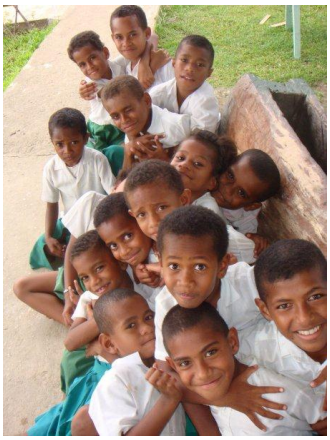
MINISTRY OF EDUCATION,

NATIONAL HERITAGE, CULTURE & ARTS





MINIMUM STANDARDS ON WATER, SANITATION AND HYGIENE (WASH) IN SCHOOLS INFRASTRUCTURE

Prepared by: **Eng. KENTE Liliane Sandra**

September 2012

Table of Contents

ACKNOWLEDGMENT

The Ministry of Education, National Heritage, Culture and Arts would like to thanks all stakeholders who participated in the elaboration of the Minimum standards on Water, Sanitation and Hygiene (WASH) in schools infrastructure for Fiji.

It acknowledges the support, co-operation and advice of these individuals and organizations:

Lead Coordination: Alumeci Tuisawau/Saimoni Waibuta, MoE Director of CDU and Director of AMU respectively.

Lead Partner; Simon Jan Molendijk UNICEF Senior Education specialist
Lead Author; Eng. Liliane Kente, WASH consultant

Contribution to the text; Gabriel Rozalio, Joesapha , Iosefo Volau, Tikiko Lewis, Jokapeci Kurabui, David Week, Jeffrey Ing.

Expert inputs from; Timothy Gill, Makelesi Batimala, Raj, Vijendra Naicker , Paul Briones,-erasito Alvin Prasad, Avimeleki Qio Una Bera, Rosa, Mohammed Sahadat, Muhammed Shamim Ali

Support from the following agencies/units;
Ministry of Education: Curriculum Development unit, Technical Vocational Education and Technology, Asset Monitoring Unit, the Principal Education Officer Primary Education, the Principal Education Officer Nadroga/Navosa Education District, Managements of; Daku Village School, Waicoba, Naqalimare and Ucunivatu District Schools, The Hilton and Suva Special Schools, The Fiji Muslim League, Ahmadiyya Muslim, Access to Quality Education Programme (AQEP), Ministry of Health(Environmental Health Unit), UNICEF, Live and Learn and Erasito Engineering Company.

National verification and feedback a national consultation was carried out where representatives such as schools managers, head teachers, education officers, religious, civil engineers, consulting firms, NGO's representatives were invited to verify the document and add comments. 37 participants were present during the national conference and feedback from this conference has been incorporated into this document.

ACRONYMS AND ABBREVIATIONS

EcoSan:	Ecological Sanitation
FNDWS:	Fiji National Drinking Water Standards
MoE:	Ministry of Education
NGO:	Non Governmental Organization
NTU:	Nephelometric Turbidity Units
TCU:	True Color Unit
UNICEF:	United Nation Children's Fund
VIP:	Ventilated Improved Pit Latrine
WASH:	Water, Sanitation and Hygiene
WHO:	World Health Organization
WC:	Water Closet
WAF:	Water Authority of Fiji

DEFINITIONS

E-coli : **E. coli**: Escherichia coli is a Gram-negative, rod-shaped bacterium that is commonly found in the lower intestine of warm-blooded organisms (endotherms). When found in water supplies, it is an indicator of pathogenic bacteria.

Feacal coliform: Subgroup of coliform bacteria associated with faecal contamination from warm-blooded animals. Can ferment lactose at 44.5 ^{o}C during analysis. Also known as thermo tolerant coliforms.

NTU: A measure of the turbidity (cloudiness) of water as measured by a nephelometer.

Pathogens: microorganisms such as bacteria, protozoa, algae, helminths and viruses that can cause illness.

Suspended solid particles: Suspended solids refers to small solid particles which remain in suspension in water as a colloid or due to the motion of the water. It is used as one indicator of water quality.

TCU: - Measure of color of filtered water sample that could come from iron or dissolved organic substances, also quoted in Hazen Unit (HU). In unfiltered sample, it is called "Apparent color".

Turbidity: Characteristics of cloudiness of water. The amount of solid particles that are suspended in water that can cause scattering of light. Low turbidity is essential for effective disinfection.

Water related diseases: these are diseases which are caused by pathogenic microorganisms that most commonly are transmitted in contaminated water. Infection can be directly transmitted for example during bathing, washing, drinking, in the preparation of food, or the consumption of food or it can be transmitted by a vector such as mosquitoes.

Water management plan: a plan which clearly indicate how water will be managed in a certain time within a certain region or project.

EXECUTIVE SUMMARY

The mission of Ministry of Education is to provide all children the necessary skills and values to realize their full potential, appreciate dully their inheritance, take pride in the national and cultural identity and contribute fully to the national development.

To achieve this, the Ministry of Education(MoE) is continuously working together will all its partners to improve access to quality education and increase the quality of educational facilities including water, sanitation and hygiene facilities ; as the physical environment in which learning take place has a large impact on the outcomes of education not only for children but also for their families.

Thus MoE has commissioned the development of Minimum Water, Sanitation and Hygiene Standards in Schools Infrastructure.

This document will be a national recognized document that will serve as standards to all private and public schools in the Fiji Islands.

These standards have been developed through a comprehensive consultative process, where all partners and stakeholders in the national education system has been consulted.

Their main objectives are to :

- Comply with the existing policies and legislation,
- Assess current situation of schools, plan and/or carry out required improvement,
- Ensure that the construction of new schools is of acceptable quality,
- Be used while preparing and implementing comprehensive and realistic action plans so that acceptable conditions are maintained.

In total fourteen standards have been developed where standard one to standard five specify water requirements in schools, standard six to standard twelve specify sanitation requirements including environmental and waste disposal while standard thirteen to standard fourteen concern hygiene promotion at schools.

1. INTRODUCTION

1.1 Background

Adequate provision of water supply, sanitation, hygiene and waste management in schools has a number of positive effects. The disease burden among children, staff and their families is reduced; healthy children in healthy environments learn more effectively; there can be greater gender equity in access to education and meeting hygiene-related needs; educational opportunities are created to promote safe environments at home and in the community; and children can learn and practice life-long positive hygiene behaviours[1].

In that regard, the Ministry of Education (MoE) has developed WASH disadvantaged School Index which clearly shows status of each school in regard to WASH facilities and which is very useful when there is an opportunity for upgrade.

However, besides all in situ information, there are no clear standards to be followed while upgrading the schools or constructing new ones; thus the necessity of developing minimum Standards of WASH in Schools Infrastructure.

1.2 Purpose and Scope of the standards

Minimum WASH in Schools infrastructure standards recommend a basis for creating the minimum conditions required for providing schooling in a healthy environment for schoolchildren[2], teachers and other staff. Specifically, these standards will help schools to :

- Comply with the existing policy and regulatory framework;
- Assess their current situation, plan and carry out required improvement;
- Ensure that the construction of new schools is of acceptable quality; and
- Prepare and implement comprehensive and realistic action plans so that acceptable conditions are maintained.

These standards deal specifically with water supply (water quality, quantity and access), hygiene promotion, sanitation, and waste disposal.

[1] Snel et al., eds. 2004

[2] The word 'schoolchildren' is used in this document to include children of all ages in various school or pre-school settings, and includes children who may also be referred to as 'pupils' or 'students' WHO

They are designed in a way that is simple and affordable measures will be used to achieve significant improvement to health and hygiene at school level.

The word 'school' is used in this document to include kindergarten and primary schools, boarding and day schools, rural and urban schools and public and private schools. The common feature of all schools concerned by this document is that they suffer from a severe lack of resources.

1.3 National Policy, Legal and regulatory Framework

Several act and decree are reflecting the provision of safe and sufficient water, adequate sanitation and promotion of hygiene for Fijians.

