

# ***A urine pump for the school urinal tank***



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***At Chisungu school an existing boys urinal was modified to collect urine and deliver it to a tank made of concrete and bricks***



***A PVC pipe was cut along its length to capture the urine against an existing wall. The PVC pipe leads urine to a concrete tank below ground. It now requires a plastic pump to raise water from the tank into buckets***



***The pump is best made in PVC. In Zimbabwe a modified all plastic Blair Pump is used. In other countries like Malawi, a Mark V pump could also be used.***



***A simple prototype Blair pump. The handle also acts as a water spout***



## ***Modified Blair Pump (inner pipe)***



***The Blair pump has an inner (25mm) and outer (50mm) PVC pipe. A valve is screwed into the bottom of each pipe.***



## ***The outer pipe***

*The inner pipe is fitted into the outer pipe and a hole is made higher up through the wall of the outer pipe to let excess water (or urine) out during pumping.*



*The outer pipe and foot valve*

***The valves in this case (piston valve and foot valve) are specially made items.***



***A hard rubber ball is used as a valve. It rests on a circular PVC seat inside the valve assembly.***



## ***The pump in use***



*To test the pump the inner pipe is fitted into the outer pipe and placed in a bucket of water. By pushing the inner pipe and up and down water is released from the handle.*

***The concrete slab covering the urine tank is made with two holes in it. One to allow urine in and one to fit the pump. A 50mm steel socket in to which a PVC thread fitted around the outer pipe of the pump is fitted.***



***The urine inlet hole is fitted with a stainless steel screen to stop larger items falling in. In this case the pump handle has been made to look like a walking stick!***



## ***Close up photos of the actual pump***



***Full pump complete and inner and outer pipes***



***Close up photos of the actual pump***



***Pump handle***



## ***Close up photos of the actual pump***



*Upper fittings*



***Close up photos of the actual pump***



***Piston valve and foot valve***



***The pump is  
screwed into the  
socket mounted in  
the slab and the  
handle moved up  
and down.***

***It is best to wear  
plastic gloves for  
protection.***



***It is best to fit an overflow pipe through the upper wall of  
the tank to allow excess urine to flow into a seepage area  
which can be a group of banana trees.***