

Report on Kalene Septic Tanks

Introduction.

This is a report on the state and action required to overcome the problems with the septic tanks

History

The septic tanks were constructed approximately 30 years ago. At that time two tanks were constructed. The plan was to use one septic tank at a time by the use of a selector shutter on the inlet to the tank. Every six months this system was designed to be diverted from one tank to the other tank, given one tank time to rest so a chemical reaction can take place within the tank. Then the other tank would take the waste for the next six months, then the process would be repeated for the next six-month cycle on the opposite tank(s). The hospital was much smaller then and the system was satisfactory. The tanks were also emptied periodically.

Recent problems

It has been discovered that selector shutter is broken on one of the septic tanks. This has the effect of the six-month rest and operation failing, and one tank taking all the sewage. The selector mechanism is very old and irreparable. It is also physically some 2.2 metres below the ground level at the base of a sewer manhole which is inaccessible to normal humans because of the depth, physical size and nature of them being sewers. The only way to get to the selector is to dig down the outside of the manhole, and make an access hole in the side wall, all this while raw sewage is passing through the manhole. Even if the selector was assessable it is too old to repair.

Solution

The only solution we see is to construct a third septic tank in the plot of ground beside the two existing tanks. This will alleviate two problems:
1. Give another holding tank for sewage that can be used in a new 3 cycle of rest and use. See chart below.

6 month cycles	Tank 1	Tank 2	Tank 3
Example 1	Use	Rest	Rest
Example 2	Rest	Use	Rest
Example 3	Rest	Rest	Use
Back to ex 1	Use	Rest	Rest

2 To give the opportunity to run new pipes to the existing two septic tanks and a new selector/gate valves to control the flow to the three septic tanks thus doing away existing manhole and faulty 2-tank selector.

Inspection

We have recently had an inspection of the septic tanks and their problem by the Executive Director of Brass Tacks Mr Colin Breeze. Mr Breeze heads up this practical building and maintenance organisation and has a lifetimes experience in problem solving when it comes to buildings and associated services like water and sewage. When the problems and solution were given to him for his inspection, his reply was the need of a new tank and selector system.

Up dated drains

Back in 2007 a team of workers from Brass Tacks came and installed a new drainage system at the hospital. This was to stop the discharge of wastewater running into surface drains, thus making the hospital a cleaner & healthier place. Since then all this wastewater has been discharging into the sewers, and on into the septic tank(s), thus filling them up more quickly

Present need and future use of septic tank

As stated in the introduction, the tanks were constructed some 30 years ago, when the hospital was much smaller. Now in 2010 the personnel at the hospital are greater. There are now more people in the following areas:

Patients

Nurses

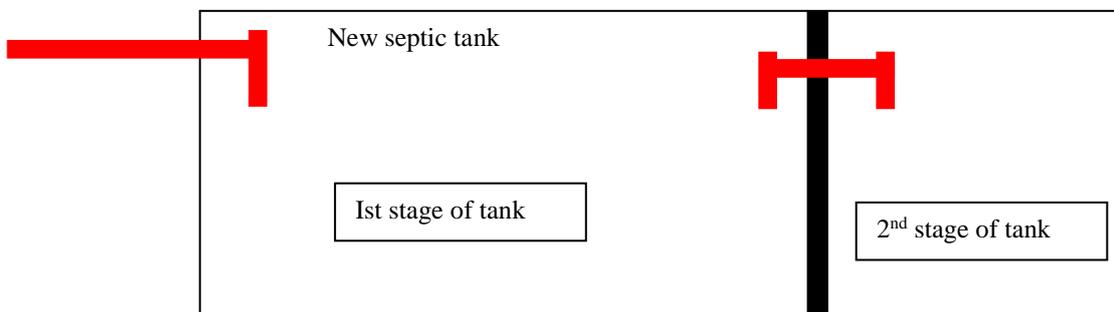
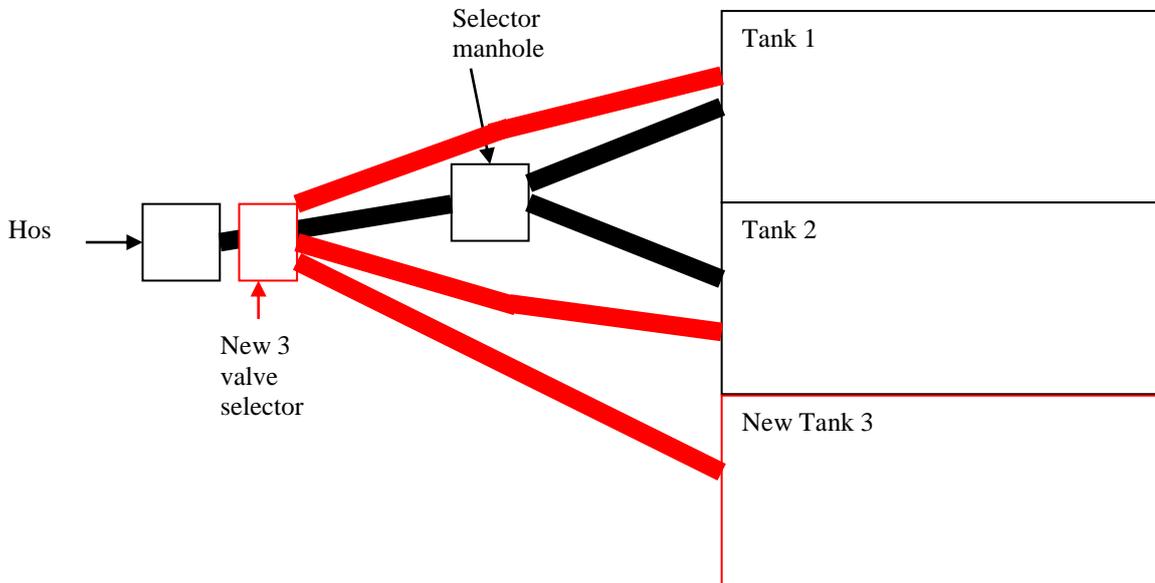
Staff

School of Nursing.

All these people discharge their wastewater & sewage into the sewers and on to the septic tanks. If this problem is not attended too soon, there is a potential of a major failure of the sewage system, compromising the care of patients in the hospital and the living conditions of students in the nursing school.

Plans

The plan to build a new septic tank and re pipe the final section is as follows, the new work being in red, and the black pipe(s) removed:



Costs

It is estimated that the cost of the project for labour and materials is as follows: K70M (Seventy Million Kwacha)

Report compiled by Paul Hannay of the building and maintenance department of Kalene Mission.