WEDC Developing knowledge and capacity in water and sanitation

GUIDE 16

Inclusive design of school latrines

WEDC research shows that the additional cost of making a school latrine accessible is less than 3% of the overall costs of the latrine. The most cost-effective way to improve access for children with disabilities is to incorporate accessibility into the design from the outset (inclusive design) rather than making expensive changes later.

Inclusive design means a user-friendly, child-friendly design, which benefits all users, including adolescent girls, small children, and children who are sick. However well designed the latrine, other factors such as location, distance and approach path affect accessibility and need to be part of planning and design.

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This guide examines the cost of the inclusive design of school latrines and who benefits.

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Loughborough University

Author: Hazel Jones

Illustrations: Rod Shaw and Ken Chatterton

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Water, Engineering and Development Centre
School of Civil and Building Engineering
Loughborough University
Leicestershire LE11 3TU UK

T: + 44 (0) 1509 222885
E: wedc@lboro.ac.uk
W: wedc.lboro.ac.uk

Linkedin: WEDC UK
Twitter: wedcuk
YouTube: wedclboro

Introduction

Children with disabilities – physical, sensory (blindness, deafness), intellectual, or mental health impairments – are recognised as one of the groups least likely to be enrolled in school. 5% or less complete primary school[1], leaving them more at risk of poverty[2]. Disabled girls are particularly affected.

Children with disabilities have a right to education guaranteed under the UN Convention on the Rights of Persons with Disabilities[3].

Many of these children could participate in education if the school environment was accessible[4]. School planning and construction rarely consider issues of accessibility and barrier-free design, either because of lack of awareness, or because of a perception that it must be expensive[5].

Poor school sanitation hinders many children from going to school, and exposes them to increased health risks6. Although many governments and agencies have policies about the inclusion of children with disabilities in school, these rarely consider water, sanitation and hygiene (WASH) issues.

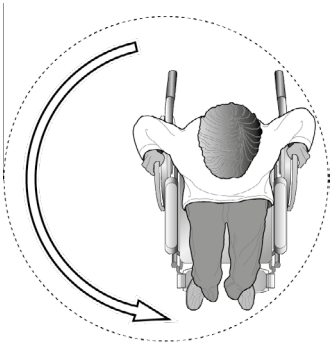

Figure 1. A poor environment

How much does accessibility cost?

Making public infrastructure accessible can cost less than 1% of total construction costs, if accessibility is planned from the outset7. However, this evidence is not specifically related to water and sanitation. Limited data from WaterAid estimates that it costs 8% extra to make a school latrine accessible8.

Research carried out by WEDC in collaboration with World Vision and WaterAid in Ethiopia found the additional cost of making a school latrine accessible to be under 3% of total costs (see Table 1).

What makes these latrines accessible?

Each latrine block to have one accessible cubicle with:

- additional space (at least an extra 1m2) (e.g. Figure 2)
- wider door (minimum 80cm wide)
- handrails for support attached either to the floor or side walls (e.g. Figures 6, 7 and 8)

- raised toilet seat, preferably fixed (e.g. Figures 6, 7 and 8)
- an access ramp ideally with a gradient of 1:20, but if space is limited, maximum gradient 1:12. (Figure 5)

Who benefits?

During primary school visits, users were asked for their views on the inclusive latrines compared with the conventional latrines. The key benefits they identified were:

- Users on crutches or in wheelchairs could use the latrine more easily and no longer had to go home to use the latrine.
- Blind users found the access ramp enabled them to walk with ease and confidence, and could use their white stick to easily locate the toilet seat.
- Young children could hold the support rails to better aim at the toilet hole.
- School directors concluded that the latrines benefitted all schoolchildren

Table 1. Costs of inclusive design of school latrines in Ethiopia

Latrine description	Description of access features	Total cost of latrine	Cost of access features*	% cost of accessibility
School A Single block VIP latrine of 8 cubicles (urban) Completed 2009	• Access ramps x 2 • Widened doors x 2 • Support rails for 2 cubicles • Raised toilet seats x 2	£5,663	£169	2.98%
School B Single block dry pit latrine of 8 cubicles (rural) Completed 2010	• Access ramps x 2 • Widened cubicles x 2 • Widened doors x 2 • Support rails for 2 cubicles	£7,122	£179	2.51%
School C Two blocks VIP latrines of 8 cubicles (urban) Completed 2009	• Access ramps x 2 • Widened cubicles x 2 • Widened doors x 2 • Support rails for 2 cubicles • Raised toilet seats x 2	£7,231	£161	2.23%