1.3.1 Education Act

Education Act is a national legislation which contains all information in regard to education system in Fiji. This include central administration, education forum, curriculum and examination, religious instruction, management of schools, controls of schools, fees, medical inspection, compulsory education, and regulation.

In the management of school which also contain the requirement to open a school, the act has guidelines to be followed in regard to infrastructures, WASH included.

1.3.2 Public Health Act

The public health act contains a series of legislative requirements governing a wide range of health related issues. These range from general powers to respond to public health risks that may emerge from time to time, through to specific provisions dealing with identified risks associated with specific industries or sectors.

Specifically the Public Health Act has following guidelines in relation to WASH:

- In regards to buildings either existing or new, public or private; it is a requirement to have privies, dustbins, main drains which are well constructed and well maintained; in addition cesspit or any other related receptacle must be in good working conditions.(Act 30 to 39)
- In regard to water supply, each building should be connected to a water supply system which is providing water in a sufficient quantity and adequate quality.(Act 120 to 127)
- In addition the current Public Health Act is being reviewed and has included school sanitation as a part of the Act; this part emphases the need of adequate water supply schemes, sewage and safe solid waste disposal at school level.

1.3.3 Environmental Management Act

The Fiji Environmental Management act is a national instrument which has a main objective to provides guidelines in the protection of natural resources its control and management of y related development as well as waste management and pollution control.

Part five of this act is dedicate to waste management and pollution control; and there the act has specified the Waste and Pollution Control (WPC) administration as well as how permit to discharge waste or pollutants are administrated and related fine for not complying with this act.

1.3.4 Water Supply Act

The water supply Act is a national instrument which is giving guidelines in regards to water supply in Fiji. Specifically the Act is clear on commissioner's powers either to supply water in public or private, installation of meters, price settings and money recovery. It also specifies catchment area delimitation, connection and disconnection criteria, payment fees, and penalties related to non-obeying this act.

1.3.5 National Building Code

The National Building Code is a national instrument which has set out requirement to be followed in construction of all buildings at national level.

In its section DF, the Code is clear on specific requirement in regard to health and amenity in buildings.

Piping specification either in water or waste water are given, types of toilets to be installed as well as specification on rainwater storage (DF5, DF6 and DF7)

1.3.6 Fiji National Drinking Water Quality Standards

The Fiji National Drinking Water Quality Standard (FNDWS) is a set of minimum water quality requirement for drinking water purposes.

It is applicable for all sources of drinking water in both urban and rural areas, public or private water supply regardless of its source including groundwater, surface water, rainwater, desalinated water, packaged/bottled water and ice intended for human consumption.

Priority parameters to be considered in small water supplies and their maximum values which are acceptable were adopted specifically for schools with non piped water supply systems.

1.3.7 Education regulation (Establishment and registration of a school)

Education regulation provides all requirements for a school to be registered. It includes general requirement to be followed, specific requirement for kindergarten, primary, middle and secondary schools. Specific requirement in regards to WASH infrastructure are also included in this regulation.

1.3.8 Policy in Occupational Health and Safety in Schools

The objective of the occupational health and safety in schools policy is to provide clear guidelines and responsibilities of schools' authorities in regard to safety measures and sound practices in the schools for both children and staffs, to ensure that schools in Fiji become safe as well as healthy environments for teaching learning.

Under section 5 on procedures, the policy recommend each school to formulate its own OHS policy and conducting OHS training for its staffs and students to be familiar with the school OHS policy. Under the same section the policy recommend each school to develop its own Safety Procedures and Emergency evacuation plan.

1.4 Targeted Audience

These standards have been written to harmonise our understanding of what a minimum WASH in school infrastructure is. The targeted groups include; Ministry staffs, District staffs, International agencies, NGOs, School community and managers, Private sector, building professionals and contractors. This document is to be referenced by all who are involved in the planning, monitoring, designing, procuring, constructing and rehabilitating WASH in school infrastructures.

2. NECESSITY OF WATER, SANITATION AND HYGIENE IN SCHOOLS

2.1 Disease prevention

Water-, sanitation- and hygiene-related diseases are a huge burden all over the world; Fiji Included; It is estimated that 88%[3] and 18%[4] of diarrhoeal disease is caused by unsafe water supply, and inadequate sanitation and hygiene worldwide and Fiji respectively.

It is common for schools, particularly those in rural/remote areas, to lack drinking-water or insufficient and sanitation facilities inadequate or not working properly.

Schools with poor water, sanitation and hygiene conditions, and intense levels of person-to-person contact, are high-risk environments for children and staffs, and exacerbate children's particular susceptibility to environmental health hazards.

These standards are designed to help strengthen water supply, sanitation and hygiene measures in particular, while recognising the importance of, and links with, other areas of environmental health, such as air quality and physical safety.

2.2 Learning

Children's ability to learn may be affected in several ways. Firstly, worms infections, affecting hundreds of school-age children, can impair children's physical development and learning ability through pain and discomfort, competition for nutrients, and damage to tissues and organs. Long-term exposure to chemical contaminants in water (e.g. lead) may impair learning ability. Diarrhoeal diseases, malaria and worms infections force many schoolchildren to be absent from school. Poor environmental conditions in the classroom can also make both teaching and learning very difficult. Teachers' impaired performance and absence due to disease has a direct impact on learning, and their work is made harder by the learning difficulties faced by the schoolchildren.

2.3 Enrolment rate

With adequate Water, Sanitation and Hygiene facilities, the enrolment rate in schools will also be increased, as condition at schools will be excellent and parents will not fear sending their children. It has been noticed several cases of drop out of children due to poor WASH facilities where risks of water related diseases is high.

[3] World Health organisation report (WHO 2004c)

[4] Global Health Observatory,Fiji (WHO), 2009

2.4 Gender

Girls and boys are likely to be affected in different ways by inadequate water, sanitation and hygiene conditions in schools, and this may contribute to unequal learning opportunities. For example, lack of adequate, separate and secure toilets and washing facilities may discourage parents from sending girls to school, and lack of adequate facilities for menstrual hygiene can contribute to girls missing days at school or dropping out altogether at puberty.

2.5 The wider community

Children who have adequate water, sanitation and hygiene conditions at school are more able to integrate hygiene education into their daily lives, and can be effective agents for change in their families and the wider community. Conversely, communities in which schoolchildren are exposed to disease risk because of inadequate water supply, sanitation and hygiene at school are themselves more at risk. Families bear the burden of their children's illness due to bad conditions at school.

2.6 Life-long skills

The hygiene behaviours that children learn at school, made possible through a combination of hygiene education and suitable water and sanitation facilities, are skills that they are likely to maintain as adults and pass on to their own children.

3. STANDARDS

3.1 Water

Water in Fiji can be collected from many sources i.e. water supplied from Water Authority of Fiji (WAF) , wells, springs, rain water, open source such as river, streams and oceans.

Its availability in quantity and quality should be of high priority for any schools either existing or new.

Specifically, for rainwater as main source, especially in area where water is not readily available, a water management plan should be elaborated and implemented, as the annual rainfall cycle varies throughout and within the country.

3.1.1 Potable Water

A school must offer adequate access to safe drinking water. A minimum of one safe drinking water point must be installed at each school together with a hygienic way to drink the water i.e. availability of water containers and/or cups.

Standard 1: Potable Water Quantity

The amount of potable water required for a pupil to remain healthy will depend upon many factors; size of child, climate, cultural and religious practices and activities carried out at school. The table below gives guidance on the minimum amount of water which should be available per pupil and per teacher and other staff members.

Pupil occupancy at school	Quantity of drinking water (liters/day)
Full day time pupil	1 liter/day
Boarding pupil	2 liters/day
Teacher/other staff member	4 liters/day

Schools may opt to provide water to children or to ask children to bring potable water from their home.

Standard 2: Potable Water Quality

Safe drinking water should be odor less ,color less, tasteless and free from bacteria. See annex 1 for specific quality requirements.

