Collecting, storing and using urine from an existing school boys urinal.

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The usefulness of urine in schools

Plants like maize, green vegetables several species of tree respond well to urine treatment. Urine can be collected in bottles in the school boys toilet, but it is also possible to tap it from existing boys urinals. The method described here involves building a brick tank outside the urinal into which urine is fed from a cut PVC which is attached to one wall of the urinal.

Fitting the urine collector inside the existing urinal

A 75mm thick walled PVC pipe is cut along most of its length and placed on one wall of the existing urinal. It is sloped so urine will run down the channel. It is supported on mall brick columns. The school boys are performing the job here. On one side the pipe passes through the brick wall of the structure and outside where the tank will be built.

Building the tank outside the urinal

The brick walled tank consists of a concrete base, a circular brick wall and a concrete cover with holes made in it for the urine inlet and a small PVC hand pump to extract the urine. The concrete base can be cast in a hole which is dug down in the ground for the tank. The walls of the tank are built up in brick. The tank in this case is one metre in diameter and 0.75m deep. Larger tanks can be built.

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The walls of the tank are built up to at least one course above ground level. The wall carrying the PVC pipe from inside the urinal should be above this level to maintain the slope.

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The side walls of the tank are plastered with cement mortar to make them water tight. The bottom of the tank is then plastered. The tank must be sealed to retain urine.

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Making the cover slab for the urine tank.

This is made 1m in diameter in this case with two holes. The central hole is for the urine input and the outer hole for the short handpump which will be fitted later. The central hole will have a stainless steel screen fitted into it and the outer hole will have an insert with a thread into which the pump will screw.

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Inside the urinal the PVC pipe is made to fit the wall closely. Outside the urinal the tank cover has been fitted and the PVC pipe positioned to run into the centre hole with the screen

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The wall through which the PVC pipe passes is neatened and secured with cement mortar. A general view of the urinal pipe within the urina. Note that only part of the urinal is used to direct urine into the tank.

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The PVC pipe is secured in place. A special concrete fitting is made with the threads of the pump cast into it. The PVC pump (a small version of the Blair Pump) as a thread on it which screws into the thread held in the concrete casting.

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The final installation. The PVC Blair Pump (mini version) has been fitted. A small concrete apron is laid down where the bucket which collects urine will be placed.

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Looking down inside the tank to see the collecting urine.

The urine is raised from the shallow tank by pumping the handle up and down. Normally thin rubber gloves are worn for this purpose. The urine is collected in buckets and diluted with water before application to trees and other plants.

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The urine from this tank is used to fertilise gum trees in a woodlot, vegetables, and also bananas planted at the end of the school hand pump. The growth of the bananas is very great as the photos reveal. This growth results from the huge amounts of nitrogen present in urine as well as other important nutrients