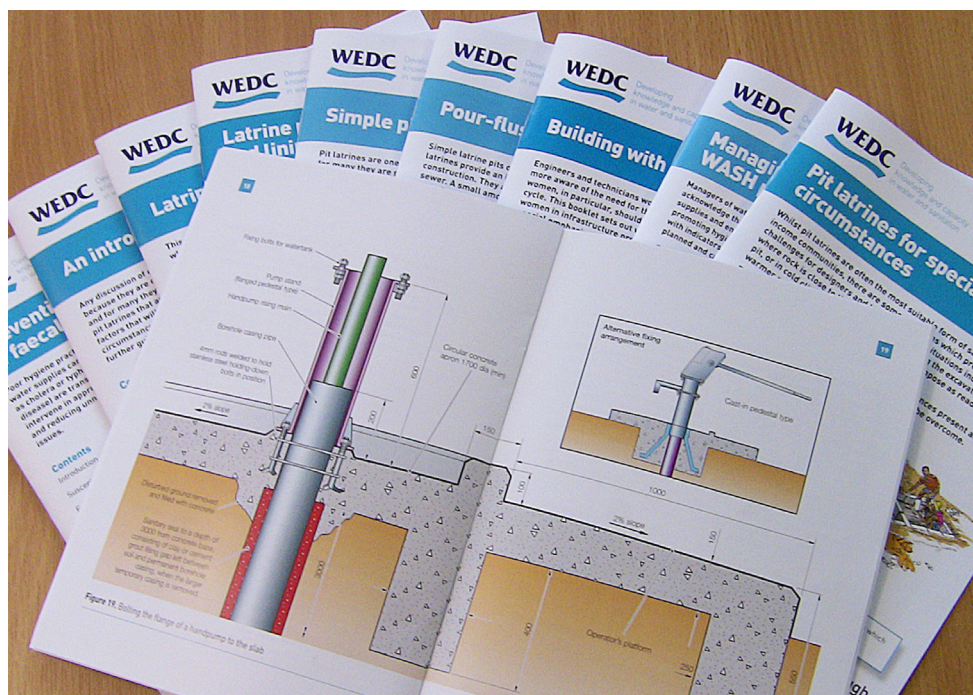


Guides on water and sanitation

Our collection of guides provides essential information and instruction about specific water, sanitation, hygiene and related subjects. They are produced in a handy A5 format and are copiously illustrated.

The guides are available to download free from the our website or can be purchased through our online store. This document is a list of currently available titles featuring hyperlinks to each guide.



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March 2017



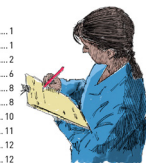
An introduction to visual impact assessment

The appearance of a proposed infrastructure development is an important issue, especially for the local community, so environmental assessments should include careful consideration of likely visual impacts of development projects and propose ways to mitigate against them.

Quantifying visual impact is often subjective and will literally depend on the viewpoint of individuals. This guide introduces the main factors that need to be considered in making a visual impact assessment.

Contents

Introduction.....	1
Reasons for assessing visual impacts.....	1
Elements of the landscape.....	2
Landscape features.....	6
Desk studies.....	8
Field studies.....	8
Predicting impacts.....	10
Mitigation.....	11
Conclusions.....	12
References and further reading.....	12



This guide is not designed to explain visual assessment in depth, as that requires a greater level of understanding than can be easily delivered in a short note. However, it should be enough to explain to managers and other project staff why visual assessments are needed and how they are carried out.

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Disasters and emergencies: definitions, impacts and response

The number of reported natural disasters is increasing and there is an apparent ongoing need to provide international humanitarian aid to people affected by conflict and war. Understanding the factors that influence the decision to intervene is important in the management of disaster relief and in the prevention of future crises.

This guide examines the key issues, sets out the definitions of disasters and emergencies, briefly looks at the changing causes and consequences of disasters and discusses some of the factors that influence people in deciding if they should respond to the need for help.

Contents

Introduction.....	1
Types of disasters.....	1
Consequences of disasters.....	3
Definitions of disasters.....	5
Defining emergencies.....	5
Disaster response.....	6
Increase in disasters.....	10
From response to prevention.....	13
Further information.....	13



This guide covers a broad range of natural, technological, social and complex disasters, including failed states. Whilst it cannot provide ready solutions for particular situations, it raises important issues to consider when aid interventions are being planned.

