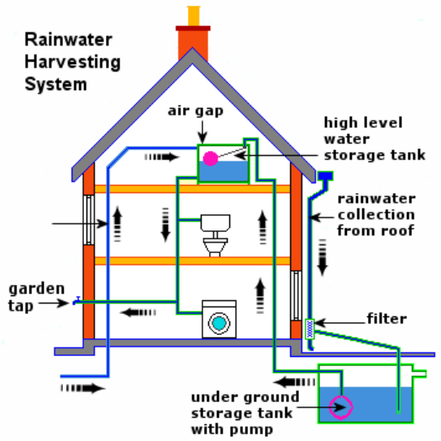
Filtration technique
Source: www.rainwaterclub.org

Example in a village
(Source: http://english.sakshi.com/news/2016/09/06/rajasthan-experiments-with-rain-water-harvesting, September 6, 2016)

Example in a village
(Source: https://sites.google.com/site/ccbangladesh/, June, 2015)

Individual Reuse

Daily usage of water



Reuse water collected in house
Source: http://zuhramohamedismail.blogspot.in/2013/06/air-hujan.html, June 10, 2013

Community Collection

Process of community collection
Source: NMAH, http://americanhistory.si.edu/blog/2010/09/independent-inventors-hidden-in-plain-sight.html, September 15, 2010

Community *tanka*
Source: https://greendeserts.wordpress.com/robert-updates/page/2/, December 29, 2014

Urban Renewal by Citizens of Lado Sarai

- Public Meetings
- Survey of Residents' Perception
- Event: Painting Competition, 4th February 2015
- Local Bodies and Stakeholder Meetings
- Demographics Survey – Old MB Road Drainage Basin
- Site Visits and Discussions with Technical Experts
- Rainwater Harvesting Workshop

5.1 Public Meetings

Public Meeting, Panchayat Ghar, 12th November 2014

It was attended by RWA Members, Social Workers and about 40 Residents of the village

- **Pedestrian crossings** are very important for the village.
- Open spaces should have a **multipurpose** use.
- Give us a workshop on **rainwater harvesting**

Devender Kumar

- Small **hospital/ dispensary** is needed

Resident

- All **mohallas** should be represented in development discussions

Resident

- **Abandoned telephone/electric poles** to be removed to clear open spaces

Resident

- More **garbage collection points** needed

Resident

- We are not scared of **contributing and sharing** responsibilities
- We are not connected to the facilities in the surrounding areas
- We are ready to plant and maintain **trees**

Paramjeet Singh, resident

Meeting with Representatives, 15th December 2015

A core group was nominated for monitoring development work. During a meeting with them following points of discussion emerged:

Problems of the village
- Parking
- Water management
- Mobility
- Animals in open space: they are not allowed as per an MCD law.
- Waste from animals is thrown in sewer lines and is one of the main reasons for blockage

Shiv Mandir open space
- Venue for marriages, public functions and religious festivals.
- Space for outdoor games is needed

Core Group
Devender Kumar
Devender Sejwal
Khet Singh
Raj Kumar
+
DUAC team

Old MB Road
- Who are using the road to park?
- Problem of commercial vehicles
- Encroachment by workshops

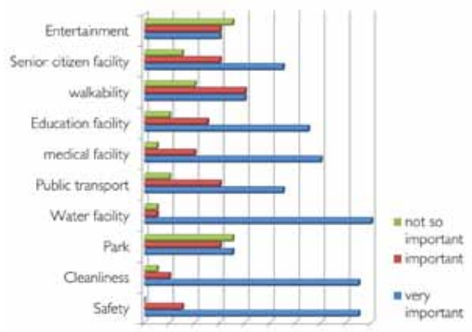
The method to be adopted is community mobilization
- Demonstration process

5.2 Survey of Residents' Perception

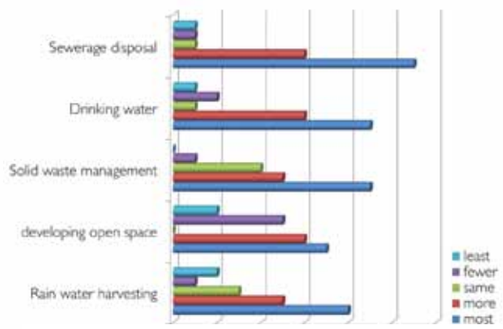
A sample survey was conducted with a questionnaire designed by the DUAC team.

It focused on quality of life, importance of safety, cleanliness, recreation and facilities for water supply, public transport, health and medicine, education, amenities for senior citizens and general entertainment. They were also asked about the kind of development they would like to see in Lado Sarai; for example, rainwater harvesting, development of open spaces, solid-waste disposal, sewage treatment and water supply. Another focus was on pedestrianization of open spaces.

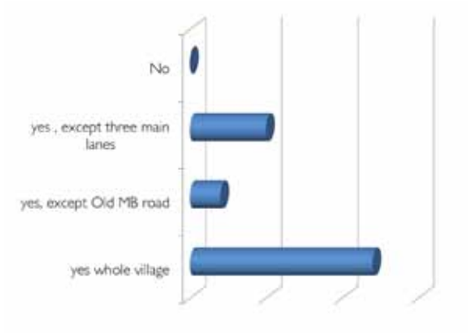
How important are the following for a good quality of life?



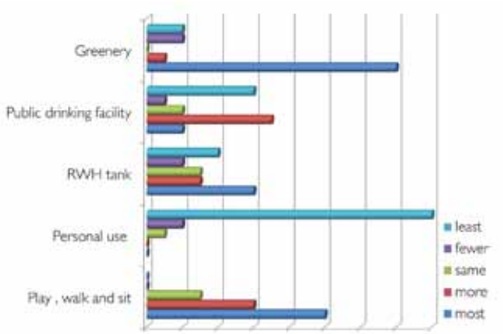
What kind of development do you prefer in Lado Sarai?



Would you like to make Lado Sarai pedestrianized?



Prioritize how would you like to use public open spaces?



