



## With water only metres away

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IN APARTHEID SOUTH Africa, the government created Bantustans & Homelands. This was to segregate people and to perpetuate separate development for the different black groups and whites. In 1977 an area of approximately 9500 hectares called Winterveld in South Africa was incorporated into homeland Bophuthatswana. Winterveld was a typical informal settlement, very common in South Africa. Situated close to a well developed 'White' town, depending on it for its survival. Winterveld has no basic amenities, even drinking water. In Winterveld's case the 'white town' is the capital of South Africa, Pretoria.

The Bophuthatswana government did not interact with the Winterveld community or the owners of the plot when it decided to provide water. The provision of services was considered the prerogative of the government. This was a trait of the South African government when providing services to the black people, blindly followed by Bophuthatawana.

Water reticulation was provided in 1981 to Klippan a part of Winterveld that was urban in character. It was to cater for 280 plots but only 84 plots connections installed to date. The people were suffering the torments of Tantalus, WITH (drinking) WATER ONLY METRES AWAY, underground, in pipes.

To understand the situation in Winterveld it is necessary to know its history. All development in Winterveld, present and future is linked strongly to its unique his-

tory. In 1940 a group of white business people from Pretoria, sold freehold rights of the Winterveld Agricultural Holdings to black people. This area becomes one of the few areas in South Africa where land was purchased by black people before 1948. It was surveyed and legally registered in the names of the owners and remains so today unaffected by the apartheid period.

North Winterveld is rural in nature, with 8.4 hectare plots. The South urban in character with 4.2 hectare plots. Fig 2. The water was provided to Klippan an area in the south. The landlord of these agricultural 4.2 hectare plots are mostly absentee landlords. They carried out large scale irregular subdivision and rented them, creating random housing development. This was when agriculture became less profitable and when there was pressure for housing.

What is the reason that plot water connections were not given or taken? Legally only one connection per plot could be given to the owner. Owners were unwilling to obtain a connection because they had to pay a connection fee of R 1800 that is only 38% of recovery of source development cost the other 62% being subsidised. Further they would have to pay for the water used by the tenants and be unable to recover the expense from the tenants. Water from wells & boreholes provided in their plot is sold at a high price and the income from such sales is higher than the rent collected. For these reasons the need for a water connection was a low priority.



Figure 1. Map showing Bophuthatswana/South Africa

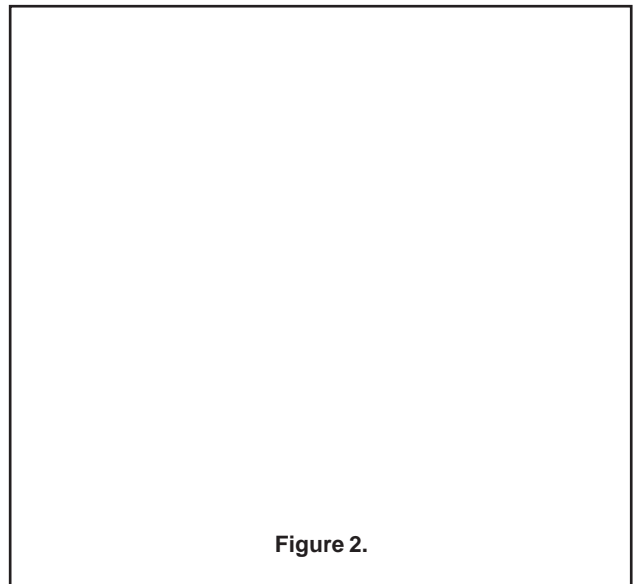


Figure 2.

The total number of dwellings in Klippan in 1990 was 20244 in 520 formal plots averaging 38 dwellings/plot. 96% of the daily domestic water needs are obtained from informal sources, such as from wells, boreholes and the Toloane river. A survey showed that the average household water consumption to be 120 litres/day or about 22 litres/person. This costs between R22 and R75 per month, that is 2.5% of the income of a household.

Although the ground water potential is not good, a high water table has ensured sufficient and reliable supply of water for primary and stock consumption. Most of the boreholes & wells are under the control of individuals thus creating a situation of dependency on the water sold by the landlords & other vendors. The price charged varies greatly throughout the area, depending on competition between vendors.