Water quality checking is mandatory for any suspected case of contamination.

Schools situated in areas with risks of contamination should perform a water quality test at least once a year. These include schools in mining areas, intensive agriculture areas, floods areas, etc…

3.1.2 Non potable water

A school must offer adequate access to water for non drinking purposes; these include hand washing, body washing, cleaning of schools, compounds, etc….

Standard 3: Non Potable Water Quantity

The amount water required for a pupil to retain hygienic level will depend upon many factors such as size of child, climate, cultural and religious washing and cleaning practices carried out at school.

The table below gives guidance on the minimum amount of non-potable water which should be available per pupil per day:

Pupil occupancy at school	Quantity of non potable water (liter/pupil/day)
Full time pupil in area where water is not readily available/not available	5 liters/day
Full time pupil in area where water are available	10 liters/day
Boarding pupil	20 liters/day

Standard 4: Non Potable Water Quality

Although non potable water is not for drinking purposes, its quality should be of acceptable level: it has to be colorless, odorless, exempt from debris (stones, sand, leaves, algae, etc…) exempt from suspended solids particles, free from arsenic and other hard metals; See Annex 1 for more specific water quality requirements.

It must have a sign which is fixed to the specific tank/point of distribution which clearly inform the users of its non portability.

Students should be educated on the purpose of the non potable water (washing hands and body, cleaning, etc…) and sensitized on not drinking it because of the water related diseases which may arise from it.

Water quality checking is mandatory for any suspected case of contamination;

Schools located in areas with risk of contamination, i.e. schools located in area with intensive agriculture, mining areas, floods areas, should perform water quality test at least once a year.

3.1.3 Water supply systems

Standard 5:

- In addition to the main water supply system, each school should have a reservoir water tank with a capacity of 5,000 liters;
- Schools designated as evacuation centers in case of emergency, in addition to the main water supply system, need at least 2 reservoir water tank of 5,000 liters capacity each.
- In geographical areas where there are no water source available, each school should at least have water reservoir tank of 5,000 liters each.

Rainwater harvest systems in all case are encouraged because :

- Fiji has an adequate annual rainfall thus water available the whole year;
- Systems are cheaper in terms of investment cost, and
- More sustainable.

3.2 Sanitation

The link between poor sanitation and poor health is evident. Also the lack of adequate sanitation facilities is a major reason why many children fail to attend school. The lack of facilities affects the performance and achievement of all pupils, and is certainly detrimental to the working conditions of teachers.

Sanitation is an essential aspect of promoting good practice and schools have a duty to promote its implementation in order to create friendly environment for the children as well as for teachers.

3.2.1 Sanitation facilities quantity

Standard 6: Toilets

Appropriate quantity of sanitation facilities/or toilets must be provided according to the ratios in the table below:

Sanitary facility ratio
Girls
One closet for every 20 girls or part of 20 up to 200 girls, and an additional closet for every 25 girls or part of 25 girls over that number up to 300 girls, and one additional closet for every 33 girls or part of 33 girls over 300 girls.
1 hand wash point with tap and soap per 50 girls.
Boys
One closet for every 33 boys or part of 33 boys up to 200 boys, and an additional closet for every 50 boys or part of 50 boys over the number of 200 boys.
1 urinal per 50 boys.
1 hand wash point with tap and soap per 50 boys.
Staffs
Separate closets for each sex. One closet for every 20 persons or part of 20 persons of either sex.
1 hand wash point with tap and soap per 20 staffs
Minimum 2 cubicles 1 for Women and 1 for Men
Children with special needs (in Wheelchairs)
For newly constructed toilet facilities, 1 closet for children with special needs (in wheelchairs)

Following are minimum requirement to be met in addition of sanitation facilities:

a. Girls and boys must have equal access to adequate sanitation facilities in schools, which ensure privacy for all.

b. Girls and Boys sanitation facilities must be separate with their own wash basins and taps. The separation must have adequate visual, noise and odor separation.

c. Specifically for Class 1, Class 2 and Class 3, the height of flushing toilet should be maximum 295mm all inclusive (WC and toilet seats) and the height for wash basin be maximum 610 mm all inclusive (wash basin, support and accessories)[5]

d. Staff toilets must have separate women and men cubicle with adequate privacy.

e. Cubicle doors are open inwards or outwards; this is to facilitate easy opening either inside or outside.

f. Each toilet door should have a hangar for children to hang their stuffs easily.

g. The above guidelines are also applicable for boarding schools.

N.B:

1. When intended for use by Muslims the compartment should not face in the direction of Mecca, and a low level cold water tap should be provided in addition to any flushing water. In addition, the school must also provide space for ablution, for their usual prayers. Urinals should not be installed for them.

2. Schools where children with special needs (in wheelchairs) are enrolled, must provide at least one accessible toilet and hygiene facilities for them. See annex 3

3. Toilets types:

- In geographical areas where there is no water source, Ventilated Improved Pit (VIP) Latrine can be used; See Annex 4

- In geographical areas where water is not enough and/or not available the whole year, water seal toilet can be used; See Annex 5

- In geographical areas where water is available throughout the year, flush toilet should be used. See annex 6

- Each cubicle should at least have minimum of dimension as 1.5m x1.2m of surface area and have a door of 1.9m to 0.45m of dimensions preferably. See annex 2

4. Special schools for children with disabilities should have:

- One cubicle for every 15 children and provision of one toilet for wheelchair for each block of toilet and per sex.

[5] Based on Kohler and Lewis, Mechanical ENgineers

Standard 7:

A personal hygiene compartment where girls are able to wash during menstruations must be offered.

Thus each toilet block should have at least one room for girls to take a shower and one room for boys to take a shower with all necessities.

Standard 8:

The provision of sanitary towels, hygienic pads and disposal facilities should be made available at schools for girls in menstruation. Hygienic and safe disposal practice must be practiced.

One sanitary bin per girl's toilet is a requirement and in addition, one sanitary bin per block of toilets.

3.2.2 Sanitation Facilities Quality

Standard 9:

Sanitation facilities must be of appropriate quality:

a. All structures must be made with highest materials to avoid environmental risks such as unstable floors or full pits; and provision of cyclones protection measures; and must be compliant to the National Building Code.

b. All structures and surfaces must be kept neat, tidy and hygienic.

c. All sanitation facilities must have adequate(natural or artificial) light.

d. All sanitation facilities must have adequate ventilation.

e. Each school must have following sanitary materials to ensure an environmental friendly school:

- General cleaning equipments such brooms, scrappers, etc…
- General cleaning products, soap, detergents, etc…
- Hand washing soaps,
- Girls sanitary towels, toilet papers and
- Girls sanitary bin in each cubicle

f. Appropriate construction :

- Use smooth durable floor surface which can be cleaned easily.
- Consider water and liquid run off directions to avoid pools of stagnant water.
- Consider lower height handles for smaller children's doors (at 45cm)
- Consider smaller holes/height for smaller children's toilets.

3.2.3 Sanitation facilities usage

Standard 10

The sanitation facilities must be appropriate for effective usage. The facilities must be located in the right place and designed to account for local customs (children) and cultural sensitivities.

- Every WC facility must be easily supervised from the classrooms and accessible from out of doors; they should be located between 0m to 20m from classrooms at least 30m from water sources (rivers, wells, groundwater, etc…)
- A wall should be situated in front of each toilet entrance to foster privacy.
- Toilet should not be constructed in low lying areas and drains or steep slopes.

3.2.4 Environmental and Waste management

All types of wastes around schools must be well managed for a safe school environment.

Standard 11

School need to ensure separation of biodegradable and non biodegradable waste with clearly marked bins (one for biodegradable and another for non biodegradable waste) and school should promote composting where applicable or/and incinerators to bury non biodegradable waste.[6]

- ***Composting***

Where practical, at least one composting facility with two compartments to gather biodegradable material should be available.

Composting is the process of decomposing organic material into soil which can be used for enhancing the growths of plants in the school garden.