5.3 Event: Painting Competition, 4th February 2015

To engage the community in concept development, we organised a painting competition in collaboration with Anurag School, an NGO based in Lado Sarai. The important stakeholders, the children of Lado Sarai, were asked to imagine their own public open space makeover.

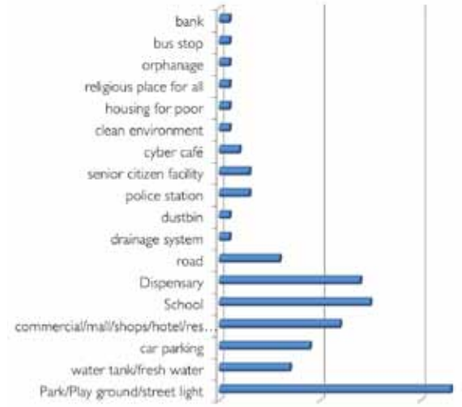
In discussion with the school principal Mr Francis and school faculty, a group of thirty 9–14 year old students were selected. We also invited their parents to participate in our sample survey.

Children were given a template showing a 3-dimensional view of Shiv Mandir Chowk with existing buildings like Shiv Mandir, Panchayat Ghar, residences, DJB office and the underground water tank. They were asked to imagine activities they would like in the empty spaces and were asked to describe them in five key words..

Children painting during the competition

The ideas represented children's attraction for modern urban requirements such as car parking, malls and vehicular roads; but a majority of them wanted schools, a dispensary for health care and most importantly parks with playgrounds and street lighting and places to sit and walk or run. Some unexpected ideas included housing for the poor, a police station and religious places for all.

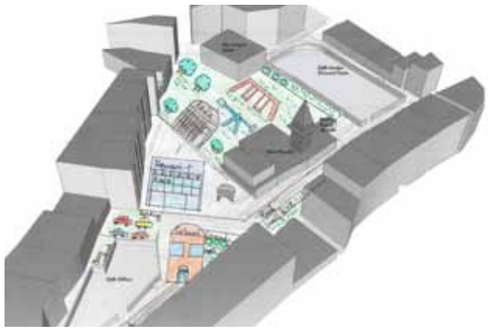
How do you imagine a public open space and what activities do you want to do in it?



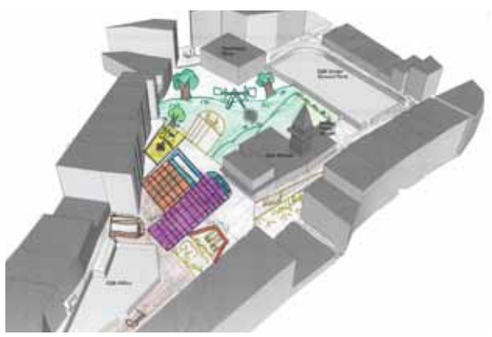
Group photograph

Special Prize, Neha Jaiswal, 14 years

1st Prize, Lokesh Saini, 12 years



2nd Prize, Ravi, 10 years



3rd Prize, Ricky Singh, 10 years

5.4 Local Bodies and Stakeholder Meetings

Meeting with Local Bodies, 27th February 2015

To take a comprehensive approach with the local authorities for the purpose of execution, DUAC invited representatives from the Delhi Development Authority, South Delhi Municipal Corporation, Traffic Police, Delhi Jal board and BSES.

The interactive plan and paintings made by children during painting competition at Shiv Mandir Chowk were displayed during the review. Some important points emerged:

1. Smt. I P Parate from the DDA noted that the DDA had already identified and prepared proposals for 7 plots in Lado Sarai. The process of land use change and notification of the same had been initiated.

2. Officials from the Traffic Police noted that the flower sellers have been relocated and provided space in Chattarpur, however, a BSES official stated that the location for Phool Mandi in Chattarpur is on private land and rented to vendors, which is an unstable solution.

3. Sonali Bhagwati, Commission member noted that those aspects from the DUAC's proposals which do not conflict with the DDA proposals, like sunken courts and markets under the hazardous traffic junctions, will only facilitate and support development in Lado Sarai.

4. A senior consultant from DUAC pointed out that this meeting was an attempt to bring local authorities together to find a point of convergence on development issues in the Lado Sarai area.

Traffic police official discussing the comprehensive plan

Conference room, DUAC

Meeting with Stakeholders and Local Bodies, 10th April 2015

A stakeholder meeting was held, with all-round representation, including the local MLA and his team of advisors, local volunteers, officials/ground staff of local authorities, some designers and artists working in Lado Sarai and interested residents participated in the discussion. The Municipal Councillor and other village political leaders could not attend the meeting, but their views were presented through their regular association with the team.
Some important points that emerged were:

Conference room, DUAC

1. The MLA appreciated the idea of working with the local community and supported the many proposals from both Phase1 and Phase 2.
2. The necessity of regulating vehicular movement, especially commercial vehicles, and organising car parking to create a pedestrian friendly environment.
3. The problem of drainage and sewerage required priority attention. It was suggested that the DUAC proposals should include solutions for this, while using the latest technology for sewage treatment.
4. Local residents agreed to support the pilot project of environmental improvement of the Shiv Mandir Chowk, as suggested in the DUAC study.
5. The detailed planning required for implementation of the works on the ground required a project team to take the DUAC studies forward.

5.5 Demographics Survey: Old MB Road Drainage Basin

To design the drainage system scheme for Old MB Road Basin and Shiv Mandir Chowk, it was decided to conduct a door-to-door survey to obtain demographic data.

By identifying house locations using postal addresses as reference, the number of residents in the area were established.

The whole basin was divided into 10 mohallas/ blocks guided by community volunteers and mohalla representatives, each street was studied by the team and data was collected.

