

***Making a small
brick spiral VIP
for the primary
school.***

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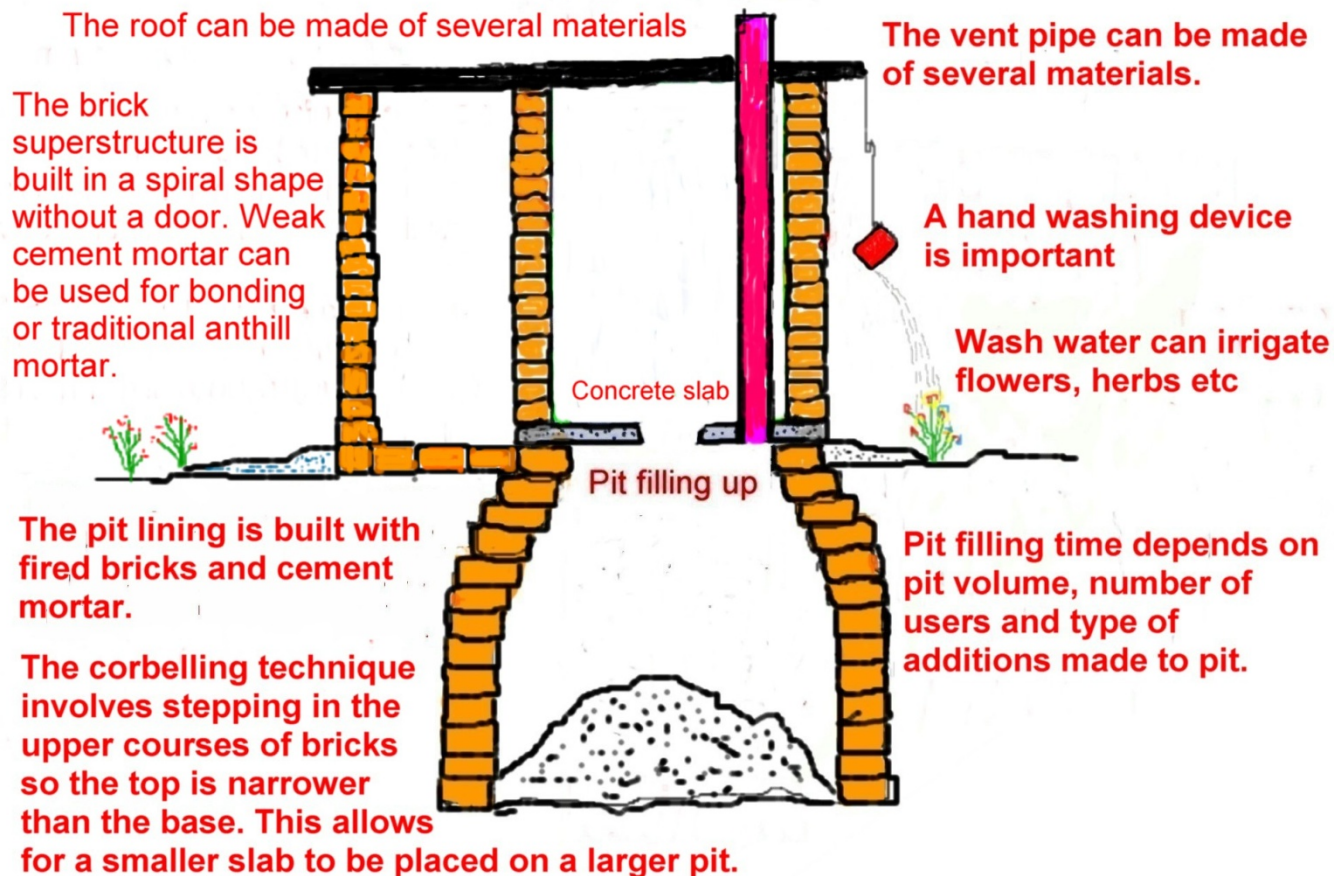


*In this power point presentation we describe how to make the fully brick spiral version of a lower cost **VIP toilet** suitable for the primary school*



*This is a schematic cross section of a **VIP** toilet with a spiral door-less superstructure*

The Blair VIP toilet with corbelled brick pit lining



Construction of the Blair VIP

The VIP toilet is made in a series of stages:

- 1. Make the slab*
- 2. dig and line the pit (if a brick lined pit is used)*
- 3. Fit the slab on the upper pit lining*
- 4. Build the superstructure*
- 5. Make and fit the roof*
- 6. Make the vent pipe (this will have been made beforehand)*
- 7. Fit the vent pipe*
- 8. Improve the floor at the entrance*
- 9. Neaten all parts*
- 9. Fit a hand washing device*
- 10. Make a pedestal*
- 11. Plant a tree!*

Stage one

Make the concrete slab

The **concrete slab** is quite easy to make once the training has taken place. A 1.1metre diameter slab uses 10 litres of cement (PC15) and 50litres of river sand and about 8m of 3mm wire. A full bag of cement holds 50 litres of cement. The slab is made with apertures for both squat (pedestal) hole and vent pipe hole. This means the slab can be used on simpler toilets without pipes or with Blair VIPs.