Materials such as food waste, hay, grass, wood chips, sawdust, weeds, other garden wastes can be put into the compost reducing waste sent to landfills. Additionally, pupils can learn firsthand how organic cycle works. Additionally, the facility can be incorporated into the science curriculum.

The compost should be located at convenient distance from the main source and final use. Example; located between kitchen and garden and away from main pathways.

There are two type of composting: below ground and above ground:

Below ground: Two pits are needed so that each can be aerated and used alternatively. Each pit has a total depth of 1m deep according to each schools needs.

Pits for composting must be built on permeable soil in order to allow surface water to seep through easily. If this is not taken into account, ponds of water mixed with compost materials might flood the nearby surrounding after heavy rain showers.

Above ground: Well ventilated containers, and make sure that the compost is always moist.

- ***Incinerators***

An incinerator can be installed in the school grounds where high risk contaminants such as used sanitary towels must be disposed safely.

[6] Incinerators installations must be approved by local authorities.

Its location in the school yard should allow it to be operated without interfering with the normal course of classes due to the smoke/gases it might produce.

Despite orientating it with due consideration to prevailing winds, its chimney should be at a height above the roof of the closest classes.

Alternatively, consider an open pit which should be filled up after use.

N.B: its installation should be authorized by the local authorities.

Standard 12

School environment should be free from stagnant water and schools must have proper drainage system.

3.3Hygiene promotion

Correct use and maintenance of water and sanitation facilities is ensured through sustained hygiene promotion. Water and sanitation facilities are used as resources for hygiene education.

Standard 13:

Hygiene education should be provided for school children as part of the school curriculum;

Hygiene education should include:

- Cleaning practice after toilet use;
- Hand washing practice before eating;
- Provision and use of hygienic items such as soap, toilets papers;
- Correct use of toilets;
- Cleaning school compound, classrooms, toilets, etc..
- Waste disposal.

Standard 14:

School should monitor hygiene behaviour of teachers and students as well as maintenance of school's classrooms, toilets and compounds.

Activities for hygiene promotion can include:

Cleaning toilets and collecting solid waste. These activities should be organised fairly and transparently (e.g. with a publicly-displayed rota that does not discriminate between boys and girls or children from particular social or ethnic groups), within the limits of children's age and ability. These activities should not be used as a punishment.

Children are heavily influenced by the example set by school staff, their teachers in particular, who should provide positive role models by consistently demonstrating appropriate hygiene behaviours.

Staff and children should not be expected to adopt behaviours that are inconvenient, uncomfortable or impractical. For example, staff not washing their hands after using toilets because there is no water;

Appropriate facilities should be provided for menstrual hygiene for female teachers and older girls. A shower should available in each girl's toilet block and a sanitary pad per cubicle and per block should also provided.

4. ASSESSMENT CHECKLIST

The following checklist provides a set of assessment questions for each of the standard presented in Section 3, to measure the extent to which standards are followed and identify areas for action for operation and maintenance or when there is a need of upgrade.

The qualitative and quantitative indicators under relevant standard can be used as references to help answer questions, and take action.

4.1 Water Quality

Standard number	New Design and construction	Operation and maintenance for existing building
Standard 2 & Standard 4	-Is water from a safe source (free of faecal contamination)? -Is water protected from contamination in the school?	-Is the safety of the water source monitored regularly? -Is the quality of the water supplied to the school monitored regularly? -Are water storage and use facilities at the school adequately maintained to avoid contaminating the water?
	-If necessary, can water be treated at the school?	-If water is treated at the school, is the treatment process operated effectively? -Are there sufficient supplies and adequately trained staff to carry out treatment? -Is the quality of the treated water monitored regularly?
	-Does the water supply meet FNDWS standards regarding chemical or bacteriological parameters?	-If necessary, are measures in place to avoid over-exposure of susceptible children to chemical contaminants?
	-Is water acceptable (smell, taste, appearance)?	-If the water is not acceptable to some or all of the children and staff, do they use a safe alternative supply of drinking-water? -How can it be made acceptable?
	-Is the school water supply designed and built so that low-quality water cannot enter the drinking-water supply and cannot be drunk?	-Are procedures for protecting drinking-water in the school followed consistently?

4.2 Water Quantity

Standard number	Design and construction	Operation and maintenance for existing building
Standard 1	Potable water availability (either from home or available at school)	How does children get water for drinking? Are cups available to the drinking water facilities
Standard 3	Does the water supply have the capacity required?	Is sufficient water available at all times for all needs? -Is the water supply operated and maintained to prevent wastage?
Standard 5	Is there a suitable alternative supply in case of need?	In Case of rainwater harvesting, is the catchment area cleaned?(gutters, cutting trees around, etc…)

4.3 Toilets

Standard number	Design and construction	Operation and maintenance for existing building
Standard 6	Are there sufficient toilets at the school? Separated blocks?	Are there sufficient toilets actually in use?
Standard 6	Are the toilets situated in the right place?	Are access paths kept in good condition?
Standard 6	Do the toilets provide privacy and security?	Are there working locks on the toilet doors and lighting?
Standard 6	Are the toilets appropriate to local culture and social conditions?	Are the toilets being used according to their design?
Standard 6	Are the toilets hygienic to use and easy to clean?	Is anal cleansing material available at all times? Are the toilets clean and without too much smell? Are flies and other insects controlled?
Standard 6	Are there hand washing facilities close by?	Is there water and soap available?
Standard 6	Is there are cleaning and maintenance plan?	Is there an effective cleaning and maintenance routine in operation?
Standard 6	Does the school have accessible toilet for children in wheelchairs?	Is toilet for children in wheelchairs easily accessible?
Standard 7	Are there showers rooms for both girls and boys?	What is the status of showers at schools? Do they have all necessities including soap?
Standard 8	Number of sanitary bin in girls toilets and in corridors of each blocks	How many sanitary bins available? What is their status? What is the plan in regard to sanitary pads? Are kids bringing it? or the does the school provide it?

4.4 Cleaning and Waste Disposal

Standard number	Design and construction	Operation and maintenance for existing building
Standard 9	Are floors smooth and easy to clean? Are buildings designed and built to avoid damp and moulds?	Are teaching areas regularly cleaned? Are teaching areas clean?
Standard 10		Are the school premises free of sharp objects and other physical hazards?
Standard 11	Are there adequate bins and other equipment for managing solid waste?	Is solid waste collected daily and safely disposed of? Is hazardous waste managed appropriately?
Standard 12	Is the wastewater drainage system correctly designed and built?	Is the wastewater drainage system correctly used and maintained?

4.5 Hygiene promotion

Standard number	Design and construction	Operation and maintenance
Standard 13	Is hygiene education part of the school curriculum? Are staffs trained in providing hygiene education?	Is hygiene education actually provided? Are hygiene-education methods used effectively?
Standard 13	Is responsibility for promoting hygiene in the school clearly defined and supported?	Is hygiene promoted systematically? Do schoolchildren participate actively in maintaining hygiene? Do staff provide positive role models for hygiene behaviours?
Standard 14	Are school facilities designed to be easy to use and maintain hygienically?	Are school facilities maintained so as to be easy to use hygienically?