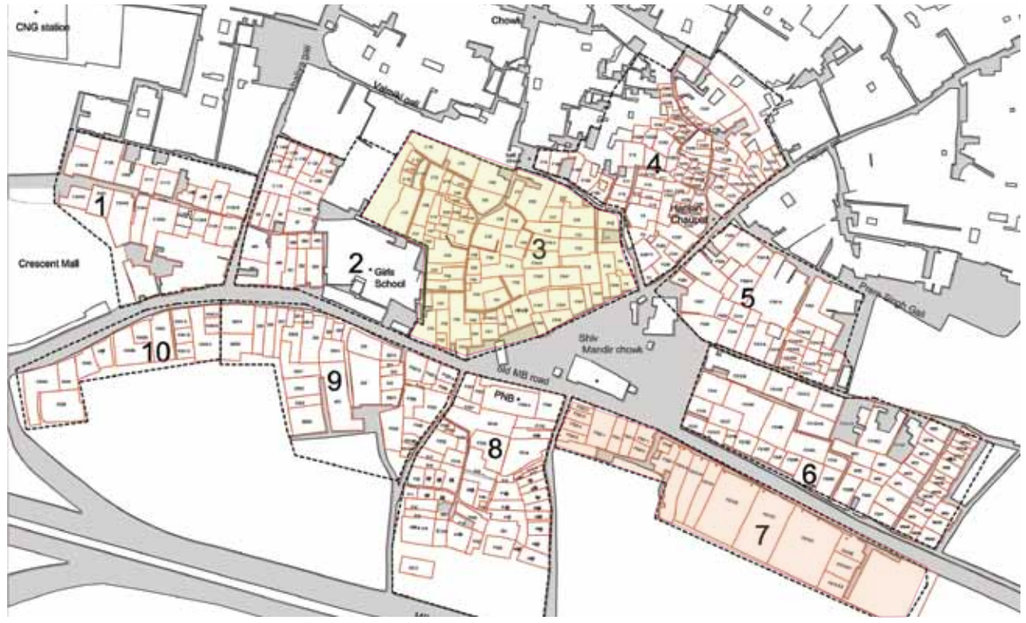
Basin Key Plan

Information collected:

1. House addresses
2. Plot lines
3. Full-time residents
4. Part-time residents/commercial users
5. Total population

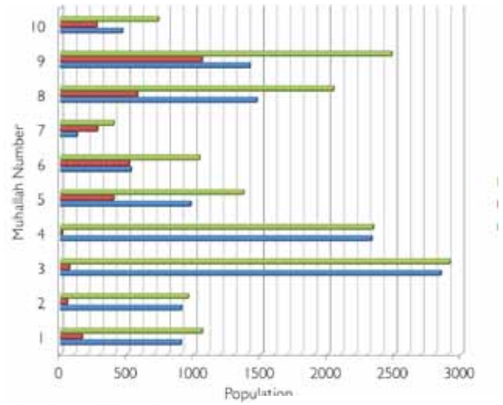
Discussions with residents during the demographic survey

Lowest density
Highest density

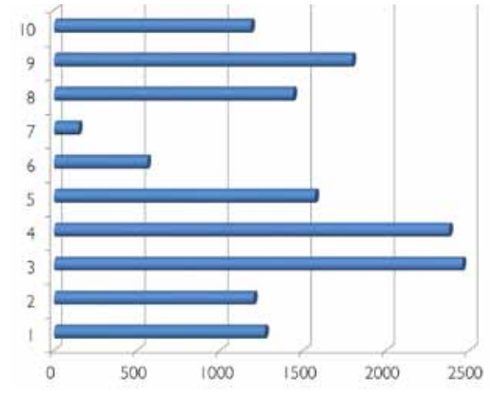


Revised Plot lines of Old MB Road Basin

URBAN RENEWAL BY CITIZENS OF LADO SARAI



Number of Residents



Density

5.6 Site Visits and Discussions with Technical Experts

Meeting with artists working in Lado Sarai

Meeting with the water system expert

Site visit with MEP consultant and Bio-digestor fabricator.

Site visit with local people and technical experts

Meetings were held with technical experts in various fields such as water management, bio-digestor technology, urban sewerage, project management and fund raising. The agenda was to develop a viable scheme for the village which could be taken up by implementing agencies as a pilot project. Suggestions emerged regarding technical feasibility, financial constraints and deliverables giving benefits to the community.

5.7 Rainwater Harvesting Workshop, Panchayat Ghar near Shiv Mandir

Ankit Magan, from Life Green Systems Ltd, conducted a rainwater harvesting workshop on Sunday, 28 June 2015. A short presentation supported with videos was made to explain the concept of rainwater harvesting, different techniques, methods to revive old wells and augment ground water sources. 15 residents attended the workshop and the main questions raised by the community were:

1. Are we allowed to dig bore wells in the ground? Where can we dig, as there is a general scarcity of space? Will the digging and bore wells affect our building structures?

2. What is the cost involved in providing rainwater harvesting schemes at the community level?

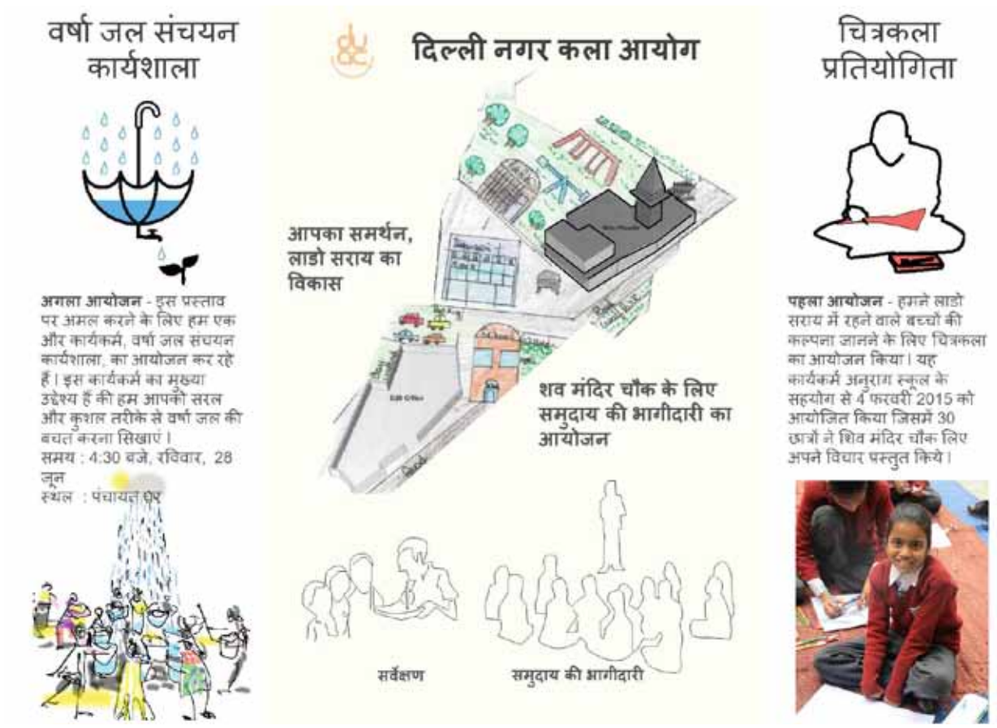
3. Are there schemes for financing rainwater harvesting? How can we get financial assistance from the government?

