

Good Practice 3

Urine-diverting Alternating Twin-vault Ventilated Improved Vault Latrines

Urine-diverting alternating twin-vault ventilated improved vault (VIV) latrines [UD-VIVs] are, like VIP latrines (see ‘Good Practice 2’) and pour-flush toilets (‘Good Practice 4’), one of the simplest improved sanitation options for excreta (faeces and urine) management. When combined with good greywater management (see ‘Good Practice 6’) they form a sustainable sanitation system. They are sometimes known as ‘eThekwini latrines’ after the municipality in KwaZulu Natal in South Africa where they were developed.

UD-VIVs have two separately ventilated above-ground vaults used alternately, each for a year. The UD-squat pan or UD-pedestal seat is located above the vault in use and the entrance to the vault not in use is closed off. The diverted urine is discharged to an adjacent soakaway (the eThekwini UD-VIVs have a urinal as well as a UD-pedestal seat, but this feature is optional). The faeces (plus any anal cleansing materials) partially decompose in the vault when it is in use in ‘year 1’ and this process is completed when this vault is not in use in ‘year 2’ (when the other vault is in use). Towards the end of ‘year 2’ the vault is emptied manually (by using a long-handled shovel) and the decomposed contents are buried on-site. At the start of ‘year 3’ the vault is put into use once again. Urine diversion ensures that the vault contents are essentially dry and so permits their easy removal. Maintenance requirements are minimal: regular cleaning of the squat-pan or pedestal seat, plus annual emptying of the vault not in use.

The eThekwini UD-VIV latrine is shown in Figures 1- 6.



Figure 1. Front view of eThekwini UD-VIV latrine.



Figure 2. Front view of eThekwini UD-VIV latrine with the door open, showing the UD-pedestal seat and urinal, also the closed-off entrance to the vault not in use



Figure 3. Close-up view of the UD-pedestal seat (front compartment for urine, rear compartment for faeces).



Figure 4. Rear view of eThekweni UD-VIV latrine, showing the two above-ground separately ventilated vaults and, between them, the pipe taking the diverted urine to an adjacent soakaway.



Figure 5. Close-up of one of the vaults with its sliding door partially open. The urine-diversion pipe is clearly visible on the right.



Figure 6. Poster (in Zulu, the local language) telling the users how to use the UD-VIV latrine correctly.

Further information:

eThekweni's Water & Sanitation Programme, Water Information Network - South Africa, Pretoria; available at: <http://www.dwaf.gov.za/Events/SanitationWeek/2006/documents/WINSAlesson2.pdf>.

eThekweni Water and Sanitation: A Case Study, University of Leeds website available at: <http://www.personal.leeds.ac.uk/~cen6ddm/WatSan.html>.