5. REFERENCES

- Public Health Act, Government of Fiji, Suva, 1996
- Education Act, Government of Fiji, Suva, 1985
- Water Supply Act, Government of Fiji, Suva, 1985
- Environmental Management Act, Government of Fiji, Suva 2005
- Public Health (National Building Code),Ministry of Health, Suva, 2004
- Fiji National Drinking Water Standards, Ministry of Health, Suva, 2011
- Education (Establishment and registration of a school)regulation 1966, Ministry of Education, Suva, 1994
- Policy in Occupational Health and Safety in schools, Ministry of Education, Suva,2005
- A manual on school sanitation and hygiene, Technical guidelines series, UNICEF, New York, 1998
- A manual on Hygiene Promotion, Technical guidelines series, UNICEF, New York, 1999
- Water , Sanitation and Hygiene (WASH) in schools, a companion to the children friendly chools manual, New York UNICEF
- Adams, John et al, WASH Standards in Schools in Low-cost Settings, World Health Organisation (WHO),Geneva, 2009
- National School Sanitation Facilities Standards in the Gambia, Ministry of Education, Banjul, 2009
- Child Friendly Schools Infrastructure Standards and Guidelines" Primary and Tronc Commun schools, Rwanda Ministry of Education,2009
- Kohler and Lewis, Mechanical engineers, Technical notes for Kindergarden Schools, U.K 2012
- D.Duncan Mara et al, The Design of Ventilated Improved Pit Latrines, UNDP/World Bank, New York,1990
- The Technical Content for the Proposed Public Health Protection Decree-FIJI, Draft Report, Ministry of Health, 2012

- An inclusive Approach for School Sanitation and Hygiene Education, Technical Note Series, Ministry of Rural Development-India, New Delhi,2012

- Water, Sanitation and Hygiene (WASH) Assessment report for Two selected schools- Waicoba District School & Naqalimare District School Sigatoka, Live and Lean Environmental Education (LLEE) 2011

- Tai Ring The, WASH assessment report, European Commission, Suva,2010

6. ANNEXES

Annex 1: Tables of Water Quality parameters and their maximum values for compliance- National Drinking Water Quality Standards

Table 1: Minimum Priority parameters requirement in small water supplies [7]

Parameter[a]	**Maximum Value**
pH	6.5-8.5
Colour	5 TCU
Turbidity	5 NTU
Residual Chlorine[b]	0.2-0.5 mg/L
Total Dissolved Solids (TDS)	500 mg/L
Conductivity	1000 µS/cm
Thermotolerant Coliforms	0 per 100 mL
E. Coli	0 per 100 mL
Total coliforms	0 per 100 mL

[a] Additional parameters can be monitored but these are the minimum requirements.

[b] Only if chlorine is applied to the water system

[7] Adopted from the Fiji National Drinking Water Quality Standards

Table 2: Bacteriological quality for drinking water

Parameter	Maximum Value
Thermotolerant (Fecal) Coliforms	0 per 100 mL
E. coli	0 per 100 mL
Total coliforms	0 per 100 mL

Table 3 Chemical constituents of health significance in drinking water

Parameter	**Maximum Value[a]** **mg/L (ppm)**
Antimony	0.02
Arsenic	0.01
Barium	0.7
Boron	0.5
Cadmium	0.003
Chromium	0.05
Cyanide	0.07
Fluoride	1
Lead	0.01
Mercury	0.001
Molybdenum	0.07
Nickel	0.02
Nitrate as NO_3^-	50
Nitrite as NO_2^-	*3*
Selenium	0.01

Table 4: Organic constituents of health significance to drinking water

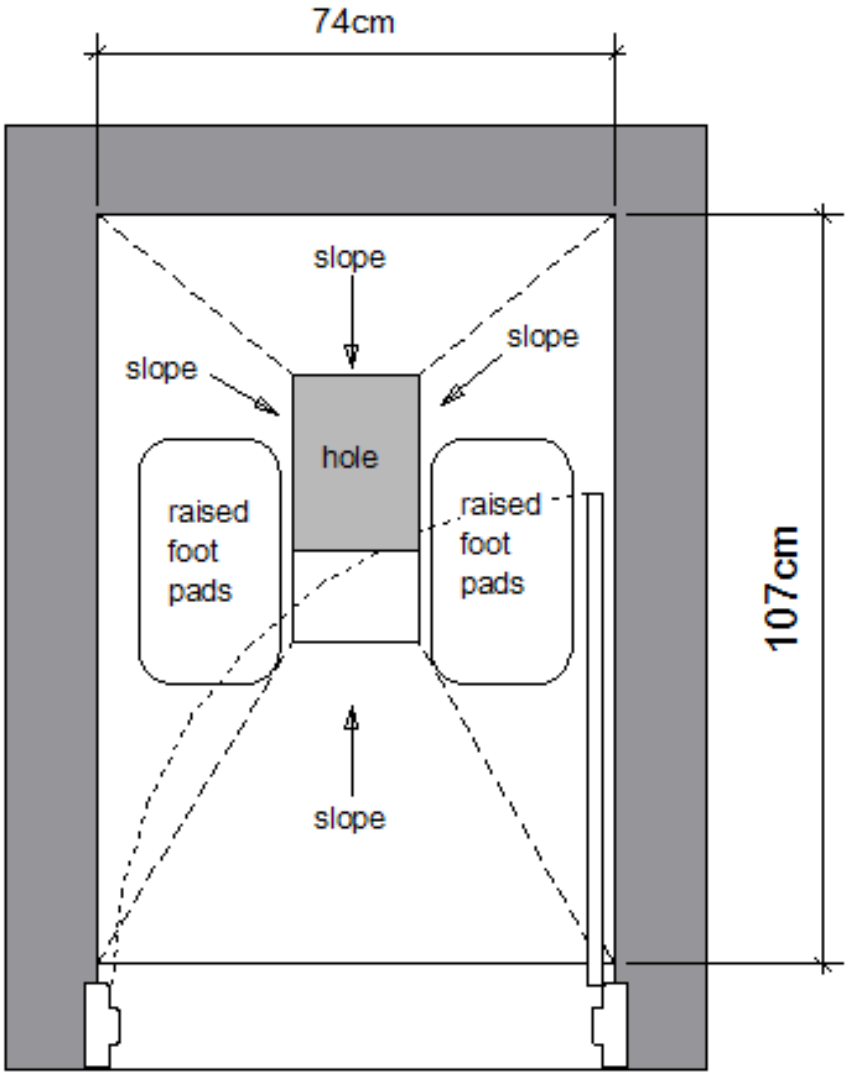
Parameter[a]	**Maximum Value**[b] **mg/L (ppm)**
Benzene	0.01
Disinfection by-product	
Total Trihalomethanes	0.25
Pesticides	
2,4, D[+]	0.03
Chlorpyrifos	0.03
Dicamba	0.1
Diuron	0.1
Glyphosate	0.5
MCPA[++]	0.002
Malathion	0.2
Paraquat	0.03

[a]Routine monitoring for organic constituents (Table 4) is not required unless there is a potential for contamination of water supplies.
[b]For very low concentration, laboratory results are reported in μg/L or ppb. Note the conversion: 1 mg/L (ppm) = 1000 μg/L (ppb)
[+] 2,4-dichlorophenoxyacetic acid
[++] 4-(2-Methyl-4-chlorophenoxy)acetic acid

