

## Good Practice 4

# Pour-flush Toilets

Pour-flush (PF) toilets are 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. PF toilets can be either single-pit units or alternating twin-pit units (Figure 1). Single-pit units are used in rural areas, where there is space for a second pit to be constructed when the first is full, or in periurban areas if there is sufficient space for them and they can be emptied mechanically. Squat-pans with an integral water seal (Figure 2) or pedestal seat units, also with an integral water seal (Figure 3) are used, depending on the users' preference; the water seal prevents insects and odours from the leach pit entering the superstructure. The excreta (faeces and urine) are manually flushed with 2-3 litres of water into an adjacent leach pit (Figure 4).

Alternating twin-pit PF toilets are used in exactly the same way as alternating twin-pit VIP latrines ('Good Practice 2'); they are especially suitable in low-density periurban areas (provided they are cheaper than simplified sewerage - see 'Good Practice 8'). The only

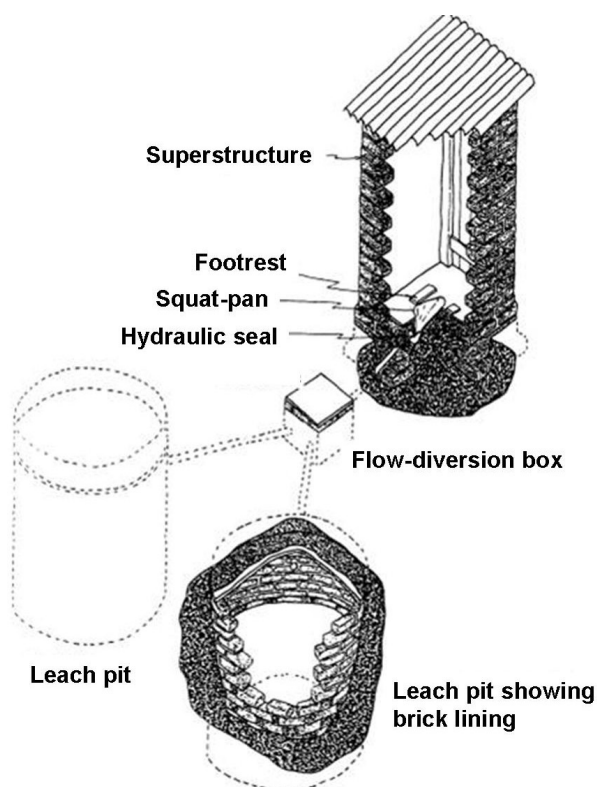


Figure 1. Schematic diagram of an alternating twin-pit pour-flush toilet.

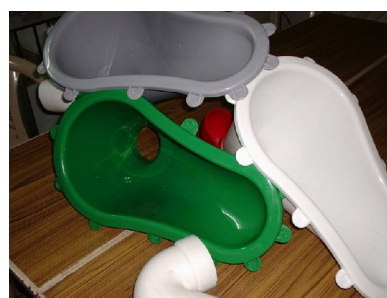


Figure 2. Low-cost polypropylene squat-pans and traps (Gramalaya).



Figure 3. Colombian ceramic pour-flush pedestal seat unit.



Figure 4. Excreta being flushed into the leach pit.

difference is the flow-diversion box: this directs the wastewater (faeces, urine, flush water) flow to the leach pit in use (the outlet to the pit not in use is blocked off – for example, by a brick wrapped in hessian)

PF toilet leach pits are designed differently from VIP latrine pits as they have to have sufficient infiltrative capacity for the flush water, in addition to sufficient solids storage capacity. Leach pit design life is normally ~10 years for single-pit units and 1-2 years for each pit in alternating twin-pit units. The latter can be emptied manually as all excreted pathogens, with the exception of a few *Ascaris* eggs, die within 12 months.

**Further information:**

Jah, P. K., *Sustainable Technologies for On-site Human Waste and Wastewater Management: Sulabh Experience*, Asian Development Bank, Manila, 2005; available at: <http://www.adb.org/Documents/Events/2005/Sanitation-Wastewater-Management/paper-jha.pdf>

University of Leeds, *On-site Sanitation*, webpage, with links to several PF publications, including World Bank design manuals, at: <http://www.personal.leeds.ac.uk/~cen6ddm/WatSan.html>.

**See also** *Sitters & Squatters and Washers & Wipers*, University of Leeds webpage at:

<http://www.personal.leeds.ac.uk/~cen6ddm/SitSquatWashWipe.html>,

and *Pit Emptying*, University of Leeds webpage at:

<http://www.personal.leeds.ac.uk/~cen6ddm/PitEmptying.html>.

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