

Technical Innovations

Any innovative construction project is a learning process for all involved. In the PMC-NGO toilet drive, experiences from each toilet block have fed into and improved later blocks in the project.

During the design and construction stages, we have made a number of changes to the technical specifications set out by the PMC. The aim was to make the construction as appropriate, low-cost and good-quality as possible.

LOAD-BEARING STRUCTURES

We are using these instead of an RCC frame wherever possible, because they are more economical, faster to construct and just as good.

SEPTIC TANK

We opted for ferro-cement for several septic tanks, a tried and tested material for septic tanks, which is more straightforward than masonry and faster to build.



Block walls and the ferro-cement tank at Sangam Wadi

BLOCKS

We had learnt in 1997 from the experience of the Dattawadi project that bricks tend to be poor quality in Pune – solid concrete blocks are much stronger and more durable.

FLOOR TILES

Glazed tiles had been specified for the floor around the pan in each stall. But architect Chandramukhi Setpaul pointed out that with daily wear, tear and scrubbing, the glazing would wear away after a few years, leaving only porous clay tiling. And glazed tiles crack too. So she suggested using hard-wearing stone for the floor of the stalls.

Shelter Associates/
Baandhani, 2001

WALL TILES

Tiling in each stall (dado) is only really necessary up to a height of 3' from the floor... an easy way to bring down costs. This has been tried and tested and no-one could splash higher than that!

DOORS

The old PMC toilet doors were wooden and had rotted horribly. The PMC had



During demolitions at Sangam Wadi: you can see the rotten state of the old wooden doors.

come up with a new non-wood door type which we adapted with the help of engineer Ram Babu. The final door consisted of aluminium shutter frames, steel door frames, and infill panels in either sintex plastic or bison board (cement particle board). The cost of one of these is just a little over half the cost of the PMC-specified door.



One new stall at Bharat Nagar, showing the floor and wall tiling, and the bison board doors

As the process continued, changes worked out for the first toilet blocks were incorporated into later designs in an on-going process of design improvement and adaptation. Other changes will be made, with the aim of making each block appropriate to the community needs and site conditions.

This project is an on-going learning process that'll be able to incorporate more and more ideas of local people, the people who will be using and managing the new toilets.