Table 5: Physical and chemical quality: aesthetic quality

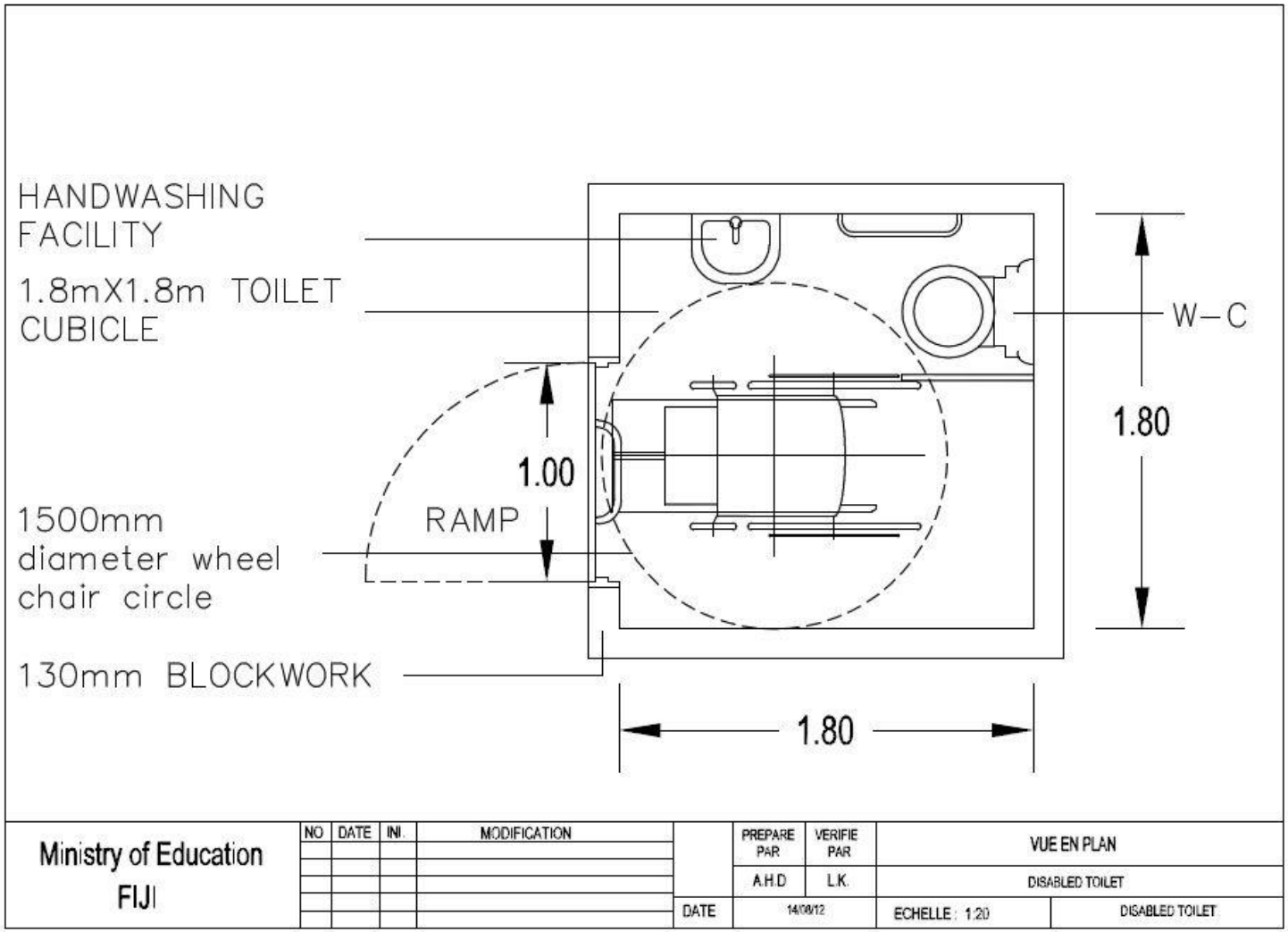
Parameter	Maximum Value
Odor	Acceptable
Taste	Acceptable
Color	5 TCU
Turbidity	5 NTU
Residual chlorine	0.2-0.5 mg/L
pH	6.5 – 8.5 (no unit)
Conductivity	1000 µS/cm
Aluminium	0.2 mg/L
Ammonia	1.5 mg/L
Chloride	250 mg/L
Copper	1.0 mg/L
Hardness	200 mg/L
Iron	0.3 mg/L
Manganese	0.1 mg/L
Sodium	200 mg/L
Sulphate	250 mg/L
Total dissolved solids	500 mg/L
Zinc	3 mg/L

Annex 2: SAMPLE OF CUBICLE TOILET



SAMPLE TOILET CUBICLE

Annex 3: ACCESSIBLE TOILET CUBICLE FOR CHILDREN WITH SPECIAL NEEDS (IN WHEELCHAIRS)



Wheelchair users must be able to approach, enter, transfer to, and use sanitary facilities provided within the school grounds.

a) Approach; the accessible toilet must have a wheelchair-accessible route to and from the toilet, if necessary with ramps.

b) Enter; the user must be able to be open and close the door independently. The door must be outward opening with a pull close handle to the inside of the door, allowing enough maneuvering space for the wheelchair user to turn.

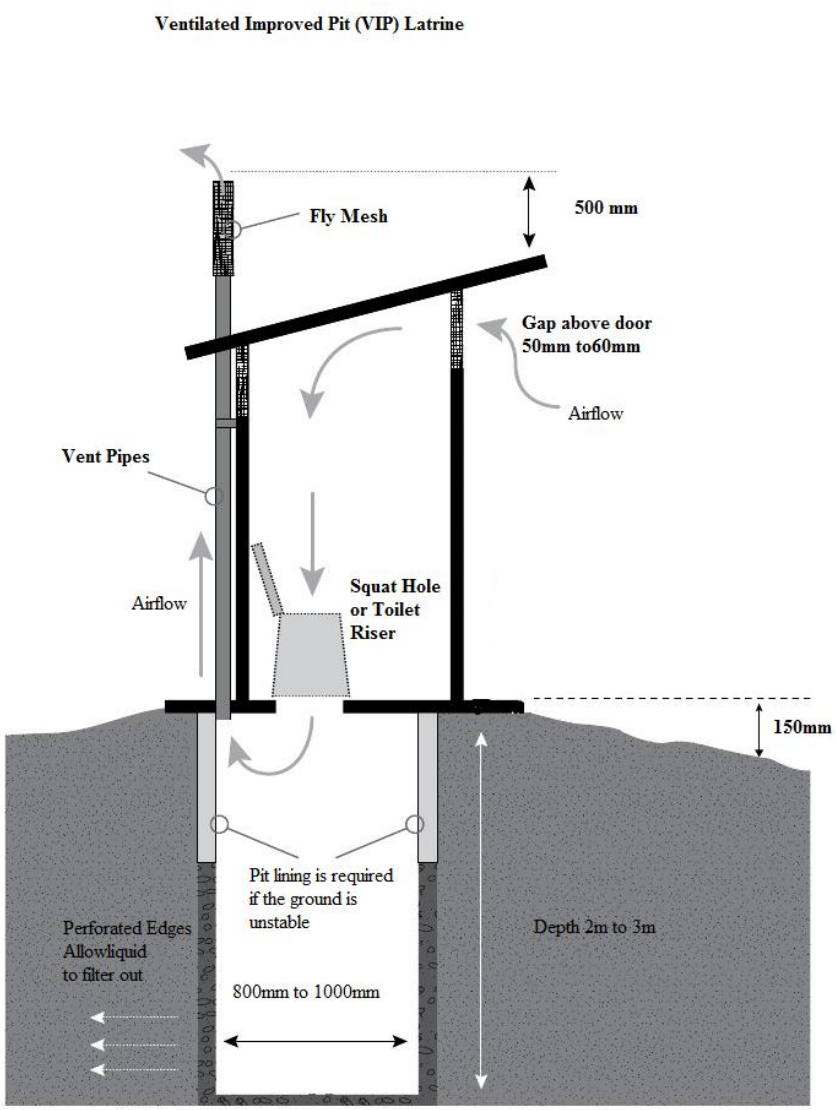
c) Transfer; The space provided for maneuvering should enable wheelchair users to adopt various transfer techniques that allow independent or assisted use. When transferring to and from their wheelchair people require horizontal support rails as to diagram.

d) WC pan: the WC seat height should be 480 mm above finished floor level. This may be achieved by :

   - a ceramic toilet pan (propriety)with push flush
   - a custom made seat according on sanitation strategy