4. How do we obtain required approvals for construction of tanks for rainwater harvesting or recharging existing wells and bore wells/tube wells?

One of the residents Mr Devender Kumar also proposed to install a bio-digester and RWH system in his property under construction on the road running from Panchayat Ghar to Kudi Chowk.

Two other residents suggested more areas where groups of locals are ready to install RWH systems in their houses/street and could afford the construction cost. They were ready to discuss the same with residents around Baande ki Chaupal.

Panchayat Ghar, RWH workshop



Handout to invite community people

Proposal

- Concept
- Master plan – Entire Village
- Proposed Comprehensive/Interactive Plan
- Pilot Project – Old MB Road Basin
- Phase I – Shiv Mandir Chowk and it's Surroundings

6.1 Concept

Integrate **rainwater harvesting** with **decentralized sewage treatment** plants scaled to the level of the neighbourhood along with **rejuvenation of public open spaces**.

The scheme is proposed at three scales of spatial hierarchy:

Master Plan
Entire
Village

Pilot Project
Old MB
Road
Basin

Phase I
Shiv Mandir Chowk and its surroundings

6.2 Master Plan – Entire Village

The focus of the Master Plan is to enhance the quality of life of the residents of Lado Sarai by providing social amenities and services for health and sanitation. As per site analysis as illustrated in section 3 of this report, certain locations are identified for:

1. Improving amenities in open spaces
2. Installation of underground rainwater harvesting tanks
3. Installation of bio-digesters for sewerage treatment at the municipal level
4. Improving pedestrian movement network in Lado Sarai

The Master Plan proposes 5 zones of development

1. Old MB Road – Lifeline of the village
2. Central – Maximum water catchment area
3. Eastern – Origin of drainage on Phirni road
4. Western – End zone of drainage system
5. Southern – New development area

Pedestrian Paths
System of walkways connecting proposed amenities and existing landmarks

Roads with regulated vehicular traffic
Regulated vehicular movement with facilities for pedestrians

Public Open Spaces
To be redesigned for amenities such as parks, gathering spaces, playgrounds, vending zones and seating facilities.

Underground water storage tanks

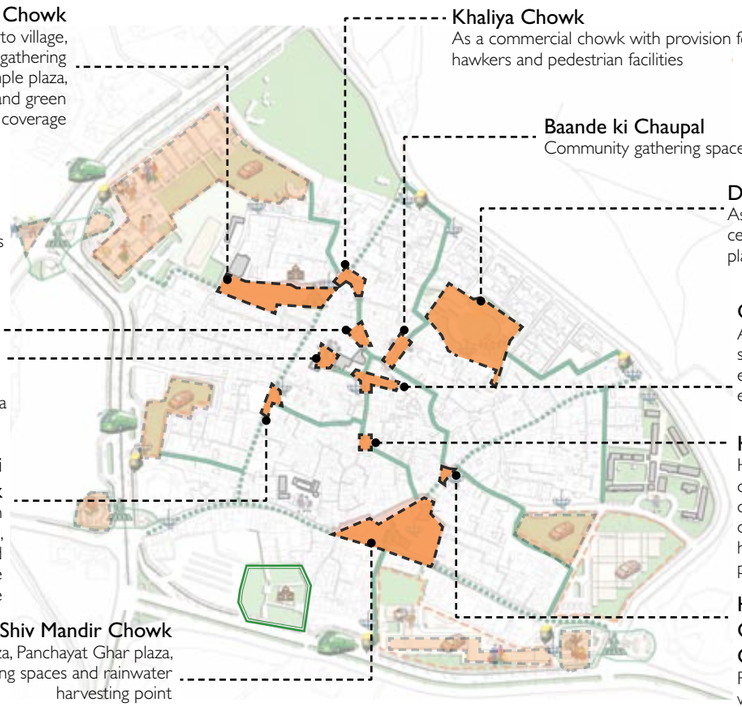
Bio-digestor treatment system with underground storage tank

Bio-digestor treatment system for ground recharge connected to existing well

PROPOSAL

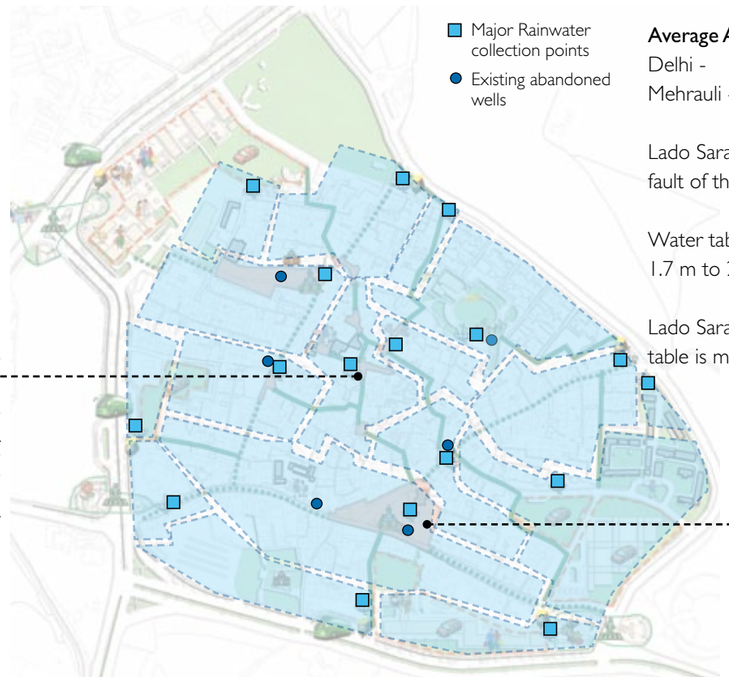
Amenities

Identifying network of existing Public Open Spaces and proposals to form a scheme of amenities for the entire village.



