34th WEDC International Conference, Addis Ababa, Ethiopia, 2009

WATER, SANITATION AND HYGIENE:
SUSTAINABLE DEVELOPMENT AND MULTISECTORAL APPROACHES

UNICEF toilet solutions for child-friendly schools in Rwanda

Arch. Luca Ginoulhiac, Italy

REVIEWED PAPER 199

Within the Child Friendly School approach, UNICEF Rwanda in partnership with the Ministry of Education is building new educational infrastructures in many Primary Schools all around the country. This paper presents few developed toilet solutions to promote a fruitful exchanges amongst participants on sanitation for primary schools.

Introduction

In Rwanda the government is committed to ensure the right to universal primary education for all children by year 2010 and since 2006 he is embarked on the development of a Minimum Quality Standards to address all quality issues responsible for low retention and completion including the school environment.

The Ministry of Education has worked with several projects on school construction and is committed to promote, through his Construction Unit (UCEFS) and together with UNICEF Rwanda, good practices such as the Child Friendly School (CFS) approach to improve quality in basic education. CFS framework provides a holistic and multi-sectoral approach to education and offers to children an inclusive, safe and healthy learning environment also through the provision of responsive physical infrastructures and facilities.

UNICEF Rwanda CFS infrastructure programme is actually implementing activities in 37 primary schools all around the country for the construction of 178 new classrooms, the rehabilitation of existing 177 classrooms, the provision of 37 special rooms for Directors, Teachers and pupils with special needs, sport grounds, rain harvesting systems as well as the construction of 61 new toilet blocks 12 units each.

Presented in this paper three developed CFS toilet solutions still under improvement by UNICEF through assessing current practices and user feedbacks.

Toilet solutions for child-friendly primary schools

Whereas any excreta treatment system represents the primary barrier against direct diffusion of pathogens and water contamination, developed CFS toilet, in order to prevent groundwater contamination and by reason of identified site constrains as the depth of the water table and the presence of reliable water availability, presents two main systems as the percolate and the non-percolate solutions. Although a non-percolate solution (septic tank) it is preferable because of the offered advantages of conventional sewerage systems like the public health and environmental protection aspects, in most of the schools part of the CFS infrastructure programme, UNICEF is providing the percolate option (VIP toilet) because of the groundwater position and the easier usage in localities where the water supply system is not reliable.

Presented toilet blocks have been developed on the basis of two main assumptions:

1. by reason of the expected reliability and durability for these long-term excreta disposal systems, toilet solutions requesting simple construction techniques and easy O&M activities are preferable;
2. CFS framework aiming at promoting a respectful, clean, safe and hygienic learning environment in primary schools provides adequate sanitation facilities such as:
   - toilet blocks separate for girls and boys
   - urinal for boys

- shower for girls
- toilets for disabled for both
- hand-washing facilities for both

The underground structures

To date 17 toilet blocks off-set pits (Figure.1) have been built and used for several months (2 with septic tanks) (Figure.2) with a solutions mostly conceived to allow an easy access to the underground structures in order to make possible future up-grading towards conventional sewerage systems and to facilitate O&M activities as the pits or the septic tank emptying. A solution based on the provision of reinforced concrete (RC) removable slabs pre-cast off-site as a requirement that at the begin of the programme was intended also to promote an higher manufacturing standard towards a more safe and reliable structural system above the underground structure. Although provided toilet blocks are generally meeting good satisfaction by users, by reason of assessed good manufacturing skills of local construction companies and problem experienced in some school, a new percolate VIP toilet block with in-set pit (Figure.3) has been conceived for future construction. In fact, as assessed and reported by teacher and director, in schools where pupils are not regularly flushing with a little quantity of water the toilet after the use, even if no complete blockage of the pipes has been experienced yet, human excreta tend to remain on the top part of the pipe affecting the healthy condition of the cubicle despite the daily cleaning activities assured by the school managements. The in-set solution will hopefully facilitate the toilet use better because of the direct connection between squatting holes and the pit although up-grading and O&M activities become slightly more complicated due to the smaller access to the pit. With regard to the off-set pits ventilation seems that very little odours are invading the cubicles while single underground compartments have not been taken into account to facilitate mentioned O&M activities.

The superstructure

Presented modular and symmetrical design intend to address required flexibility for different solutions to be provide according to local needs and an high number of units to be built. The external wall guarantees a certain privacy to users, hiding the access to the cubicle, and is also the structure where urinals have been positioned in the toilet blocks for boys. The 2,000 litres plastic water tank, together with installed gutters on the single-slope roof, represent the rainwater harvesting system to supply two internal hand-washing facilities near the entrances, the tap for the shower unit provided in each girls block and the toilet for disabled. This special toilet accessible through an independent ramp has been provided with lavabo, WC and handrail anchored to the wall to allow a proper use by those on wheelchair. Latest developed in-set solution proposes a deeper cubicle than the off-set ones to allow a more comfortable pedestal sitting for older children and also to facilitate the access through the inward opening doors. A system conceived to eliminate hazard to those outside the cubicles and to facilitate privacy when the door lock is missing or broken. The allocation of some cubicle for teachers is actually organized by the school management and initially considered ratio, as prescribed by existing national rules was 1:40 both for girls and boys while new national CFS Standards and Guidelines for Primary and Tronc Commun Schools, actually under definition thank to a dedicated UNICEF technical consultancy, prescribe 1:50 for boys, 1:30 for girls and 1:25 for staff.