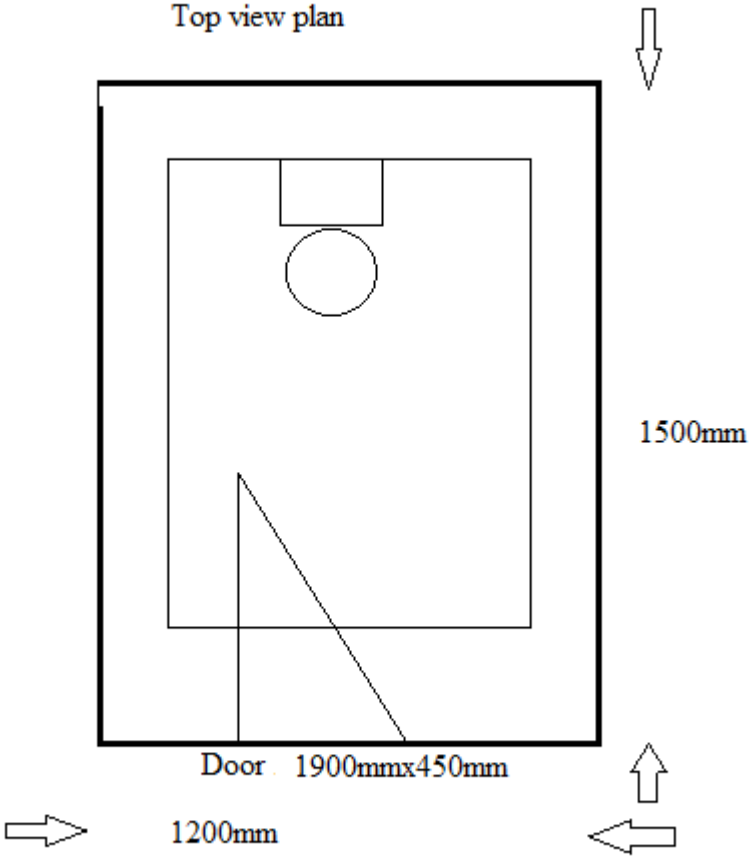
e) Hand wash basin: The user should be able to wash hands while seated on the WC.