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Apron slabs for water points: an engineer's guide

Despite the large number of concrete slabs installed around water points throughout the world, relatively few detailed drawings of apron slabs exist. Those few drawings have many similar features and a number are copied from a common source. With the aid of technical and hand-drawn illustrations, this guide provides information about apron slabs in a new form. It explains what apron slabs are and why they are needed. It considers physical, social and organizational factors and presents technical options and recommendations for their design and construction.

Contents

What is an apron slab?.....	1
Location of the water point.....	1
Social factors.....	2
Aspects of use.....	5
The shape and size of the apron.....	9
Draining spill water.....	11
Foundations.....	16
Constructing the slab.....	20
Summary.....	23
Appendices and references.....	24



Although the main focus of this guide is on the use of apron slabs with handpump-equipped boreholes, many of its recommendations will be relevant to other types of water point such as tapstands and wells.

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Domestic water containers: an engineer's guide

This guide examines the range of domestic water containers commonly found in low-income countries and explores the role that water containers have in ensuring that household water supplies are adequate and safe. It also explains why planning for a water supply system should not end at the public tap or village well but extend to the place where the water is used. Understanding the ways in which people use water containers and designing the supply system to take account of this will help engineers to provide a better and safer service.

Contents

Introduction.....	1
Uses of water containers.....	1
Design of containers.....	5
Containers for anal cleansing.....	14
Water containers for handwashing.....	14
Treatment systems.....	16
Maintenance.....	18
Water point design.....	18
Summary.....	18
References.....	19



In this guide, the term water container includes pots, vessels, buckets, jerrycans or barrels used at household level. Tanks on vehicles and carts are not discussed.

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Developing knowledge and capacity in water and sanitation

GUIDE 5

Latrine slabs: an engineer's guide

Providing sanitation for all is a major global challenge involving many complex issues. The user of a latrine however, will have more local concerns such as the condition of the latrine slab. This is one of the key components of the most common type of sanitary facility. This guide highlights the design, manufacture and maintenance features that help to improve the safety and comfort of users.

Contents

Introduction.....	1
Importance of the slab.....	1
Design of slabs.....	3
Construction material.....	10
Structural considerations.....	15
Maintenance.....	19
Conclusions.....	19
References.....	19
Checklists.....	20

A latrine is a structure that contains a toilet and in some cases, somewhere to bathe. It is usually separate from a residence. The latrine slab is a platform over a vault with a drop hole or a flush pan into which a user excretes. The slab may incorporate a squat-plate with footrests or a seat on a pedestal.

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Developing knowledge and capacity in water and sanitation

GUIDE 6

An introduction to the Logical Framework

Logical Framework Analyses are widely used by donors and governments in the planning and evaluation of development projects. They exist in various forms and are usually known as Logical Frameworks or 'logframes'. This guide introduces the concept of logframes, and describes why and how they are used.

Contents

Introduction.....	1
The need for a framework.....	1
What is a logframe?.....	2
Developing a logframe.....	2
Components of a logframe.....	4
Verifying the logic: the 'if-then' test.....	7
Objectively verifiable indicators (OVIs).....	12
Uses and limitations of the logframe.....	14

The Logical Framework is a tool to help strengthen project design, implementation and evaluation. This means that it is best used throughout the project cycle. It helps to organize thinking, set performance indicators, allocate responsibilities and communicate effectively.

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Developing knowledge and capacity in water and sanitation

GUIDE 7

Speaking and presenting in public

Whatever organization you work for, a key role for managers and decision-makers is good communication. This includes listening to people, but also speaking to them. Much of that communication will be informal, but there is also a need for formal communication to ensure that information, views and decisions are openly shared and recorded.

This guide provides guidance on how to prepare a formal presentation. It looks at the key to making a successful presentation, how to prepare suitable visual aids as well as providing useful tips for making the presentation itself.

Contents

Introduction.....	1
Presentations.....	1
Preparation – the key to success.....	2
Deciding the content of your presentation.....	4
Preparing and using visual aids.....	6
Checking the set-up.....	8
The presentation itself.....	11
Reference.....	12

Other related guides in the WEDC series you may also find useful include:

- A guide to writing reports
- How to use and cite literature effectively

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Developing knowledge and capacity in water and sanitation

GUIDE 8

Building with the community

Engineers and technicians working on development projects are becoming more aware of the need for the participation of local people, and that women, in particular, should be involved closely at all stages of the project cycle. This booklet sets out why engineers should involve both men and women in infrastructure projects and why women's participation has a special emphasis. It introduces ways in which engineers and technicians can ensure their projects focus on the needs of men and women.

