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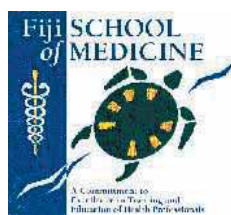
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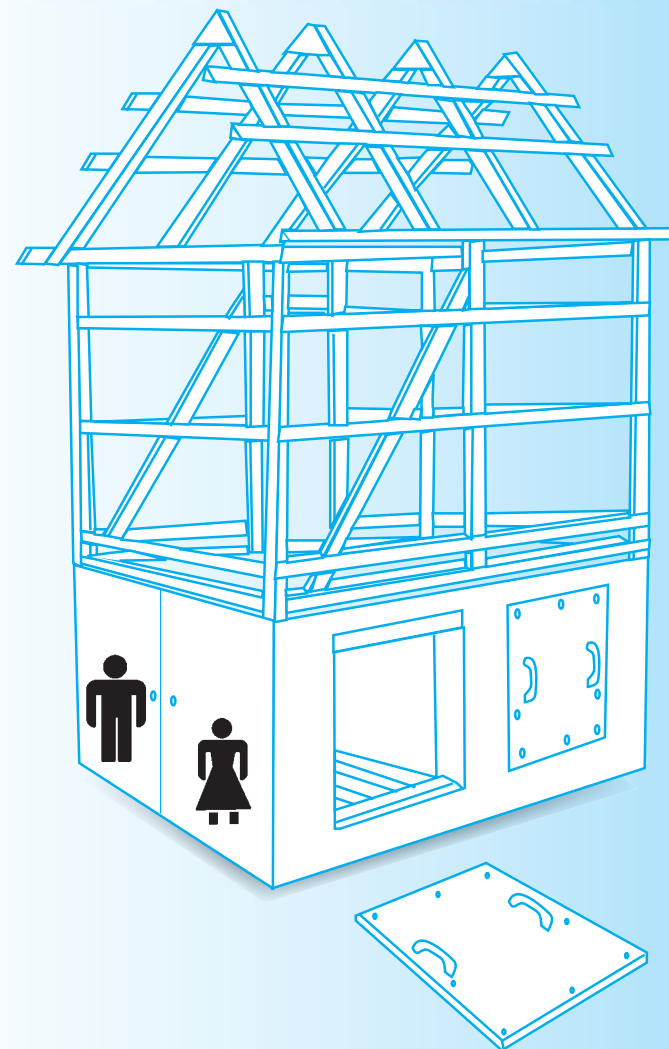
## Acknowledgement

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# The Sanitation Park Project



SOPAC Miscellaneous Report 595

“Water and Sanitation is one of the primary drivers of public health. I often refer it as ‘Health 101’, which means that once we can secure access to water and adequate sanitation facilities for all people, irrespective of the difference in their living conditions, a huge battle against all kinds of diseases will be won”.

Dr LEE Jong-wook, Director General, World Health Organization.



There is very little attention given to sanitation and hygiene issues in the Pacific region. Communities are still susceptible to water-borne diseases due to the lack of access to adequate sanitation and limited awareness on hygiene.

The use of improper wastewater disposal systems leads to high levels of faecal contamination of land and water resources. Severe environmental and health problems can be caused by lack of good hygiene practices.

## The Sanitation Park

The ‘Sanitation Park’ Project was developed to help address local sanitation and hygiene issues. The ‘Sanitation Park’ is no ordinary park, but houses a demonstration of sanitation technologies. The Park is located at the Tamavua Campus of the Fiji School of Medicine in Suva, Fiji.

The Park is designed to support communities in Fiji and the Pacific region to recognise and solve their sanitation problems by examining and selecting the most appropriate sanitation system. It hosts a range of affordable on-site wastewater treatment options, beginning with low-technology facilities to progressively higher-level treatment systems. It also provides information on initial costs, construction skills and long-term operational and maintenance costs.

The Park provides an opportunity for interested community members, students and

Crennan, L. 2004. Tapping Connections between People and Water. SOPAC Miscellaneous Report 577.

Depledge, D. 1997. Sanitation for Small Islands: Guidelines for selection and development. SOPAC Miscellaneous Report 250. SOPAC Secretariat. 28 pages.

Dillon, P. 1997. Groundwater pollution by sanitation on tropical islands. International Hydrological Programme. Technical Reports in Hydrology. No. 6. UNESCO.

