

Customer Satisfaction

"I am very impressed with the urine diversion system. It is much better than my previous pit toilet and this is the feeling of all the members who received the urine diversion toilet. We have no problems. It is easy to clean; we save lots of money on water; and we save water. It leaves no smells whatsoever; it's hygienic and very easy to use. I even recommend it to people with waterborne toilets."

– Ben Filles, Community Leader

Municipal Satisfaction

"The existing bucket system in Bereaville has been replaced with the urine diversion system. This is much more hygienic. Indications thus far show that the environmental danger is very low. Never the less, the project is being monitored to ensure that the environment will not be polluted.

"Another plus is that the system doesn't use water. There had been water shortages in the past, and householders did not always have resources to pay for it. The system now ensures that the six kilolitres of water per month is used by the household and not flushed away."

– A J Henn, Manager Health Services,
Theewaterskloof Local Municipality

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GENADENDAL

TECHNICAL REFERENCE SITE



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Background

In the majestic setting of the southern slopes of the Rivieronderend Mountains of the Western Cape lies the town of Genadendal. It was established in 1737 by Moravian missionaries and, for many years, was dependent on small scale farming in the valley floors below the settlement. In recent years the agricultural potential of the land has declined, and the community is dependent on work on adjacent commercial farms or the tourist industry around Genadendal and Greyton.

The area is characterised by cold, wet winters and hot dry summers. With the growing population, and poverty and irrigation, water demand has led to matching or exceeding the available water supply, especially during the summer. The Theewaterskloof Local Municipality therefore started to look at how it could improve the sanitation situation in the poorer areas without increasing demand for water. It decided to pilot dry sanitation in the Bereaville area of Genadendal to ascertain whether this would provide a sustainable solution to the problem.

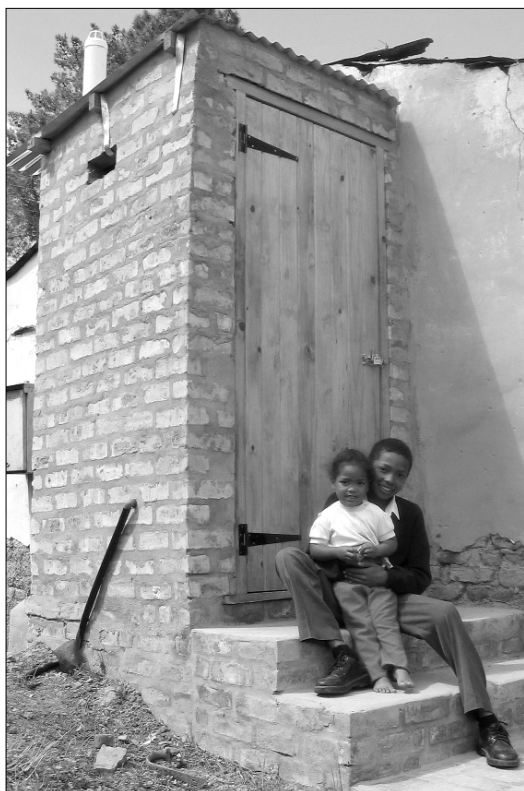
Bereaville comprises 348 dispersed households approximately five km from Genadendal. Housing ranges from RDP houses on small plots to old mud block housing with large plots for small-scale agriculture. It is extremely expensive to implement any centralised collection and treatment system, even if there were enough water for flush toilets. To complicate matters further, the houses are situated on steep valley sides comprised of a very blocky matrix of soil and stone overlying bedrock.

The winter rainfall flows do not penetrate deeply into the ground but flow just below the surface before rising again in numerous springs. Anything dug into the slope, therefore, tends to become saturated in winter, and anything put into the ground readily surfaces. This can be seen on the RDP houses that have been cut into the slopes rather than built out of the ground; they suffer from rising damp and surfacing of effluent from septic tanks.

Choice of Technologies

In this context technologies were sought that would:

1. Not require water;
2. Not require a deep hole in the ground;
3. Conserve the water available; and
4. Align with municipal strategies.



The chosen technologies were:

A dehydrating urine diversion toilet with external composting

The toilet has a very small chamber underneath the pedestal that is emptied monthly into a composter. The contents are kept as dry as possible in the chamber to prevent decomposition, but as soon as they are put in the composter decomposition occurs. The composter also accepts kitchen and garden waste.

Greywater recycling

Water from the kitchen and the bath is led into a small sump where a submersible pump sprays the water on the garden. This results in the double use of water, and a reduction in demand on the municipal supply.

Rainwater harvesting

The tanks were installed on the houses experiencing the most extreme supply problems. The tanks serve two purposes:

- 1) To catch rainwater and augment the municipal supply; and
- 2) To allow filling during off peak periods and ensure availability of supply during dry periods.

For more information on the technologies please consult the ***Introductory Guide to Appropriate Solutions for Water Supply and Sanitation*** (Number 7.2 in the Toolkit for Water Services).