Contents of this guide

The aims of engineering projects.....	1
Infrastructure and people's livelihoods.....	1
Understanding communities.....	3
Involving women.....	5
Increasing project efficiency.....	7
Why are men and women not involved?.....	9
Policy and practice.....	10
The role of the engineer.....	11
How can engineers involve men and women?.....	12
Practising what you preach.....	13
Key points.....	16

This booklet is also useful for managers who do understand the issues but are seeking ways to tackle these, or for those who wish to explain the problems and solutions to their colleagues.

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Writing reports

There are numerous different formats and styles of writing, from an informal letter or e-mail, to a formal government report. Each has its own purpose – to communicate to the intended audience. A good report could be defined as an effective one, that is, one that produces its intended results. If the author relates directly to the objectives by writing a well-structured document in clear language, it is more likely to gain attention and be effective. An effective report gives the writer, and the organization, a professional image, makes a good impression, and persuades others to take the work seriously. This guide will help you to write such a report.

Contents

Introduction.....	1
Types of reports.....	1
The writing process.....	3
Heading one.....	5
Organizing the information.....	8
Structuring the report.....	14
Writing the report.....	19
Format.....	24
Conclusion.....	24



The water and sanitation sector can be very complex, with many different professionals working together at different times of the project cycle. Reporting the decisions, activities and outcomes of studies, visits, discussions and practical work helps communicate and record important information. A well-written report is easy to read and adds to the effectiveness of any project.

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How to use, cite and reference literature effectively

Most of what we know, we learn from other people. Much of this information is accepted without question, but as learning progresses to a higher level (as it does when studying towards a university degree) students are expected to appraise critically what they are learning, judging the evidence and questioning what is presented. Being able to locate, organize and compare different sources of information is a core skill required of students and graduates.

Contents

Introduction.....	1
Learning from others.....	1
A good reference.....	5
How to cite work.....	9
Bibliographic references.....	14
Citation conventions.....	22
Non-academic referencing.....	25
References.....	26



The consequences of not referencing other people's work correctly can be serious and this misconduct is becoming easier to detect. This guide presents an overview of why the use of other people's work is encouraged at university, but only within certain conditions and subject to particular standards and conventions.

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Selecting water, sanitation and hygiene indicators

For the effective management or investigation of a water, sanitation or hygiene project, the manager or researcher has to be aware of the current state of the project at any given point to be able to review its direction and measure progress towards its goal. Many indicators of progress can be measured but collecting and analysing information is expensive, so choosing which indicators to use and deciding when, where and how to measure them is important. This guide helps with this decision-making process.

Contents

Introduction.....	1
Why measure?.....	1
Who are measurements for?.....	3
What is an indicator?.....	5
How to select indicators.....	10
What to measure?.....	12
How many to measure?.....	14
Data quality.....	23
Standards and targets.....	25
Bibliography and references.....	26



This guide explores the nature of a good indicator, whether the indicator is for the day-to-day monitoring of water utility performance, emergency assessment of water resources or an in-depth assessment of attitudes about hand-washing. It does not set out to prescribe what should be measured, but describes the process of selecting what to measure and when and where to measure it.

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The Sphere Project

Humanitarian Charter and Minimum Standards in Disaster Response

The Sphere Project is an initiative to determine and promote standards by which the global community responds to the plight of people affected by disasters. This guide describes the format and content of the handbook produced by the project.

Contents

Background.....	1
The aims of Sphere.....	1
Humanitarian Charter.....	1
Fundamentals of humanitarian action.....	2
Core Standards.....	3
When to use Sphere.....	4
Who uses Sphere?.....	4
Where are all the numbers?.....	4
Who polices Sphere?.....	6



This guide is also available in French

Humanitarian aid is material or logistical assistance provided for humanitarian purposes, typically in response to humanitarian crises including natural disaster and man-made disaster. The primary objective of humanitarian aid is to save lives, alleviate suffering, and maintain human dignity. It may therefore be distinguished from development aid, which seeks to address the underlying socioeconomic factors which may have led to a crisis or emergency.

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Managing hygiene promotion in WASH programmes

Managers of water, sanitation and hygiene (WASH) programmes normally acknowledge that people need to behave in a hygienic manner to protect water supplies and ensure that sanitation facilities are used properly. However, promoting hygienic behaviour differs from the construction of infrastructure, with indicators of progress being less concrete. This means campaigns need to be planned and carried out in a suitable manner.

