

System Integration of Public Utilities in Urban Villages

Lado Sarai Urban Improvement Project Piloting Decentralized Sewage Treatment

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Submitted by
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In partnership with
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Abstract: The following note outlines the activities, time and resources required to design and plan a decentralized sewage treatment system at demonstration scale for the urban village of Lado Sarai, New Delhi. With its foundation in a decade long research around urban renewal conducted by GREHA, the system being proposed has been developed through extensive consultations with the local citizenry, local authorities and planning & implementing agencies at the state and central government. The consortium comprises of leading experts in the field of architecture, design, urban planning, engineering services and influential leaders from the community of Lado Sarai. This proposal has been drawn up to seek funding support for the first phase of detailed design and planning which can lay the foundation for a robust execution and eventual scale up.

Project Introduction

More than half of Indian urban population now lives in slums and unauthorized colonies. In Delhi alone, over 5 million residents reside in 1,639 unauthorized colonies.¹ The growth of the unauthorized colonies, built ‘spontaneously’ by poor migrants outside the master plan framework, is typically unplanned with high density and uncertain legality. Despite access to basic infrastructure, these settlements lack integrated and efficient delivery of urban services. Tap water connections run only for a few hours, increasing their dependence on informal vendors who charge much more than the service providers. The faecal sludge is not conveyed to manholes and mixes with storm water in open drains, with huge consequence for public health and development. A new paradigm is required to address and resolve the complex set of environmental and health issues arising from this ‘spontaneous’ development.

We take a community embedded approach to integrate decentralized public utility model within the current service system of the city. Our approach has three guiding principles:

1. Context led strategic choices for enhanced service provision including rain water harvesting, decentralized sewage treatment system and open space improvement
2. Community mobilization for design input, implementation, operations and maintenance of the system
3. Documentation for scaling practice and policy advocacy

Our vision is to redesign the public utilities of Delhi’s urban villages for inclusion and integration with the urban fabric of the entire city, starting with a pilot project in Lado Sarai. The vision stems from a decade long research and work conducted by a not-for-profit organisation, GREHA, (managed by environmental design and planning experts) based in the unauthorized colony of Aya Nagar. GREHA (and its President, MN Ashish Ganju) initiated the study on urban renewal for the Department of Science and Technology (DST), Government of India (GoI), in 1999. In CE 2009, Greha made a report to the Delhi Government (GNCTD of Delhi) with a grant from Delhi Kalyan Samiti. The report among other recommendations, proposed a demonstration project for providing a decentralized sewage treatment system with rainwater management for recycling wastewater and surface water in one neighbourhood of Aya Nagar. This proposal was taken further in CE 2013, when the Delhi Urban Arts Commission (DUAC), an apex regulatory body of the Ministry of Urban Development (MoUD), GoI, commissioned MN Ashish Ganju to develop the proposal for Aya Nagar and Lado Sarai, as part of the City Level Projects undertaken by DUAC.

The Lado Sarai Urban Improvement Project was launched in the community early this year to seek implementation of the research and study done by Greha and DUAC. The project is designed to be implemented with the full knowledge and participation of the local residents, as well as the local public authorities, with whom extensive discussions have been held and orientation workshops conducted over the last several months. Greha in collaboration with other multidisciplinary organizations - Quicksand (Service Design), Studio Lotus (Architecture), and 3x3 Design(Urban Planning) - now seek funds to prepare an implementation strategy including a detailed project report, community mobilization and documentation for scaling and policy advocacy.

¹ http://www.asi.nic.in/pdf_data/Applicant_Unauthorized_Colonies.pdf

Project Objective

The first phase of a demonstration pilot in Lado Sarai involves preparing a detailed plan and design of decentralized public utilities and organizing the community for long term maintenance and sustenance of this system. The following note makes a case for the time, effort and resources involved in successfully completing this first phase which would be followed by the next phase of execution and deployment. The three main objectives of the first phase therefore are:

1. **Habitat Design:** Develop a detailed, good for construction, technical plan and design for decentralized sewage treatment, water harvesting and urban renewal at a demonstration scale (within a catchment of 6500 people) in Lado Sarai, an urban village in Delhi.
2. **Community & Resource Mobilization:** Organize the community and local stakeholders to plan, own and maintain the new infrastructure through a robust model for community ownership, engagement and financial mobilization.
3. **Documentation:** Develop a plan for replication and scaling of the demonstration pilot through process documentation, knowledge management and policy advocacy.