Rainwater harvesting scheme

Rainwater harvesting and underground water tank locations



Average Annual rainfall

Delhi -	617 mm
Mehrauli -	499 mm

Lado Sarai lies on eastern fault of the ridge.

Water table decreasing by 1.7 m to 2 m every year.

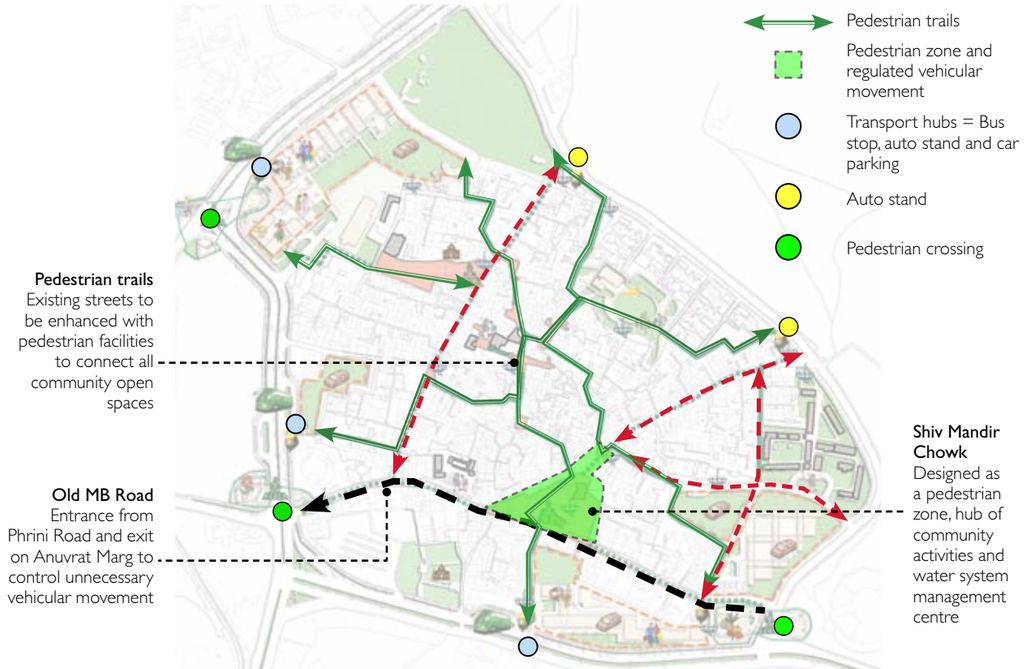
Lado Sarai ground water table is more then 70 m.

Decentralised Sewerage Treatment Scheme

A decentralised sewerage treatment scheme includes three levels of treatment; primary in manhole, secondary in conveyance and tertiary in major treatment locations.

Mobility

Pedestrian and Vehicular Movement Rationalisation



6.3 Proposed Comprehensive/Interactive Plan

An interactive image of Lado Sarai was created to communicate to people the holistic approach taken to develop the village. It shows a complete experience of activities through existing landmarks and proposed ideas. It contain first phase interventions, second phase master plan showing amenities, water system and mobility.

