

“Next Generation” 3rd prize Asia Pacific

Decentralized sanitation system, near New Delhi, India

Project data

Project group	Building and civil engineering works
Client	Residents of Savda Ghevra Resettlement Colony
Project background	Research project
Estimated start of construction	September 2011
Main author	
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Study direction	Architecture of Rapid Change and Scarce Resources
Supervisors	Maurice Mitchell, Peter Carl
City, country	London, United Kingdom



Further author(s)

Not applicable

Comment of the Holcim Awards jury Asia Pacific

The jury awarded this project due to its sound research approach that leads to a practical solution for an urgent problem. The installation of a sound and reliable sanitation system counters immediate problems and the direct design integrates successfully. The realization is a convincing demonstration of a best practice process, leading to a simple, cost-effective solution. Its pedagogic approach provides knowledge and promotes common acting of individuals leading to a consolidated sense of community, beneficial to all. The project sets a moving signal for the future of sharing responsibilities – here and elsewhere.

Project description by author

This project is the basis for my PhD, entitled “Incremental Cities”, which I began in October 2010 at the Faculty of Architecture and Spatial Design at London Metropolitan University within the research area: architecture for rapid change and scarce resources. The research looks at sharing and building technology for low income housing in regularized settlements – investigating the relationship between incremental growth and community and neighborly sharing and identifying the advantages and disadvantages of such incremental construction. From this research I have initiated a decentralized sanitation building project within Savda Ghevra, a resettlement colony on the western fringe of Delhi.

This is the project I am presenting for the Holcim Awards as an exemplar small-scale high-impact project that makes stronger and more sustainable communities. The project was the outcome of interviews with residents, physical surveys, community consultation from the bottom-up and research into the legal barriers for the adequate provision of low cost housing from the top down.

In Savda Ghevra building bylaws prohibit residents from constructing their own toilets in favor of community toilets which are mostly closed. The reasoning, according to the local municipal representative, is a mistrust in the building capacity of residents to develop solutions following best practice guidelines and lack of space for toilets in most houses which are single storey. Consequently most of the residents defecate in the open.

Many of the more established and financially secure residents have gone ahead and built toilets with individual septic tanks – these are very costly to maintain for an individual family. The families who do have toilets also have houses which have incrementally developed from 1 to 2 and sometimes 3 storeys.

It was out of this and in conjunction with the Indian NGO (CURE) working in the area that I proposed a community cluster based sanitation system which we took to the community for their input. In March 2011 I initiated a community workshop within Savda Ghevra to discuss their general needs and ran a session on toilets – we discussed the need for such a project, available finances and individual/community expectations.

Based on this I am working on the design and costing of this scheme and currently consulting both local and international specialists in urban sanitation systems. The results of this initial investigation will be taken back to the community which in turn will choose (through CURE as on site facilitators) which streets want to begin work and the extent to which they are able to financially commit themselves to the project. Based on a second round of consultation we will carry out a more detailed survey of the houses, individual capacities and then begin tendering the construction. In addition we are engaging with the help of legal practitioners and other local NGOs to open discussions with the Municipal Corporation to make the current bylaws more specifically “pro-poor”.

Relevance to target issues by author

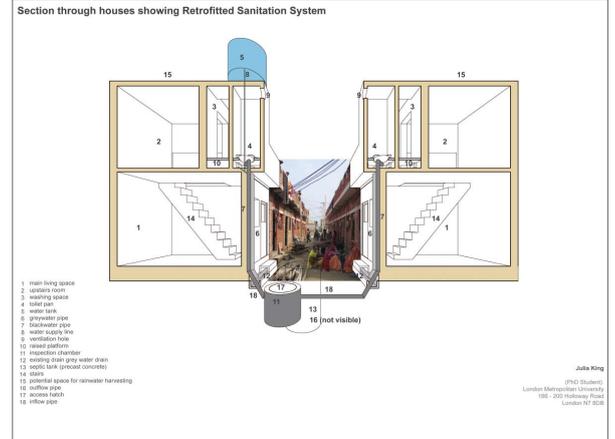
Innovation and transferability – Progress
At the core of this project is an ambition to take good practice and make it culture. The project is driven by participatory processes that enable the community to have ownership over the project and to disseminate the technology and best practice guidelines. The designer/architect acts as intermediary between the technical world of engineering and the people-oriented approaches that NGOs are so good at. The project serves as a catalyst to engage with the community and create centers for information exchange which in turn will develop a platform for livelihood schemes. This project investigates how a settlement which currently is formed by individuals who share nothing can come together and cost-share, and out of this provide an extensive sanitation system to those who are least cash rich. The outcomes from this process will serve as a model for similar applications in other resettlement and upgrading schemes throughout urban India.

Ethical standards and social equity – People
The community has to be ready and the technical innovations integrated into the everyday life of the inhabitants. To achieve this there needs to be a good visual dissemination of knowledge. Ensuring quality workmanship will be a serious issue during construction as we are dealing with black water waste. Working with an NGO which has a local presence helps ensure that the community will not be left alone once construction is over.

Environmental quality and resource efficiency – Planet
The project is low technology high impact with a very small infrastructural investment that will significantly reduce open defecation and put in place affordable systems to deal with black water. We are currently proposing clusters of 20 households which are approximately 100 people in total for the first pilot project. The project has little to no environmental impact and once in place could trigger more initiatives such as composting, rainwater harvesting and DEWATS.

Economic performance and compatibility – Prosperity
In Savda Ghevra the building typology is characterized by a process that is not planned where houses are invested in and built over time. There is a pivot point when houses go from being a kuccha (temporary) single storey dwelling to a pucca (permanent). Having more than one storey allows for individual toilets currently more than 80% of houses still remain kuccha. Working with CURE allows the project of community based cluster systems to incorporate a type of financing which enables families to invest in their houses with 0% loan schemes organized through CURE.

Contextual and aesthetic impact – Proficiency
The retrofitting of services requires a careful diagnostic survey of the existing fabric followed by a conservative surgery which maintains the familiar physical fabric with its invaluable cultural capital whilst at the same time bringing the emancipatory benefits of clean water and internal sanitation. Certain aesthetic decisions such as the clustering of piping, rails for wires and shared piping are also best practice which drives the design process.



Typical section.



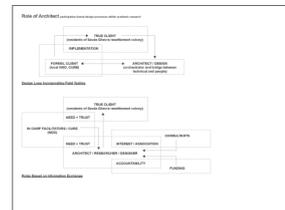
Incremental housing typologies.



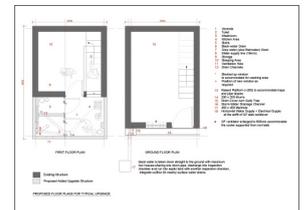
Domestic landscape.



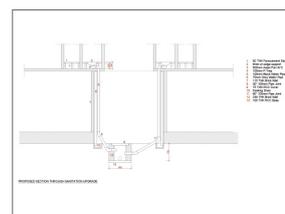
Community workshop.



Role of architect.



House upgrade plan.



Section sanitation system.