Project Activities

A more detailed narration of the activities necessary to achieve the objectives outlined above are as follows:

Habitat Design

1. A topographical survey to help in preparation of conceptual master plan of water management in Lado Sarai
2. An assessment of existing toilet provisions in the pilot area
3. Technical assessment and design of decentralized sewage management and water harvesting system catering to 6500 people
4. Redesign of open spaces and common streets to enable better socialization and management of community facilities
5. Preparation of an architectural scale model of the pilot area
6. Tender drawings preparation, including specifications, bill of quantities and cost estimates of the proposed design

Community and Resource Mobilization

1. Awareness workshops & public consultation meetings to mobilise communities to take ownership of the proposed system
2. Setting up a local test case of water harvesting in one residential building at Lado Sarai
3. Developing long term operations and maintenance models for the proposed system through community consultations
4. Mobilizing resources and planning for capital and operating expenses of the project
5. Organizing a working group / committee for the project comprising of important stakeholders from the community who can over time take ownership of the project and recruit additional members if need be for active monitoring and oversight

Documentation & Advocacy

1. Process documentation for the two critical work streams of a) habitat design and b) community / resource mobilization from start to finish
2. Developing a guidelines document for decentralized sewage management system for urban villages based on the Lado Sarai design and planning experience
3. Advocating the Lado Sarai model to be included in City Master Plans through stakeholder consultations including legislators, urban planners, civic administration and regulators

Key Deliverables

In summary, the key deliverables on the project would comprise of:

1. Detailed project report and architectural scale model of the proposed design complete with tender drawings that can be contracted out by the government / appropriate agency
2. Due diligence report on contractors available to execute the task, available resources for financing project execution and a detailed implementation plan
3. Community and resource mobilization reference guidelines document detailing sustainable financial model, roles and responsibilities of key stakeholders, operating and maintenance guidelines for the proposed system
4. Knowledge product (in print and digital) that is a robust process documentation and a learning tool for replicating the proposed system capturing key milestones, decisions taken, hurdles overcome

Project Plan

(refer to Annexure 1)

Pilot Project Preliminary Estimate of Implementation Phase

(refer to Annexure 2)

Project Team & Budgets

Activities	Key Resources	Personnel	Estimates (in INR)
Program Management	Project Lead Sr. Project Manager Finance and Contracts Manager	Quicksand	17,00,000
Habitat Design	Architecture - Principal Consultant - Urban Designer - Urban Planner - Studio Manager - Junior Architect - Intern	Greha and Studio Lotus	48,00,000
	Design Research, Public Participation and Stakeholder Consultation	3x3 Design	
	Technical Experts (Sewage and Water management)	Proion Consultants Arkin Creations	
	Survey (Topographical)	VR Surveyor	
Community & Resource Mobilization	- 2 Community Outreach Manager - 5 member Project Committee	Lado Sarai Community including representative of Ward Councillor and Member Legislative Assembly	2,00,000
Documentation & Advocacy	Research, Writing & Framework for Documentation	3x3 Design	11,00,000
	Film and Video		
	Communication Design (print, web etc)		
SUB TOTAL (A)			78,00,000

Other Costs

Activities	Estimates (in INR)
Consumables (for research, documentation, workshops etc)	2,00,000
Legal advisory and support for community mobilization and organization	1,00,000
Honorariums for voluntary contributions of external experts	2,00,000
Travel & accommodation (for external consultants)	2,00,000
SUB TOTAL (B)	7,00,000

	in INR	in USD
GRAND TOTAL (A+B) *	8500000 (INR Eighty Five Lakhs)	140000 (USD One Hundred and Forty Thousand)

* Not including taxes (as applicable)