Stage one

Make the concrete slab

*Half the concrete mix is added first within a mould made of bricks (or steel shuttering). The wires are then added and the second half of the mix added and smoothed down. Once the **concrete slab** has set hard (overnight) it is cured by leaving it covered and wet for a week before moving. This standardised slab can be used to make a wide range of toilets.*



Stage two

Dig the pit and line with bricks

In this case the toilet is being made by school children and the pit is dug down to only one metre deep. Normally a pit will be dug down to 2 or more metres deep. Fired bricks are gathered.



Stage two

Dig the pit and line with bricks

In this case the pit has been dug just over 1.5m in diameter so the internal diameter of the pit will become 1.3metre (bricks are 110mmwide). The lower courses are laid straight up. The upper courses are "corbelled" that is they are stepped in. A weak mix of cement is used (1 part cement to 16 parts pit sand).



Stage two

Dig the pit and line with bricks

The upper most courses are bricked up so that they are just above ground level and the outside diameter is the same as the diameter of the slab (1.1m). The gap between the upper brickwork and the pit wall is filled in with soil. A layer of weak cement mortar is laid on the brickwork. The slab is not perfectly flat and needs to "bed in" to a soft flexible mortar.



Stage three

Fit the slab

The cured slab is then picked up, cleaned and carried over carefully to the brick lined pit. It is laid centrally over the upper course of brickwork in the weak cement mortar.



Stage four Build the superstructure

At this stage we have a fully brick lined pit which is stable and a strong concrete slab capping the pit fitted with a squat and ventilation pipe hole.

It is possible to build many types of superstructure on or around this slab. These can be low cost traditional structures made of grass or poles at first. But in each case they can be upgraded to fully brick structures.



Stage four

Build the superstructure

In this case we shall show how a spiral bricked walled Blair VIP can be made. This is made without a door and has no moving parts which can wear out (just like the standard Blair VIP). With the spiral version of the Blair VIP part of the superstructure is built off the slab and to one side. It is important to build a brick foundation on which the brick wall will be mounted outside the slab.



Stage four

Build the superstructure

The foundations are built up using weak cement mortar (16:1) to the level of the slab. We can see the shape building up. Bricks mounted on the slab itself are shaped in a circle. The photo on the right shows the first layer of superstructure brickwork. The space between the wall and slab is filled with soil and compacted.



Stage four

Build the superstructure

The superstructure walls are then built up with 19 courses of bricks. At about the 15th course a series of glass bottles are introduced into the wall of the structure to allow a little more light into the Blair VIP.



Stage four

Build the superstructure

These little windows are not essential, but some people think the interior of the standard Blair VIP is too dark. These windows (which is a new innovation first used at Chisungu School) allow a little light into the interior, which does not affect fly control.



Stage four

Build the superstructure

The brickwork is built up to 19 or 20 courses. For school children this means standing on chairs to get up high enough.

It can be Fun!



Stage five

Make and fit the roof

The roof must now be made and fitted. This can be made of tin sheets or asbestos or even thin cement panels. In this case a wooden frame has been made with reeds laid down inside and plastic sheets covered over the top. Grass can be laid over the plastic sheets to protect them.



Stage five

Make and fit the roof

The roof must be waterproof. Plastic sheets help and are laid down on top of the reeds or other timbers. Black plastic sheet must also be used to reduce light in the structure. The roof is then laid and secured on the superstructure.



Stage six

Make the vent pipe.

Vent pipes can also be made in the home or school. There are several methods. Some use reeds formed into tubes and covered with material which is painted with cement and water made into a paint like material.



Stage six

Make the vent pipe.

Vent pipes can also be using PVC pipes as a mould and covering these with plastic sheet and then placing several layers of "newsprint" paper soaked with "cement paint" over the mould. These can form very strong and long lasting pipes if made correctly. This method will be described in detail in another power point presentation



Stage six

Finish the vent pipe - fit a fly screen.

The cured vent pipe is then fitted with a fly screen. This must be made of screen which will not corrode. Alumium is a good material which will last for at least 10 years. PVC coated fibreglass will last for 5 years. Stainless steel is best but is expensive. The screen is wired on to the pipe and the wiring is best covered with a little extra cement mortar.



Stage seven

Fit the pipe

The pipe is inspected and fitted through the roof and placed over the hole in the slab.



Stage seven

Fit the pipe

The pipe is cemented in place on the slab. The black plastic sheet is then carefully laid around the pipe. A hole must be made in the sheet around the pipe. The plastic sheet must be covered with grass to protect it from the sun. The roof can be overlaid with more permanent materials later in an upgrading process.



Stage eight

Improve the floor at the entrance

The toilet floor is the slab. But the entrance area must be covered with a layer of cement to make it durable.



Stage nine

Neaten it all up.

The toilet now needs tidying up to look all smart



Stages beyond!

And Yes there's more we can do!

We can make a pedestal

Low cost pedestals can be made with cement and plastic buckets to fit over the squat hole. The squat hole may need opening up a bit, but that is easy!

LOOKS SMART HEY?



Stages beyond!

And Yes there's more we can do

We can make and fit a hand washing device

They are also easy to make with a can or bottle and wire.

And very important for personal hygiene



Stages beyond!

And Yes there's more we can do!

We can plant a tree near to the toilet

The tree will grow over the years and then the roots will tap into the compost formed in the pit and the tree will grow much bigger and make more fruit. Here a mulberry is planted next to our toilet.



Stages beyond!
The tree and the toilet together
Lots of vitamins to come!!



And the future - WHO KNOWS!
The Headmaster and us!