Photograph 1. UNICEF CFS toilet block

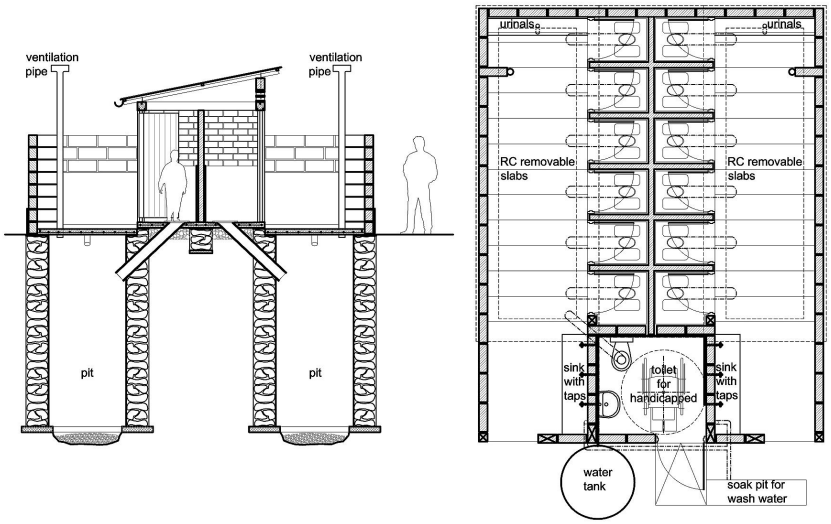

Figure 1. UNICEF child friendly school percolate VIP toilets for boys with off-set pits. Scale 1:100

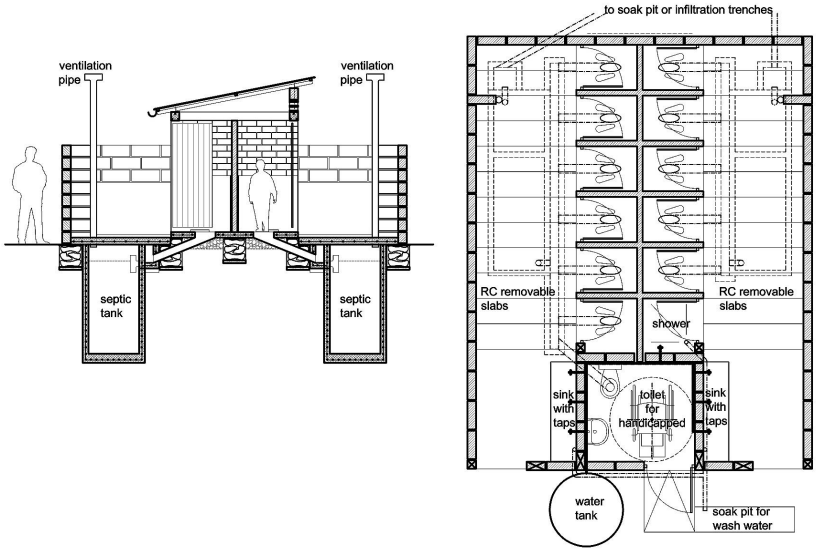

Figure 2. UNICEF child friendly school non-percolate toilets for girls with septic tanks. Scale 1:100

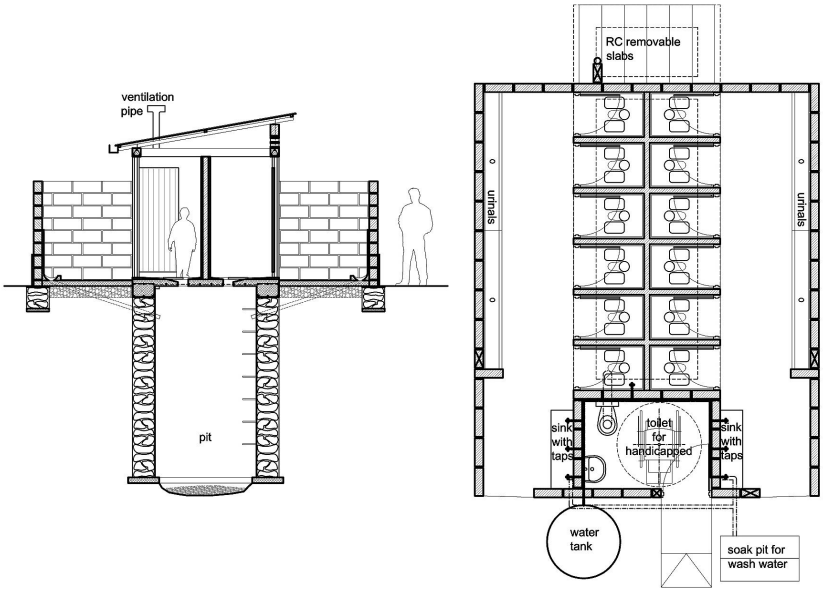

Figure 3. UNICEF Child Friendly School percolate VIP toilets for boys with in-set pit. Scale 1:100

Acknowledgements

The author/s would like to extend thanks to UNICEF Rwanda and MINEDUC/UCEFS in Rwanda.

Keywords

WASH, UNICEF, Rwanda, Child Friendly School, Toilet.

Contact details

Arch. Luca Ginoulhiac - UNICEF Rwanda
Ebenezer House, Umuganda Boulevard, P.O. Box 381, Kigali, Rwanda
Tel: +250 592 700
Fax: +250 592 810
Email: lginoulhiac@unicef.org
www. unicef.org