Contents

Background.....	1
What is hygiene?.....	1
Principles of hygiene promotion.....	3
Planning a hygiene promotion programme.....	8
Participatory tools.....	12
Analysis of the data.....	15
Implementation of the action plan.....	16
Methods of hygiene and sanitation promotion.....	20
Selecting and training facilitators.....	21
Monitoring and evaluation.....	21



A number of studies have suggested that the impact of hygiene practices on sanitation-related disease could be as great as that of the actual provision of sanitation facilities. Effective hygiene promotion is widely believed to be one of the most valuable tools we have to change people's behaviour, which in turn can protect them from diarrhoeal diseases. It can also be a helpful way to encourage participation and empower communities. Despite the acceptance of its importance, hygiene promotion is often given far less emphasis than traditional water supply and sanitation activities in development settings. This guide is designed to help address this issue.

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Sanitary surveying

On a visit to a water supply scheme, it is usually possible to spot any faults and deficiencies that could lead to the contamination of potable water if you know what you are looking for.

Sanitary surveying is a formal inspection technique that records visible problems, enabling fieldworkers and community leaders to assess the likely quality of the water, relative to other sources, and to take remedial action.

Contents

Survey location points.....	1
What is the purpose of a sanitary survey?.....	1
What data are needed for a sanitary survey?.....	2
Sanitary-risk factors.....	3
Who should undertake sanitary surveys?.....	4
Illustrated sanitary report forms.....	4
How are the sanitary-survey results used?.....	5
Further reading.....	5



Sanitary surveying specifically identifies potential problems which may threaten drinking-water quality at the source, point of abstraction, treatment works, or distribution system. It relies on the inspection of physical installations by an inspector or a team of inspectors.

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Water source selection

Water is essential for life, but for many people, the quantity of water available may be minimal, and the water may be of poor quality. This guide outlines some of the issues which need to be considered when planning improvements to supplies, to ensure that the most appropriate sources of water are selected.

Contents

Rainwater.....	1
Surface water.....	1
Groundwater.....	2
Socio-political / cultural considerations.....	3
Yield versus demand.....	4
Water quality.....	4
Technical requirements.....	4
Economic considerations.....	5
Legal and management requirements.....	5
Impacts of development.....	5
Selecting alternative water supplies.....	8
Further reading.....	9



The three types of water source considered in this guide are rainwater, surface water and groundwater.

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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.

Contents

Introduction.....	1
How much does accessibility cost?.....	1
What makes these latrines accessible?.....	1
Who benefits?.....	2
Design and construction recommendations.....	3
Water.....	3
Access.....	3
Cultural traditions.....	4
What about existing latrines?.....	4
Acknowledgements.....	7



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

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Measuring chemical concentrations in water

To ensure that water is safe to drink, it is important to eliminate any harmful micro-organisms that may be present in the water. It is important too, to limit the concentrations of chemicals that could also be present in the water.

This guide is a transcript of the WEDC film of the same title from <http://wedc.tu/measuring-chemical-concentrations-in-water>. The film looks at how chemicals in water can be measured, using chlorine, nitrate and iron as examples.

Contents

Chemical concentrations in water	1
Chlorine	1
An overview of the process	1
When and where should the testing of chlorination take place?	3
Iron	6
The process for testing concentrations of iron in water	7
References	8



Although the examples shown in the film were undertaken in a laboratory, with portable test kits, these methods can be used in the field too.



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Menstruation hygiene management for schoolgirls

This guide outlines the problems experienced by menstruating schoolgirls in low-income countries. Although its focus is predominantly sub-Saharan Africa, many of the issues raised are relevant to girls in most low-income countries, although there may be differences in popular practice and beliefs. The guide also evaluates simple solutions to these problems including the use of low-cost sanitary pads, and suggests ways in which menstruation hygiene management (MHM) can be included in water, sanitation and hygiene (WASH) programmes.

Contents

Problems faced by menstruating schoolgirls	1
Cultural and religious restrictions	2
Practical considerations for MHM	5
MHM and the WASH sector	13
References	14



This guide also considers how menstrual practices are affected by cultural beliefs and the lack of education both at home and at school.

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An introduction to water safety plans

This guide describes what water safety plans are, why they are used, and how they can be developed and implemented. It demonstrates how they contribute to ensuring that consumers, suppliers and regulators can have confidence in the quality of water supplies.

The guide is intended for those who have responsibility for the quality of water supplies and are involved in developing, implementing or reviewing water safety plans.

Contents

Introduction	1
Limitations of WSPs	2
Information required	3
Developing a WSP	3
Risk management	7
Summary	7
References and further information	8



Water safety plans (WSPs) can be used for water supply schemes of any size, from small community schemes to large utility-managed schemes. Appropriate numbers of water supply staff and community members can contribute to the preparation and implementation of the water safety plans, depending on the size of the scheme and management arrangements.