*Costs have been rounded to the nearest whole GBP

from grade 1 to 8, including disabled children, as they were safer and more secure than the old latrines. They also reduced soiling of the latrine and, since they were popular with the children, reduced open defecation. Some parents have promised to enrol their disabled children in school.

Number of cubicles per school[9]

Girls:
1 cubicle for every 25 girls, (minimum 4 cubicles) including 1 cubicle for disabled girls

Boys:
1 cubicle for every 50 boys (minimum 4 cubicles) including 1 cubicle for disabled boys

and

at least 1 metre of urinal for every 50 boys

Design and construction recommendations

- New designs and plans must be developed in consultation with the intended users or their representatives.
- External factors such as distance, location, and surrounding access are equally important (Figure 3).
- Monitoring of construction is crucial. Designs that look good on paper are often 're-interpreted' by contractors who don't understand the reasons for the changes.
- Awareness-raising about appropriate use/misuse of inclusive design features should be incorporated into school hygiene education, and O&M plans.

Water

Latrines can contaminate nearby groundwater, so locate them at least 15 metres from wells and boreholes on the downhill side. Keep latrines 15 metres from any surface water such as ponds, rivers and streams.

Surface water can seriously damage latrine structures. Make sure that rainwater can drain away quickly and that surface water running across the site after heavy rain is diverted away from the latrine block.

Access

Latrine blocks must be connected to other school buildings by clearly defined paths (Figure 3). Paths must be wide enough for two people to pass each other, have an even surface and be self-draining. Steps may be necessary in steeply sloping areas but provide an alternative route using ramps for people with walking difficulties.

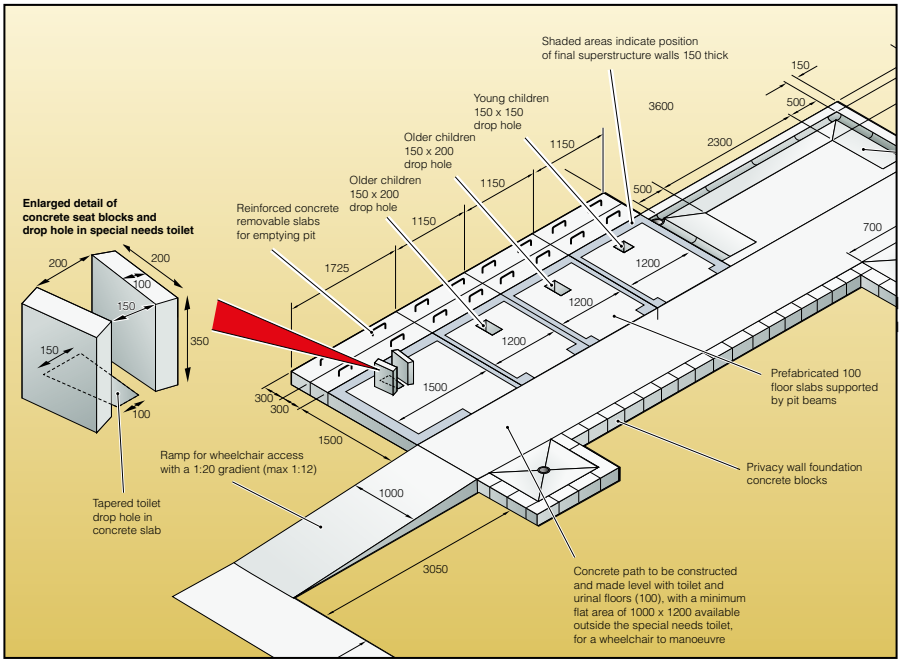

Figure 2. Floor construction: cement block or burnt brick with concrete slab (boys) [9]

Cultural traditions

The religious or cultural traditions of some communities may also have a bearing on the siting and alignment of latrines. It is always important to consider such traditions before finally deciding where to locate the latrine block.

