

Moving Mountains

a community's
journey
from
a slum
to a
housing society

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publication
of
Shelter
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Introduction

Moving Mountains is a story about the Rajendranagar Mahila Milan. It is a photo story of a building process which started with demolition and ended with a solid structure. The photo story is a faithful write-up of the entire process. It covers the events leading to the project and the entire project work. It covers almost every aspect of building. What it does not cover is the trauma the community went through when their houses were razed to the ground. It does not cover the months of living in chattai huts in the pouring rain. It does not cover the fear, confusion and despair the people felt before they got the land. Nor does it talk about the innumerable aches, pains, broken fingernails, sprained backs, swollen fingers, scraped shins and bruises which the people put up with when they were working on the building itself. It does not mention the long days of work, when the women and men put in a full day's work on the construction site, completed their other household tasks and then went *right back to the site* to prepare for the next day's work. It does not talk about the sacrifices each family made when they agreed that one family member would work every third day on site, even when it meant a loss of household income.

None of this can be photographed. But each photograph could be taken because the people moved mountains to make this project happen. Their patience and willingness to work and save convinced the authorities to give them land. Their tenacity and sheer hard work impressed the material suppliers to lower their rates. Their perseverance changed their "high society" neighbours' contempt to respect.

None of us with cameras and pens can bring out these aspects on paper. But we hope that our readers will read "behind the frames" and think about what the community had to put in to make this project happen. And we hope that the city will enable other communities to move other mountains to make way for such projects to come through.

Shelter Associates
Pune
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Pune Khabar: Rajendranagar slum to Suryodaya Housing Society

Laadi Making

The first components made on site were the laadis. Laadis are pre-fabricated concrete funicular shells. They will be used to form the lofts and floor slabs at three levels of the building. A mason from Mumbai, came down to Pune in February 1997 to start the community's laadi and laadi-beam production. By May 1997 the people had made all the necessary 1900 laadis.



All the pre-fabricated components have been made by members of the community, which reduces the project costs. Usually each household provides one laborer per day, which means that each family is contributing more than just labor, but also the loss of the earnings of one member.



The low-cost nature of the design and building methods have made the project financially viable. The low cost techniques adopted was meant to allow the people to do a lot of the work themselves, avoiding dependency on outside laborers and contractors. This has helped the community to gain much more control over their project.



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The Laadi Beams

Once a number of laadis had been made, the women started to estimate the number of laadi beams required. They had to make 476 beams for the loft and floor slabs and 78 beams for the corridor slabs. The loft and floor beams were 10' long, 5" wide and 4" deep. The reinforcement comprised of two 8 mm diameter bars on top and two 12 mm diameter bars below. The cross section and reinforcement of the corridor beams were the same as the loft beams, only the lengths varied. The laadi beams were placed on the structural beams and spanned the width of the room.

The normal way of making the beams is pre-casting them in a wooden frame. The main frame consist of two 10' long wooden planks bricked on either side to keep them upright with a distance of exactly 4" between them. The inner sides are lined with plastic sheets. The reinforcement (already made into cages) are placed into this make-shift frame. The concrete is then poured in. At this time, it has to be made sure that the concrete reaches every corner of the frame. The top surface is smoothed out and the beam is left to dry before the wooden planks are removed. As concrete sets, it gives out a lot of heat, which causes the beam to expand and exert pressure against the planks. Therefore, C shaped metal holdfasts were made to hold the planks tightly together while the beam set. These holdfasts got stolen from site after a while. Then, a carpenter would nail pieces of wood over the planks to hold them together.



But, the timber planks started warping after a few beams. An alternative was required. A brainstorming session was held and a metal framework was decided on. A rough design was worked out and the first experimental frame was made. Two 10' long pieces of metal sheets were welded together to form a L, sized 4" x 5". This formed the bottom and one side of the frame. Stirrups at regular intervals strengthened the plates. The third side of the frame was loose and kept in place with holdfasts screwed at the top, when the beam was to be cast. Casting was easy in this frame, but removing the beam was very difficult. Two sides of the frame have to be completely loose, if the beam is to be removed without damage.

Shelter Associates worked out a second design. This time, the bottom was a channel section, 4" in width. The channel was placed upside down. The side plates were loose. Holes were drilled in at the bottom of the plates and the channel, so that the plates could be bolted to the channel before casting the beam and unbolted from the channel when de-molding. C shaped holdfasts (made from scrap steel from the site) were clamped down tight on the top sides to prevent the plates from falling apart. This system worked better, but bolting and unbolting the plates took a very long time. Soon, scrap steel holdfasts replaced the bolts and were used both at top and bottom to keep the plates in place. This system worked the best and most of the beams have been made in such frames. The only problem was that the side plates were made of very thin metal, which also warped after some time. In future, thicker metal plates will be used.

The Beam Story

This entire process has involved the people deeply in beam making. One evening, boys from a nearby slum, Panmala, took off with two metal side plates. Aman, Pandurang, Alka, Kamal from the site gave chase through canal and by road, but the boys disappeared. The women were in tears. They went to Panmala and discovered that the boys had broken one plate into pieces and already sold the plates to a scrap vendor. The Rajendranagar people screamed in frustration but were scared to do more because there are plenty of tough guys in Panmala, just itching for a fight. They debated whether to make a police complaint.

After thinking it over they decided on a plan. They told the boys parents that they had informed this incident to one well known local "toughie" who was a good friend. He had assured them that he would deal with the boys at Panmala and meanwhile Shelter Associates had already complained to the Police Commissioner. This threat worked. The Panmala people believed this story. Next morning, our people found their *two metal plates on the site with the broken one neatly welded together.*

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From the chaos of demolition . . .

When their houses were destroyed in May 1996, the community was in total despair. It was raining, kids were falling sick, people were sending their families back to their villages, men were leaving their jobs. But for this collective, it was an opportunity to start negotiating for land, tenure, housing loans and infrastructure. They would turn the demolition into the first step towards a secure future for the community.



. . .to a year of hard work . . .

It required patience, grit, and tenacity to keep the community together and work on such a massive project. They were fights, aching bodies, jealous neighbors, shirkers, long hours of hard work, and tough decisions to make. But, all this could be combated for the sheer pleasure and satisfaction of seeing their building grow. That pulled the community through the entire year.



. . . to a house of their own

Finally, the community can step back and look at their entire year's work. A solid structure, no more demolitions and a "model" for other housing projects. The work pace can relax a little and the people can start to prepare to move in. It's been a long journey. For the Rajendranagar collective, this is a triumphant end to a long year of work. ***For Pune, it's the beginning of starting such journeys for other poor women and men in the city.***