The people collect water mostly in plastic containers of 25 litres and pay 20-25 cents per container. Sometime they paid as much as 30 cents. Water is collected by women and children who walk between ½ to 1km to collect water. This pitiful situation is further aggravated by the water sold by the vendors being contaminated. In 1990 there was an outbreak of typhoid in the area. An investigation was carried out by the pollution section of the Department of Water Affairs. 34 wells' & 25 boreholes were tested for faecal coliform bacteria. Tests showed that only 12 of the boreholds were free of the bacteria. Fig 4 & 5. Test also showed Salmonella, the cause of typhoid,

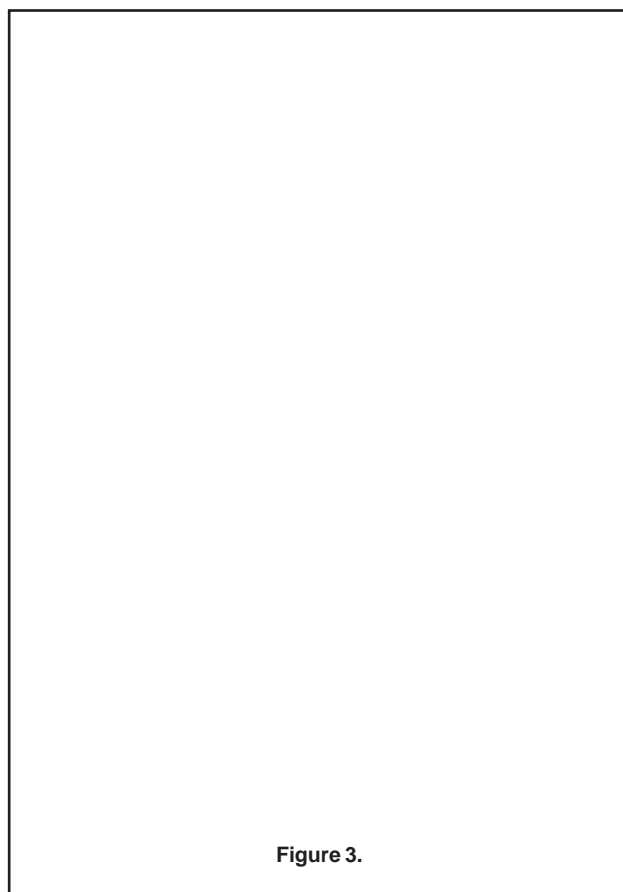


Figure 3.

**Table 1. Water supply infrastructure**

Type of infrastructure	1987	1995
Water mains	none	30km
Plots reticulated	none	280
Plots with yard taps or house connections	none	84

**Table 2. Access to water infrastructure**

Level of service	Population	%
House or yard connection	200	0.001
Borehole or well in yard	5600	3.1
Communal & vending taps	7800	4.3
Boreholes, wells, rivers	166000	92.25
<b>TOTAL</b>	<b>180000</b>	<b>100</b>

in one borehole and in the Toloane river. These results are not surprising. This is due to the use of pit latrines close to the wells & boreholes and animals drinking water from the uncovered wells. Further the high water table and ground conditions being suitable for easy seepage from the pit latrines to the wells & boreholes.

The Department of Water Affairs was in a difficult situation as it could not provide water connections to the plots without the owner's request. The landlords were not interested in a connection, and all the land was thought to be privately owned. The Department of Local Government and Housing being responsible for administering Winterveld investigated ways and means of providing water. The investigation showed that not all the land was privately owned. There were 7 plots belonging to the government. It was then suggested to the community representatives that water could be provided on these plots and made available to the people to the people through water kiosks.