Existing condition

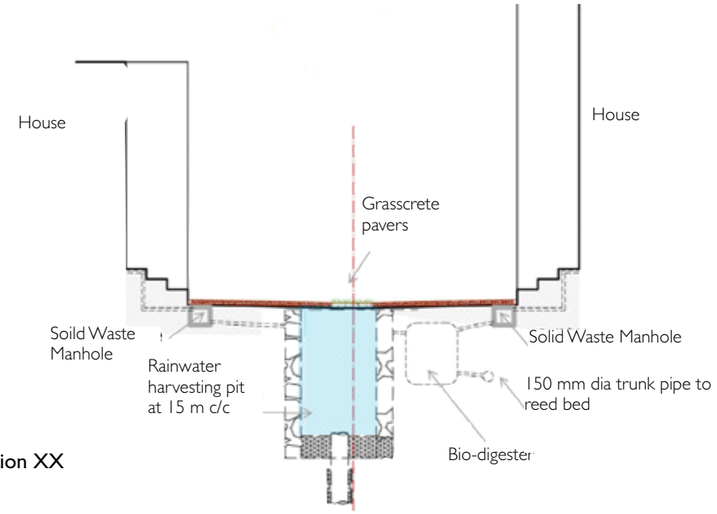
PROPOSAL

6.4 Pilot Project - Old MB Road Basin

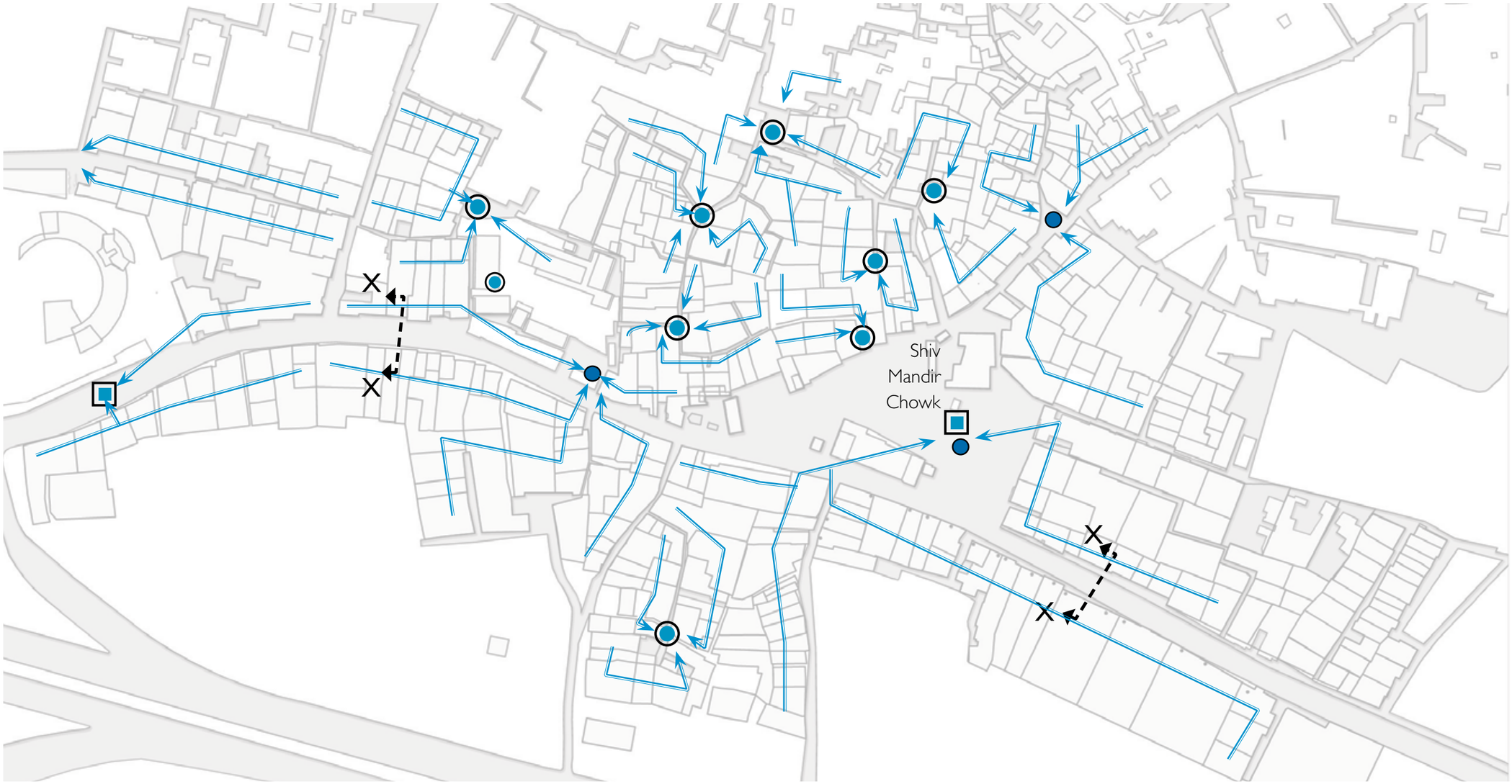
The pilot project is to be undertaken to demonstrate a comprehensive approach to upgrade the quality of life in an urban village by revitalizing open spaces and providing amenities. The spaces need to redesigned for better utilization of available land. To make this work and to achieve sanitation in open areas, it is proposed is to introduce rainwater harvesting practices for augmenting public water supply system, managing surface water runoff, and installing a decentralized sewage treatment system in the built environment, without damaging the existing fabric.

- Overhead rainwater collection tanks
- Underground rainwater collection tanks
- Existing wells to be recharged
- Conveyance
- Open space to be redesigned

Key Plan



Typical Road Section XX



Rainwater Harvesting

PROPOSAL

6.5 Phase 1 - Shiv Mandir Chowk and its Surroundings

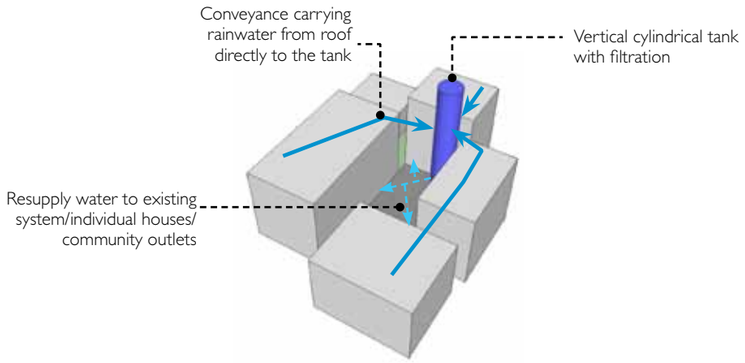
The area of focus in Phase I includes Shiv Mandir Chowk, the entire mohalla no. 3 and some parts of mohalla no. 4 and 8.

Rainwater Harvesting Design Ideas

1. **Terrace rainwater collection:** Rainwater will be collected by connecting flexible pipes to the existing rainwater outlet pipe on the terraces of buildings.

2. **Treatment of rainwater harvesting:** Filtration and chlorination (if required) of the rainwater would happen in the vertical cylindrical tanks that would be provided at different locations decided in the target area.

3. **Clean rainwater collection and distribution:** An outlet would be provided in the collection tank from which rainwater can be collected by the residents of the location. The clean rainwater flows into the existing DJB tank at Shiv Mandir Chowk (this applies only to the rainwater collected in and around Shiv Mandir Chowk).



