

COMPOSTING LATRINES

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ECHO APPROPRIATE TECHNOLOGY NOTE

INTRODUCTION

Composting latrines are an improvement on open pit latrines because they yield a useable fertilizer after a few years. Several of the designs described in this technical note also have passive solar ventilation for better air circulation and less odor.

MATERIALS

Concrete or brick
Plaster to waterproof the interior walls of the pits.

DESCRIPTION

BASIC DESIGN

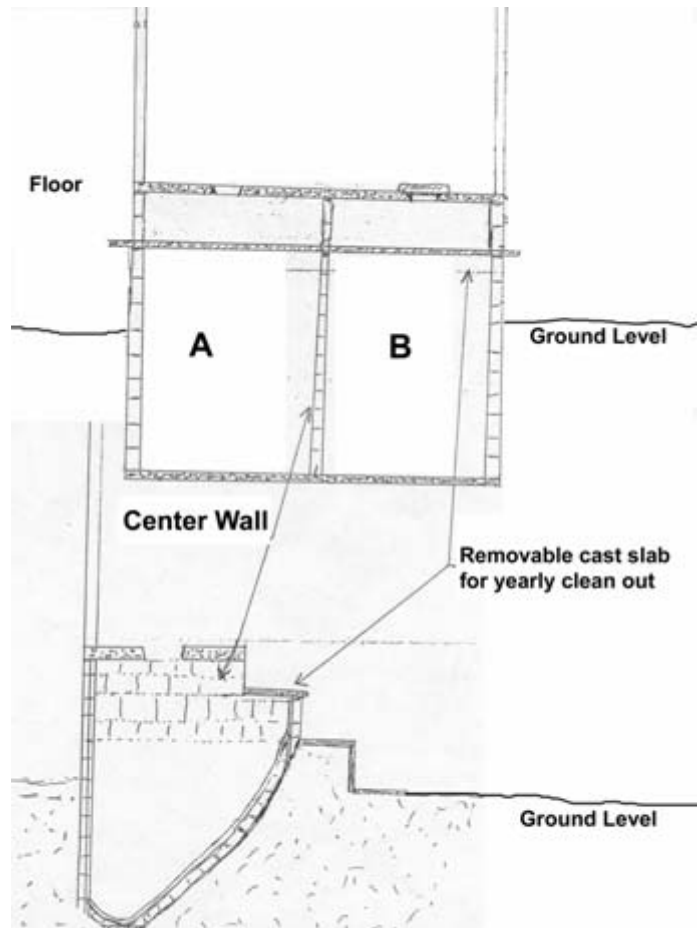
Figure 1 shows a basic sketch of a composting toilet that was built in Mbandaka, Zaire, in 1988. Essentially the toilets are two pits built side by side with a floor and a center wall separation. The hole from pit B will be covered and pit A will be used for one year, then pit A will be covered and pit B will be used for one year. At the beginning of the third year, the step slab will be removed and pit A will be cleaned and put back in use while pit B is covered. The compost will be dry when removed.

Note: The interior walls of the pits must be plastered to make them waterproof.

Figure 1. Cutaway front and side views of basic composting latrines

Cutaway front view of latrine

Cutaway side view of latrine



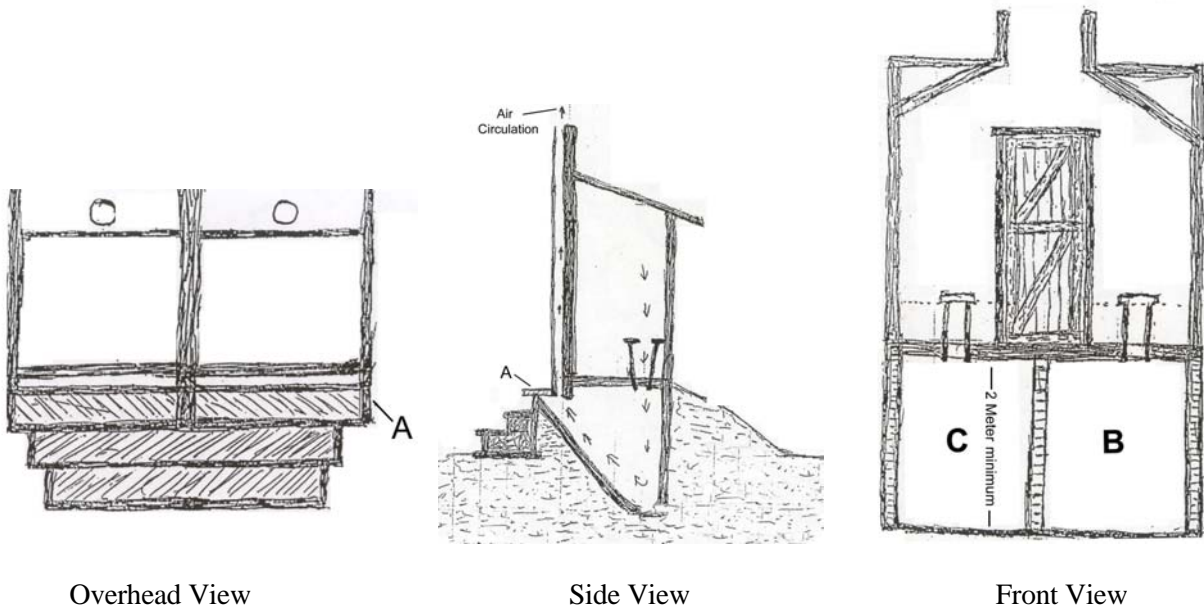
PASSIVE SOLAR VENTILATION COMPOSTING LATRINES

These latrines have one double wall (outer one is transparent). The sun warms the air between the inner and outer walls. As the warm air rises, it draws the air from the upper part of the latrine through the pit and into the double wall, where it continues to warm and rise.

DOUBLE WALLED FRONT WALL

The top step (A in figure 2) is a removable slab for compost removal. A latrine without the double front is a typical basic composting latrine. Side B is used for the first year. It is then locked and side C is used for the second year. At the end of the second year, side B is emptied. Side C is locked and B is again used for the third year. The latrine's double-walled front is covered with plastic film or rigid transparent covering. Be certain that the rear roof overhang is sufficient to prevent pit back fill.

Figure 2. Double front wall passive solar ventilation composting latrines.



DOUBLE WALLED REAR WALL

This is a latrine with a double-walled rear wall. The outer skin of the double wall may be transparent plastic material or sheet metal roofing painted black.

The sun's rays heat the double wall construction causing passive air circulation to vent odors and to quicken compost action. These latrines will still compost without the double wall construction in warmer climates.

Figure 3. Double rear wall passive solar ventilation composting latrine.