Community requested that water be provided free of charge. The government was not willing to provide water free, pointing out that the people were paying for water bought from the vendors. Paying a high price for contaminated water, while the water provided at the kiosks would be safe drinking water at the same price. Costing allowed for the capital cost, the operating and maintenance cost. However the community argued that the South African government has given funds to the

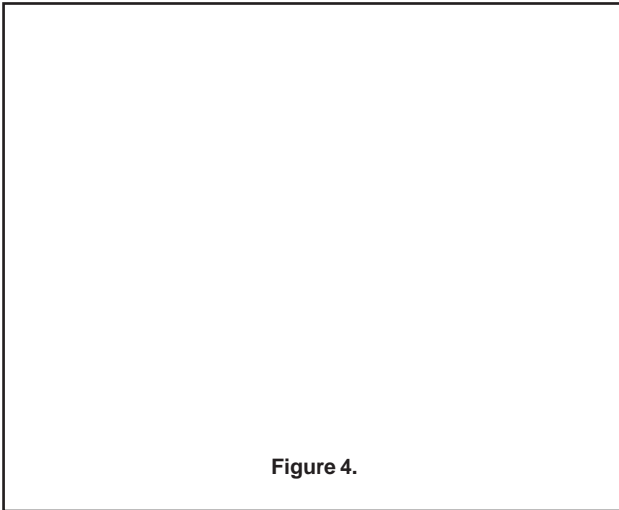


Figure 4.

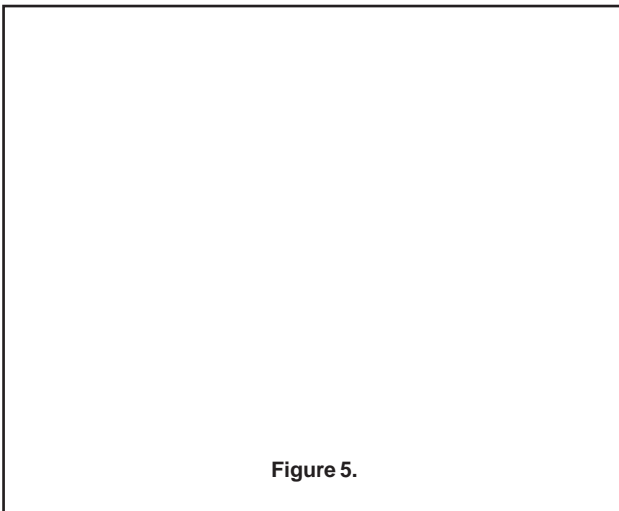


Figure 5.

Bophuthatawana government to provide services. This fund was given to entice the Bophuthatawana government, who were reluctant to take over Winterveld. The reason being the people in Winterveld were not of the same ethnic group as in Bophuthatawana. Department conceded to this and worked out the cost of water to recover only operation & maintenance. The cost was 8 cent's/25 litres. The cost of water 22%, operation 63% and others 15%. It was also pointed out that price could become less if the consumption exceeded the estimated amount. This was because the operation cost would be constant irrespective of quantity of water used. This price 8 cents/25 litre being far below the price of the water vendors, the community accepted to pay this amount suggested by the government. The provision of water through these 7 water kiosks was a short term solution to redress the non availability of affordable potable drinking water in the area. Although the solution was a scratch on the surface it was a process to provide water, sustain it and improve the process by extending it. This project will be run by the Water Authority with the cooperation of the people. When it came to the construc-

tion of the kiosks, plans were prepared keeping in mind that the building must be of a permanent nature. Functional in respect of the purpose for which it was built and be economical. To ensure it was permanent the building was of brick on sound foundation with a concrete plank roof. To be functional it had to be big enough to hold 8 water taps, let people get in with large buckets & 25 litre plastic canister and hold 8 people. Further it needed to accommodate an operator who could sit comfortably and collect tickets and monitor the people entering and exiting. For security purposes air bricks were provided instead of windows. To prevent people hustling & bustling and to control unidirectional entry, turnstiles at the entrance & exit were provided. Fig 3. This plan was approved by the community with a request to install wider turnstiles to allow easier access for those with large receptacles. Further to improve visibility to help the safe guarding of personal items left outside such as wheel barrows.

To follow the community's request to use local contractors for the construction of the kiosks, the department proposed to identify contractors within the area. A programme to recruit & train contractors was launched. The first meeting was attended by 50 people. Those who turned up were mostly semi skilled labourers who preferred to sell their expertise. However, four contractors were identified after the meeting. They were recommended to the Tender Board as suitable contractors. The tender board accepted the recommendation.