What about existing latrines?

- An absolute minimum requirement is to provide two widened toilet cubicles with a widened door, one for females and one for males, in each school (e.g. Figure 2).
- Ramps, handrails and seats are easier to fit later, and can be added as required.
- Water for hand-washing and personal hygiene is important, even where the type of latrine technology does not require water for flushing.
- Lack of inclusive WASH in schools is only one of the barriers children with disabilities face. Others include obstacles in the overall school environment, the attitudes of teachers, parents and students,

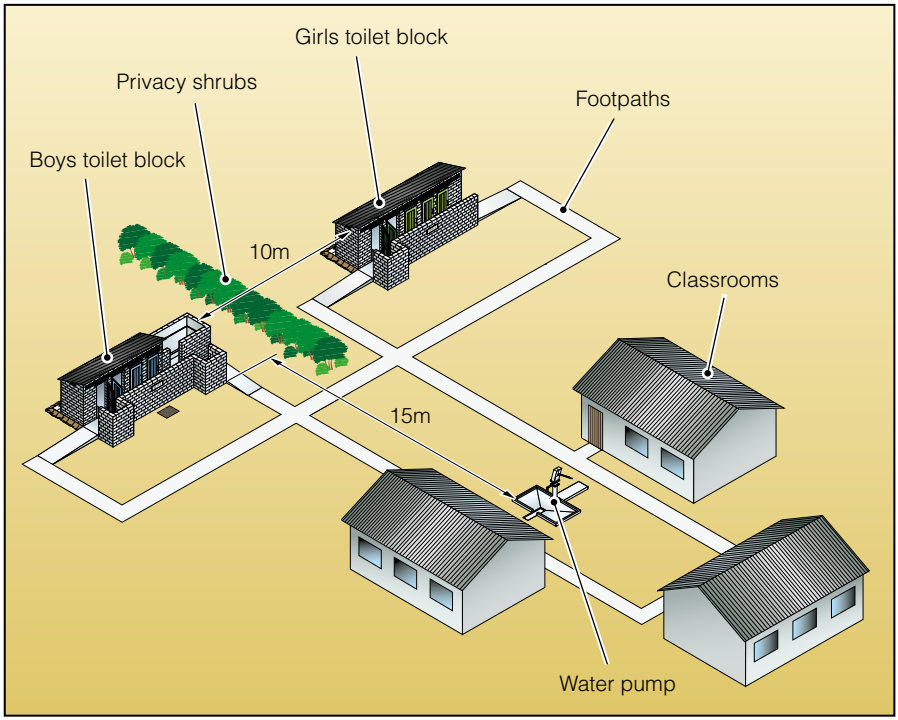

Figure 3. Guidelines for siting latrines [9]

and education policy, curriculum and teachers' skills. This range of barriers needs to be addressed holistically.

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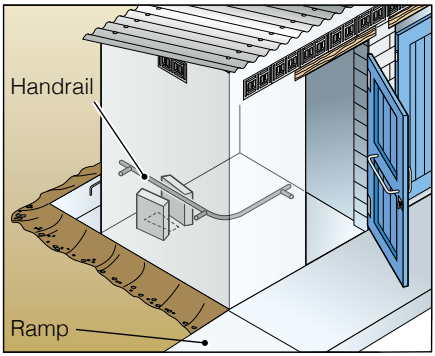

Figure 4. Cubicle for disabled pupils [9]

Figure 5. Latrine block with ramp access to entrance on left

Figure 6. Raised toilet seat with handrails on side walls [6]

Figure 7. Raised toilet seat with support rail fixed to floor

Figure 8. Raised toilet seat with rails fixed to wall and floor [6]

Further reading

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Water, Engineering and Development Centre
School of Civil and Building Engineering
Loughborough University
Leicestershire LE11 3TU UK

T: + 44 (0) 1509 222885
E: wedc@lboro.ac.uk
W: wedc.lboro.ac.uk

Linkedin: WEDC UK
Twitter: wedcuk
YouTube: wedclboro