Pickford, J. 1995. Low-cost sanitation – a survey of practical experience. ITDG Publishing, United Kingdom.

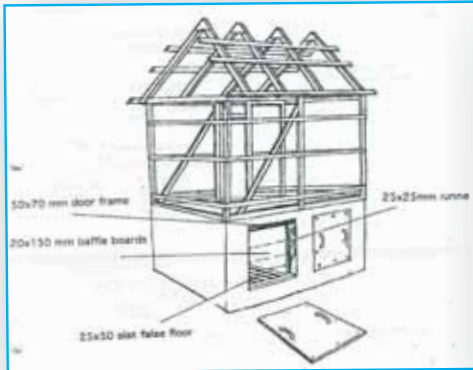
United Nations Environment Programme (UNEP). 2002. A directory of environmentally sound technologies for the integrated management of solid, liquid and hazardous waste for Small Island Developing States (SIDS) in the Pacific. OPUS International with SPREP and SOPAC.

Water, Sanitation and Hygiene website of Community Lifelines Programme at SOPAC: <http://www.sopac.org/tiki/tiki-index.php?page=WASH+.Programme>

WEDC Loughborough University. 2000. Low Cost Sanitation. WEDC Publications.



**(5) Waterless toilets or 'dry sanitation' systems** – do not use water to treat or transport human excreta. The most common type of waterless toilet is often referred to as a 'composting toilet' (CT). The composting toilet situated at the Sanitation Park is of a type called Fixed Chamber Batch which means the two containers are permanently in place and the seat is moved when it is time to change chambers.



Structure of composting toilet, showing the timber frame, the inside of the composting chamber and access door (5)

Composting chamber at Sanitation Park (5)

## Sanitation Park Visit

The Sanitation Park is open to the general public. If you would like to visit the Sanitation Park as an individual or as a group you can contact the School of Public Health and Primary Care at the Fiji School of Medicine to make an appointment. Contact details are provided on the back page.

## Additional Information

The following documents are available at the SOPAC Secretariat:

Bower, R., L. Crennan and, A. Navatoga. 2005. The Sanitation Park Project: A regional initiative to increase participatory approaches in the sanitation sector. SOPAC Technical Report 386.

Crennan, L. 2001. Integration of social and technical science in groundwater in groundwater monitoring and management – Groundwater pollution study on Lifuka, Ha'apai, Tonga. Recharge study on Bonriki, South Tarawa, Kiribati. International Hydrological Programme. IHP Humid Tropics Programme. Technical Documents in Hydrology. No. 43. UNESCO.

community health workers to examine how each of the wastewater treatment systems work to treat excreta and protect human health from diseases. Regional students from the Fiji School of Medicine are able to take the information on available technologies back to their countries and create further awareness in Pacific island communities.

The official opening of the Park took place on the 18<sup>th</sup> of November 2004, the result of several years work by the project team whose members were drawn from the World Health Organization (WHO), Fiji Ministry of Health (MoH), Fiji School of Medicine (FSchM) and the South Pacific Applied Geoscience Commission (SOPAC). Funding for the project was provided by WHO and the New Zealand Agency for International Development (NZAID).



Opening of the Sanitation Park

The Project also worked in three Fijian communities, Keiyasi (Sigatoka), Balevuto (Ba) and Nadelei (Tavua) providing hands-on construction training and raising awareness of health issues.

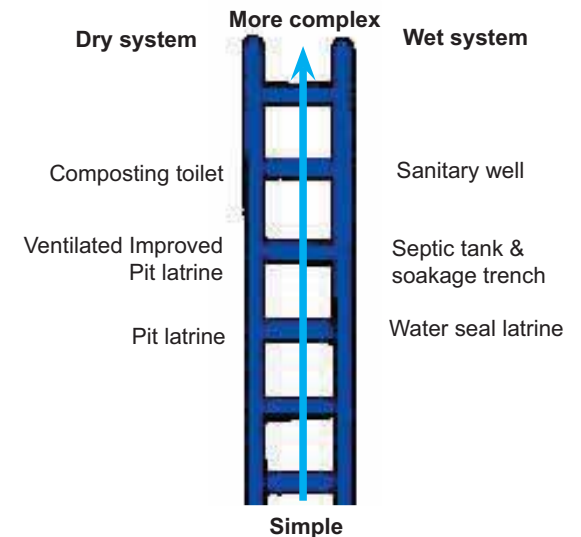
## Sanitation Systems and their Features

The available sanitation systems in the Sanitation Park include:

- (1) a sanitary well
- (2) a water seal latrine
- (3) a septic tank and soakage trench
- (4) a Ventilated Improved Pit (VIP) latrine
- (5) a waterless or Composting Toilet (CT).