The contract was to be managed as a normal civil engineering project. Several meetings were held to explain the tender procedure and the General Conditions of Contract that governs the way a contract is managed. Aspects highlighted were the retention period, interim payment certificates, penalties for late completion, surety and insurance. Also, explained was the process of pricing a tender. Tender documents were prepared which included a material list to help pricing of the schedule of quantities. Tenders were called for in August 93. Four contractors submitted tender for the 7 kiosks. The evaluation showed an over pricing of the tender. It was decided to renegotiate with the prospective tenderers. During negotiations the department waived the provision of surety as none of the contractors had access to underwriters. Tender Board approval was obtained for 3 contractors as one withdrew. The three shared the 7 kiosks.

As the contractors were not financially strong, suppliers were reluctant to supply on credit. This could have delayed the start of the project. The consulting engineer took upon himself to negotiate with the suppliers to supply materials on credit to the contractors. With the department's agreement he undertook to ensure payment by retaining the contractors monthly payment cheque if he did not settle his account with the previous cheque. The occasion did not arise as the contractors promptly paid the suppliers.

The department normally takes 30 days to pay a claim. This was not suitable in respect of this contract as the contractors depended on the payment to overcome cash flow problems. It was decided that the consultant would collect the certificate and check and approve and deliver it to the department in Mmabatho 350km from Winterveld the next day. The department would process it immediately and pass it for payment. The account section to have the cheque within a week. The consultant would then collect the cheque and deposit into the newly opened account of the contractors. This worked very well.

The construction items were,

1. Foundation including drains
2. Ironmongery
3. Construction of walls to roof including air bricks
4. Installation of turnstile and roof.

The setting out was done by the Engineers Representative. The work went on satisfactorily. At one site the walls built to 1m height were demolished at night. It was suspected that a water vendor in the vicinity could have done it as the building of kiosks would be detrimental to his business. Further problems were the supply of the turnstiles. The construction of the kiosks went much faster than the local subcontractor could deliver turnstiles. The taps could not be installed until the turnstiles were in place. This seriously hampered the handling over of the kiosks. However water was provided and the kiosks became operational with minimum of delay. This project not only provide water it also implemented capacity building and training. This process would be used in future projects.

To run the kiosks it was agreed with the community to employ young persons, both female & male. To avoid transport problems those close to the kiosk would be employed. Two such persons in each kiosk would operate in shifts from 6.00 hrs - 10.00 hrs and 15.00 hrs - 18.00 hrs every day. To avoid handling of money by the operators, tickets were sold at the office of the Water Authority.

To avoid fraud, tickets of different colours are issued at intervals. Each ticket would purchase 25 litres. The operator for each shift would read the meter before opening and after closing. Once a week the operators met at the office of the Water Authority and handed over the tickets & meter readings to the supervisor for checking meter reading versus collection of tickets. The discrepancies were negligible. It was found that the female operates proved to be better than the males in their accuracy & discipline. The operators at the end of the day locked the kiosks and closed the supply valve with a special key.

This project is a good example of how the community helped to protect assets that they felt belonged to them and helped to make the project successful. The new government of unity under the Reconstruction And Development Programme (R.D.P.) has already identified the need to provide water to Winterveld. Under the Presidential special R.D.P. R23 million has been set aside for the provision of water to the whole of Winterveld i.e. both north and south of Winterveld. For the first phase of application of the provision of water is to provide water taps at 200 M intervals. This is the basic minimum standard set in the White Paper of the Department of Water Affairs & Forestry. The taps will be managed by water committees. In the area discussed in the paper the taps would be placed at the edge of the plots. The water would be managed by water committees. The experience gained from the operation of the water kiosks could be used by the water committees. Under the new dispensation, those in a plot could group together and obtain a loan. With this loan they could reticulate the plot and have individual connections.

### References

- Construction of Winterveld Water Kiosks (Consultburo November 94)
- Case Study of Informal Water Supply in Winterveld Report 2. (Palmer Development Group Oct. 93)
- Winterveld Structure Plan & Development Guidelines. (Taylor & Associates Apl. 94)