Annex 4: VIP LATRINE TECHNICAL SPECIFICATION

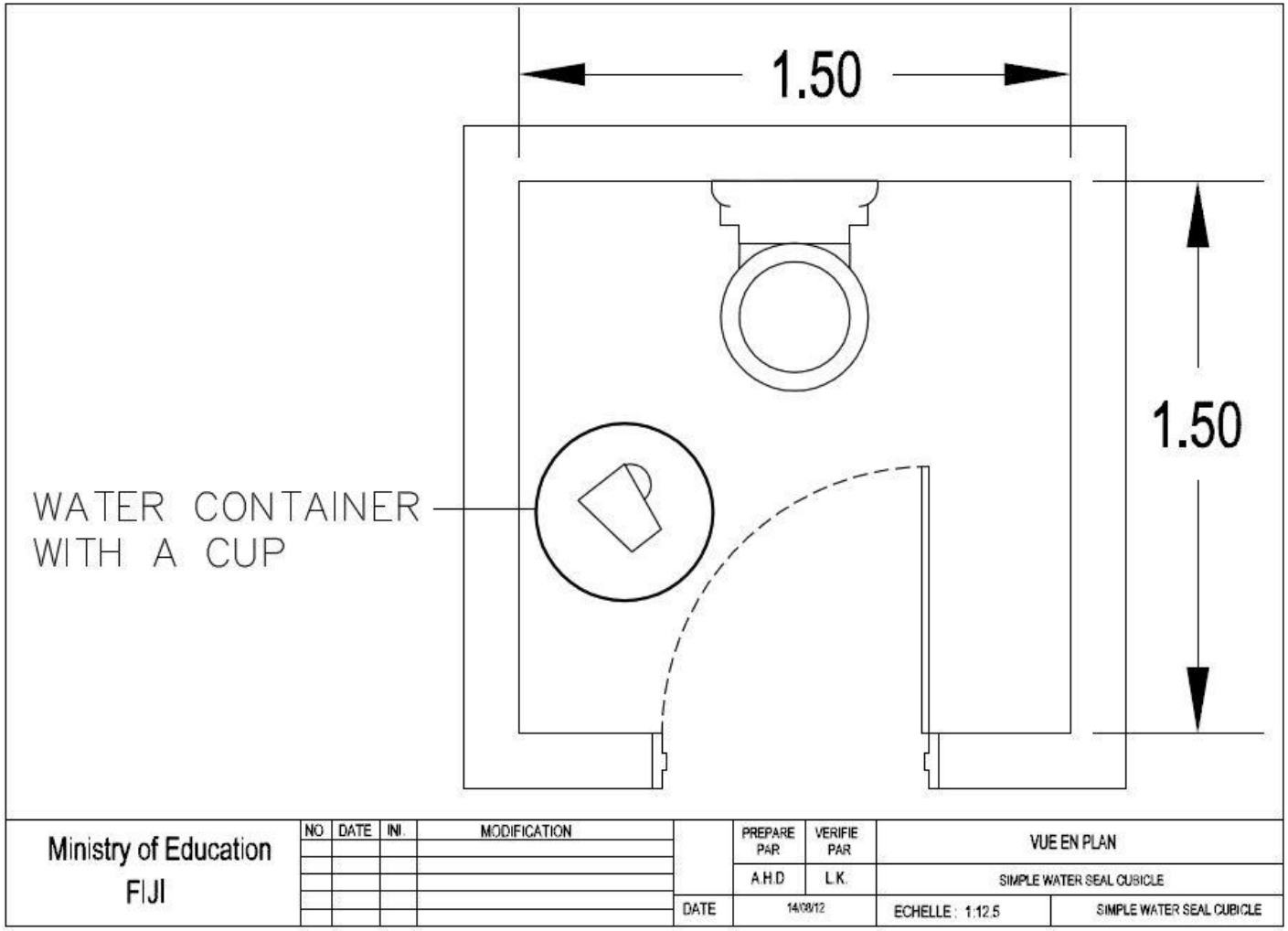


VIP Latrine dimensions

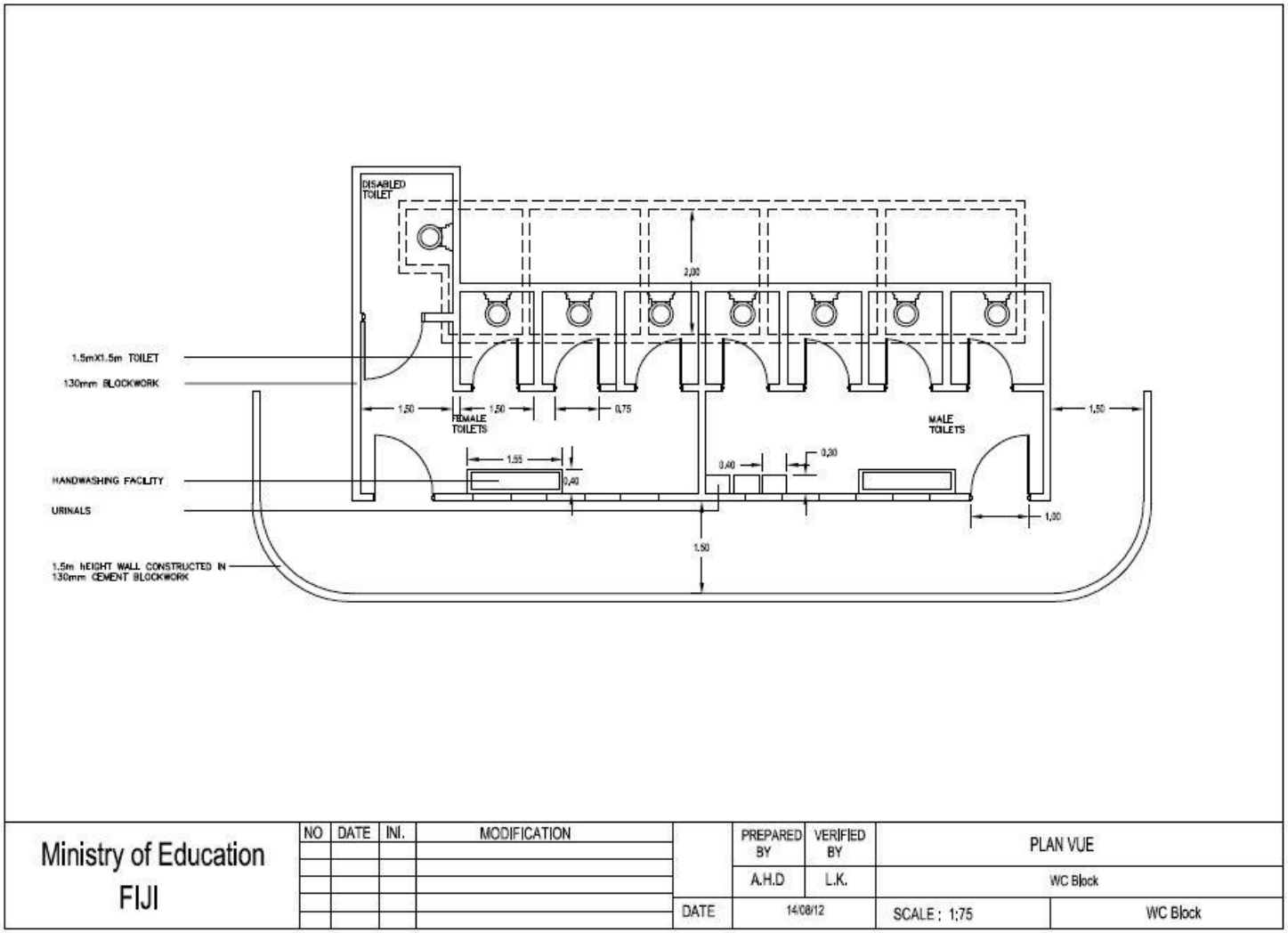
Top view plan



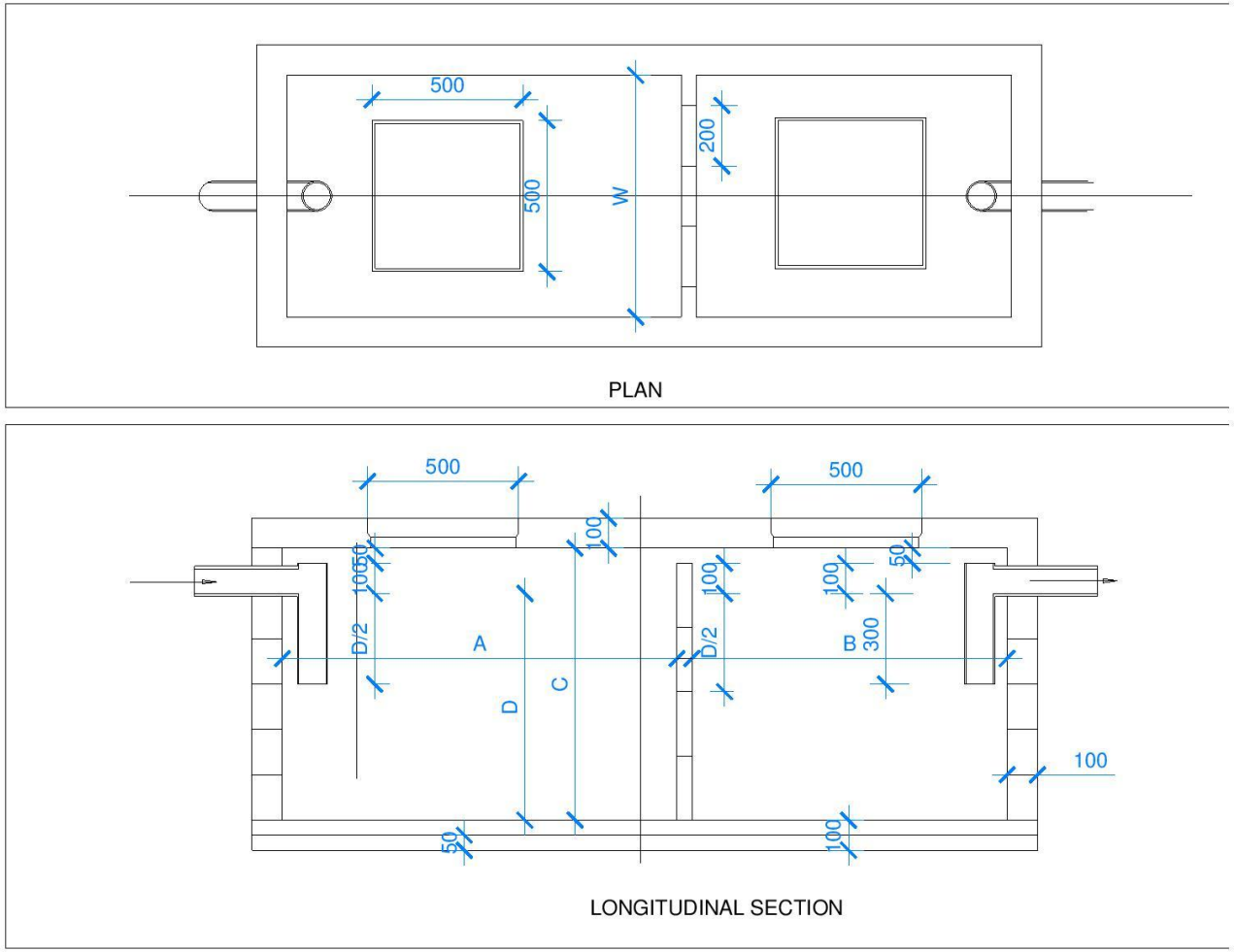
Annex 5: WATER SEAL TOILET SAMPLE

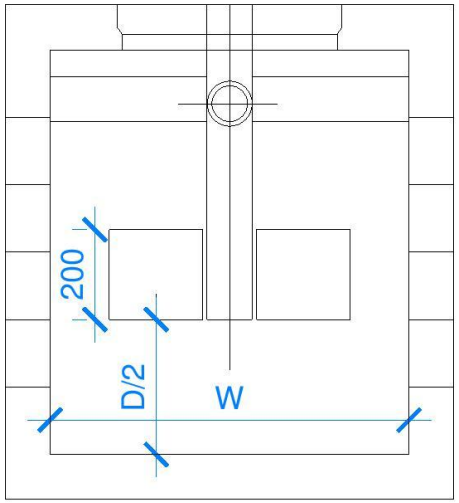


Annex 6: FLUSH TOILET BLOCK FOR GIRLS AND BOYS WITH SEPARATION AND ACCESSIBLE TOILET FOR CHILDREN WITH SPECIAL NEEDS



Annex 7: Septic Tank Specification





CROSS SECTION
(not to scale)

Notes:
1. All dimensions in mm.
2. Concrete to be 20 MPa grade.
3. Reinforcement - 665 mesh or D10 at 250 crs both ways all around

No. of persons	ALL DOMESTIC WASTE						
	A	B	C	D	W	V(m3)	F(m3)
8	1400	800	1000	850	1000	1.87	0.04
10	1400	800	1200	1050	1000	2.31	0.05
12	1800	800	1200	1050	1000	2.73	0.06
15	1800	800	1200	1050	1200	3.28	0.07
25	2000	1200	1400	1250	1400	5.60	0.11
50	3200	1600	1600	1450	1600	11.14	0.22
100	4000	2000	1800	1650	2200	21.78	0.44
150	5000	2400	2000	1850	2400	32.86	0.66
200	5600	2400	2000	1850	3000	44.40	0.89
300	6600	3400	2000	1850	3600	66.60	1.33
400	8000	4000	2000	1850	4000	88.80	1.78
500	8200	4200	2000	1850	4800	110.11	2.20
600	9000	4800	4000	1850	5200	132.76	2.66

V = volume of septic tank
F = volume of aerobic filter
For details A, B, C, D and W see Plan,Cross and Longitudinal section above

Reinforcement for Masonry Septic Tanks

Block Wall Thickness	Height of Tank	Vertical Bars	Horizontal Bars
150	1.0	D10 @ 600	D12 @ 600
	1.2	D12 @ 600	D12 @ 600
	1.4	D12 @ 400	D12 @ 400
200	1.6	D12 @ 400	D12 @ 400
	1.8	D16 @ 600	D12 @ 400
	2.0	D12 @ 400 fill all cells	D16 @ 600