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The Botswana Aqua Privy

J.G. Wilson

Low-cost sanitation developments in Botswana date back to the early 1970s, when the government undertook initial work on fiberglass aqua privies. The prototype, called the Apec privy, had various technical problems, including flexing of the floor under load, an ill-designed sitting pedestal, and a superstructure that was uncomfortably confining while not offering sufficient privacy because of the large ventilation gaps at the top and bottom of the door. This resulted, in 1975, in the government officially banning any further installation of the Apec privy (Blackmore et al. 1978).

The Botswana “Type B” Aqua Privy

As part of the investigation into alternative forms of low-cost sanitation, the government, together with the International Development Research Centre (IDRC), Canada, developed the “type B” aqua privy (Fig. 1). Conceived around the necessity for a household to bring onto the plot, regardless of the distance to the source, a minimum volume of water for domestic purposes, the “type B” aqua privy simultaneously overcame the problem of sullage disposal and the need for aqua chamber topping up through a reuse facility. Based on the Vaal Potteries Spiraflow Aqua Pan, the “type B” aqua privy incorporated one of two alternative washing fitments, an internal handbasin/external wash through, plumbed into the flushing rim of the pan, whose hydraulic design characteristics encourage a spiral scouring movement of the water when flushed from the fitment, around the ceramic wall and chute, before discharging into the chamber (Blackmore 1978).

A great advantage of the unit is its suitability for being upgraded at a later date. If the householder can afford a water connection, a conventional flushing cistern may be plumbed into the pan. In addition, the overflow from the tank can be connected to a piped drainage system if such a system subsequently becomes available.

However, since its general acceptance, certain user and technical problems have occasionally occurred. The most common problem is the rejection of the unit by some people on the grounds that the tank is too
small; an assumption, based on the belief that the aqua privy operates in a similar manner as the pit latrine, that is incorrect. The inability to add at least 5 litres of water per day to the tank to maintain the water level is another problem. This lack of user maintenance is partially blamed on the lack of suitably close standpipes in some areas and also partially on the belief in secrecy when using the toilet (being seen carrying water to a toilet divulges the secret and causes acute embarrassment to the individual). A further problem has been the belief by some that any water placed in the washbasin attached to the aqua privy immediately becomes contaminated and, therefore, people are very reluctant to use this facility, preferring to use a completely separate container instead.

Technical problems encountered include ensuring that the tank is and remains watertight, together with preventing the rubber connection between the sullage drainpipe and the Spiraflo Aqua Pan from perishing; maintaining a fly screen; and ensuring that the soakaway does not become clogged.

The government appreciates the applicability of such systems, particularly in development areas that will eventually become upgraded and is, therefore, actively seeking methods to overcome these problems. In 1977, it was found that the cost of waterborne sewerage in Botswana was almost twice the cost of aqua-privy systems (S.E. Daher, personal communication, 1977) and, therefore, an on-site system should be considered as being the most appropriate, at present, to cope with the high rate of urban development.

It has not been the intention of this paper to create the impression that the aqua privy, as used in Botswana, is a failure. In fact, the opposite is prevalent wherever the aqua privy is in use. Botswana has learned from its past mistakes of introducing a sanitation unit before fully evaluating whether or not it was technically and culturally acceptable. As the government increases its manpower in the various disciplines of the sanitation sector, such mistakes are not repeated and sound economical, technical, and culturally acceptable sanitation programs are being implemented.