Sewage Treatment

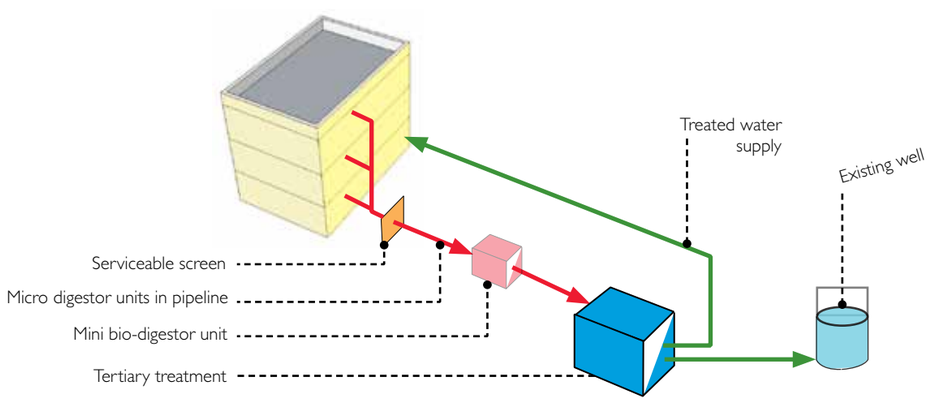
1. **Engage sewer cleaning for primary de-clogging:** Employ and engage existing organizations that can carry out the initial de-clogging of current sewer lines

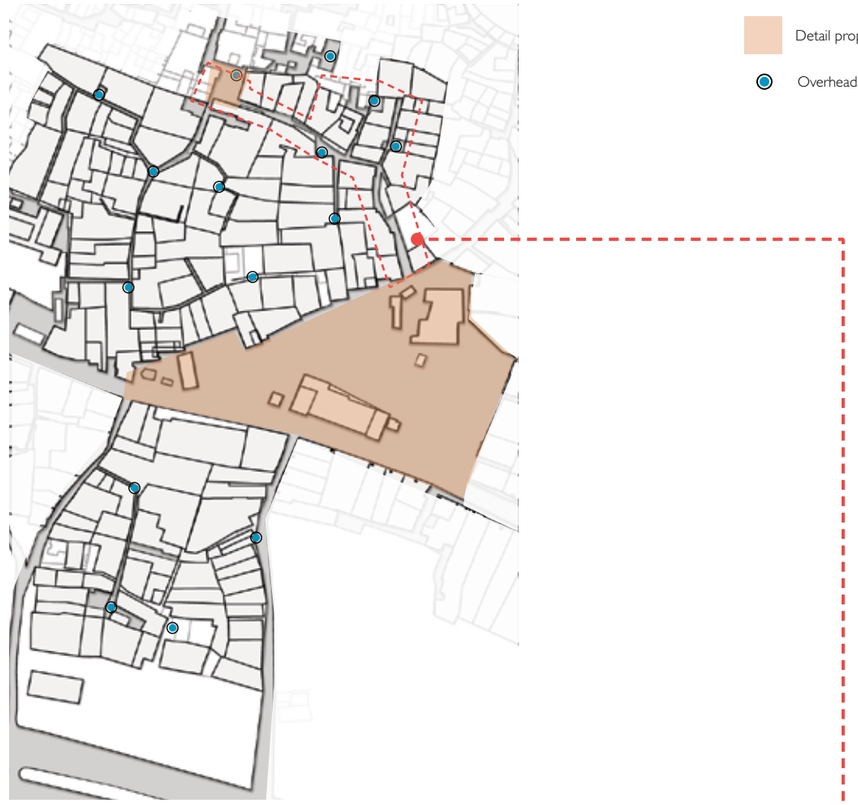
2. **Install serviceable screens at the entry point of sewer lines** for filtering out inorganic waste which can be regularly serviced by locally employed personnels

3. **Existing pipelines** will be installed with micro-digester units for the primary sewage treatment

4. **The existing manholes** will be installed with mini bio-digester units which will carry out the secondary sewage treatment

5. **Final tertiary treatment** at collective locations. These STPs would be of a greater volume in order to carry out the treatment process of the sewage coming in from the households in the vicinity





Phase I Area

Decentralised Sewage Treatment

Public Open Space Design

Shiv Temple and its Plaza
Shiv Temple remain, centre for all activities and its footprint/space is extended by creating a temple plaza in its foreground

Pedestrian friendly road
The small portion from Old MB Road to Panchayat Ghar is a semi-pedestrianized zone where vehicles will be regulated by the community. An attempt is made to create an uninterrupted walking facility by connecting pathways to proposed facilities.

Vending zones
Three locations are given for vendors like, vegetable seller, cobbler, laundryman etc. These are placed where such activities are already going on.

DJB land with potential for development
The land is under the Delhi Jal board. It is underutilized and has the potential to be developed for public use such as for a dispensary, underground water tank for rainwater harvesting etc.