A brief description and a picture or diagram of each system is provided on the following pages.

Simple to complex wastewater treatment systems in a "sanitation ladder"





Sanitary well (1)

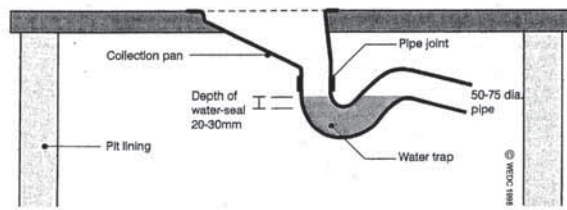


Septic tank and soakage trench with viewing portal (3)

(1) The **sanitary well** – is a water source constructed with careful selection of the site to ensure that it is protected from contamination. Wells should be located on higher ground and at least 30m from pit latrines. They should be protected from surface runoff water, animals and preferably fenced. Wells should be covered with a lid to prevent insects, dust and rubbish getting in. All these measures will ensure that the water remains safe to drink.

(2) The **water seal (or pour-flush) latrine** – is a latrine with a collection pan fitted into the cover slab. The seal is more suitable in areas where the water supply is readily available. The collection pan is connected to a water trap, which is filled with about 0.5 litres of water. Water is thrown into the pan to flush waste products through the water trap into the pit. The seal prevents flies and mosquitoes from gaining entry to and from the excreta.

(3) The **septic tank** – is a watertight chamber generally made of concrete or fibreglass and is commonly used for the treatment of wastewater from individual households. The soakage trench is a drainage system, which allows effluent from the septic tank to disperse into the soil. A septic tank holds wastewater in the tank, which allows



Cross-section of a typical water-seal latrine (2)

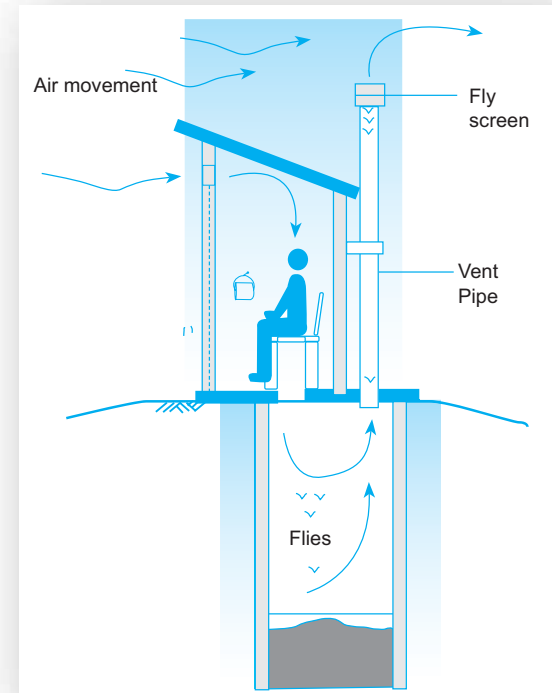


Diagram of a ventilated improved pit latrine (4)

the solids to settle and scum to rise to the top. Incoming water should be held in the tank for at least 24 hours in order to improve settling. Up to 50% of the solids will decompose into liquids and gases. The remaining solids accumulate in the tank and are pumped out periodically.

(4) The **Ventilated Improved Pit (VIP) latrine** – was developed to control flies and odours in pit latrines. The VIP latrine differs from an ordinary pit latrine because it has a ventilation pipe and is built to exclude most light and allow air to flow through. Odours are controlled by the flow of air through the pit and out the ventilation pipe. The toilet lid needs to be kept open so that airflow is continuous. Flies that enter the pit are attracted to the light at the top of the ventilation pipe. The pipe is covered with fly screen, trapping flies until they die. The VIP latrine is most efficient if it is constructed with the door or opening, facing into the prevailing wind and with the ventilation pipe at least 0.5 m higher than any surrounding buildings.