Existing trees

Proposed trees

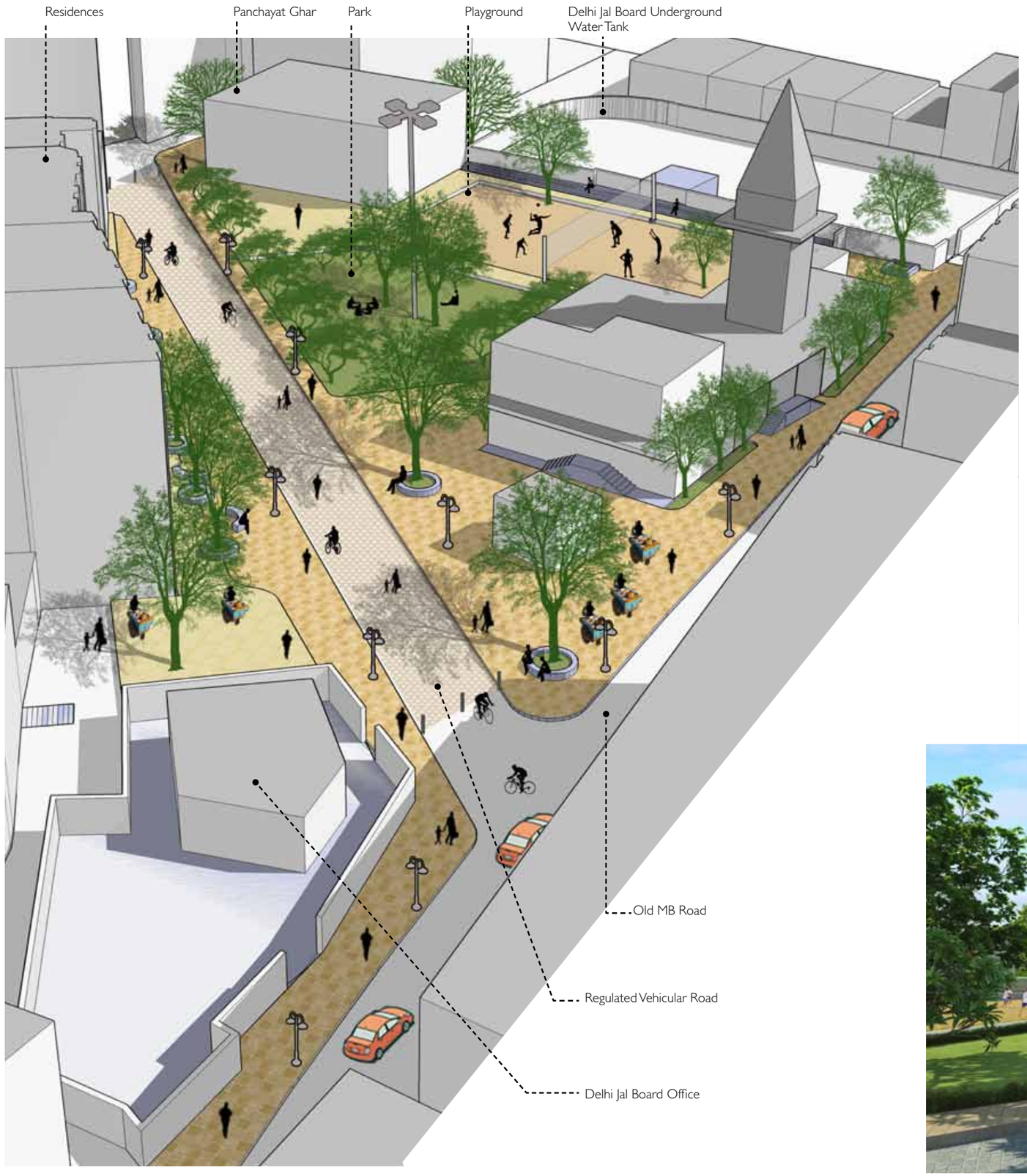
Existing well

Park
The existing MCD park is shifted towards the edge of the road to make it more accessible and safe.

Panchayat Ghar Plaza
The existing foreground is surrounded by walls. In the proposal the same is open and connected to the park and play field to create a larger area for community activities. Also the play field is often muddy as it is a catchment area and connected to the existing well.

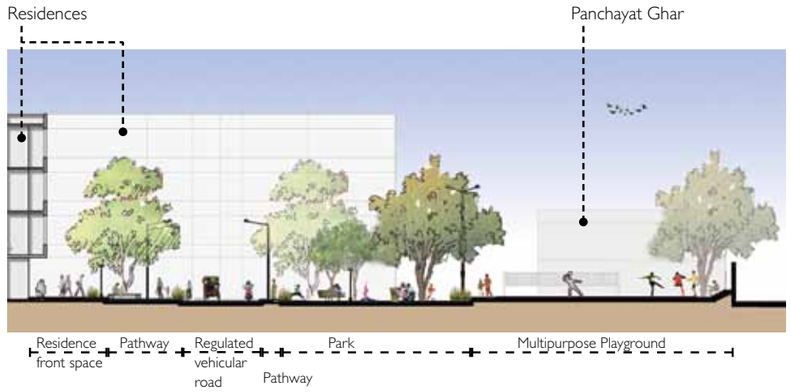
Shiv Mandir Chowk

PROPOSAL



Shiv Mandir Chowk

Section AA



Section BB

View A1

The study of Lado Sarai is intended as a prototype for similar urban villages of Delhi. It can serve as a general guideline for urban improvement interventions in other informal settlements.

Survey

It should be emphasized that given the cultural and physical diversity of informal settlements, it is essential to first undertake a detailed survey of the habitation to identify distinctive features and morphological elements. In our report we have called this a diagnostic survey. The survey should reveal the topography, demographic profile and broad socio-economic characterstics of the inhabitants.

Community Mobilization

The design of interventions needs to rely on the involvement of the inhabitants in defining requirements, discussing technical options and creating a reliable regime for maintenance works. The active participation of the user community is an integral part of the work plan. Users need to be informed of the technical parameters of the work by easily understood means. At present this is a neglected area of work, and it is important to develop appropriate expertise, to be applied as per ground realities.

Habitat Design

The study indicates that primary importance be given to the integration of various systems for providing public utilities. This includes the provision of a sewerage and drainage system to be integrated with rainwater and surface water management, while taking care of solid waste. Public open spaces form the essential infrastructure for all public utilities therefore the design of these open spaces is a critical element for the benefit of the inhabitants and functioning of utility networks. Vehicular and pedestrian interface is a major determinant of the public open space organisation.

Documentation for Learning

At present, providing infrastructure services and public utilities is implemented by multiple agencies. This has led to avoidable conflicts in the functioning and management of essential services. The methodology followed in the Lado Sarai study has been carefully devised respecting the context and physical features. Documentation of the entire exercise will provide learning to extend this work to cover other informal settlements. The physical context will vary in other such settlements, but the techniques devised during our study will be applicable.

Governance

The multiple agencies involved in the implementation of infrastructure works has been a major problem in providing and maintaining urban utilities. The study has revealed the importance of an overarching agency for effective coordination. The Delhi Urban Art Commission (DUAC) has been able to play the role of such an agency to coordinate projects up to the stage of conceptual design. The coordination required for implementation of projects should form a natural extension to ensure faithful implementation of conceptual design. The DUAC is the appropriate agency to coordinate the implementation process as well. The lack of such a coordinating agency is the major cause of breakdown and poor maintenance of urban infrastructure in the city. The study shows the way to overcome this governance lacuna and provides a basis for the rejuvenation of informal settlements, which form 75% of the urban fabric of the city of Delhi.

Secretary

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