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Preventing the transmission of faecal-oral diseases

Poor hygiene practices, lack of adequate sanitation and unsafe or limited water supplies can contribute to the spread of preventable diseases such as cholera or typhoid. Understanding how pathogens (organisms that cause disease) are transmitted allows engineers and public health workers to intervene in appropriate ways to break the transmission cycle, saving lives and reducing unnecessary suffering. This guide examines these crucial issues.

Contents

Introduction	1
Susceptible people	3
Epidemics	3
Breaking the transmission	3
A complex pattern	3
Summary	5
References and further information	5



Infectious dose, ID50, is defined as the number of pathogens ingested per person needed to infect 50% of the population.

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How to design a poster

A poster is a piece of paper or board mounted on a wall or other vertical surface designed to either attract the attention of groups of people to specific information, or to persuade people to think or act in a particular way. They usually include text, images and/or other graphic elements, but they can be either entirely graphical or entirely based on text. As posters are primarily a visual medium they are useful to communicate with people who are illiterate or who do not speak the native language. They are also a quick way to communicate headline messages.

Contents

Introduction.....	1
Your audience.....	1
Location.....	1
Elements of poster design.....	1
Poster production steps.....	2
Step 1: Planning the message.....	2
Step 2: Visualising the message.....	2
Step 3: Finding the right imagery.....	5
Step 4: Testing a draft.....	6
Step 5: Revising and finalising.....	6
Summary.....	6
Some examples.....	7



This booklet gives general guidance about how to go about designing an effective poster, with particular reference to project posters.

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An introduction to pit latrines

Any discussion of on-site sanitation must start with pit latrines. This is because they are one of the oldest forms of formal sanitation in the world and for many they are still the best. This guide introduces the types of pit latrines that are commonly used in low-income communities and the factors that will help determine which type is most suitable for any given circumstance. Detailed information about particular designs is presented in further guides in this series.

Contents

The advantages of a pit latrine.....	1
So why don't some people like pit latrines?.....	1
Choosing the correct design.....	1
What if I can't find a suitable design?.....	1
Design details.....	4
Latrine slabs.....	4
Latrines for emergencies.....	4
In conclusion.....	4



Other related guides in this series:

Guide 23: Latrine pit design
Guide 24: Latrine excavation and linings
Guide 25: Simple pit latrines
Guide 26: Pour flush latrines

Guide 27: Ventilated improved pit latrines
Guide 28: Latrine superstructures
Guide 29: Pit latrines used in special circumstances

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Latrine pit design

This guide examines some of the factors that need to be taken into account when planning and designing a latrine pit (or twin pits), including the location of a latrine, its shape, volume, liquid capacity and life.

Contents

Pit location.....	1
Key design features.....	1
Distance from a water source.....	2
Depth to water source.....	2
Lateral separation.....	2
Shape.....	2
Volume.....	8
Liquid capacity.....	9
Pit life.....	9



Associated reading:

[Latrine pit excavation and linings](#)

Refer to other guides in this series for further information about the range of latrine types suitable for low-income communities.

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Latrine pit excavation and linings

The need for a latrine pit lining depends upon the type of latrine under construction and the condition of the soil. Septic tanks and aqua privies, for example, require watertight compartments so their pits are always lined. For a pit latrine, however, it is only necessary to line the pit if there is a possibility that it will collapse during its life span.

Contents

Pit excavation.....	1
Shallow pits.....	1
Deep pits.....	1
When to line a pit.....	3
Lining material.....	3
Joining.....	3
Brick, blockwork and stone linings.....	4
Corbelling.....	4
Behind the lining.....	4
Thin linings.....	5
Foundations.....	6



This guide examines the methods and materials for lining a pit and the soil conditions that determine which options are most appropriate.

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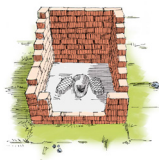


Simple pit latrines

Pit latrines are one of the oldest forms of formal sanitation in the world and for many they are still the best. Pit latrines are simple to build and can be constructed using local materials and technologies. Compared with other forms of sanitation they are relatively cheap, easy to operate and maintain and, if properly used, help prevent the spread of excreta-related diseases. For most low-income communities in the developing world, the pit latrine in one form or another will be the most appropriate means of excreta disposal.

Contents

How do pit latrines work?	1
Simple pit latrines	1
Components	3
The mound	5
The toilet building	5
Problems with simple pit latrines	6



This guide describes how pit latrines work and the components of pit latrines. It also examines some of the main problems that can arise with this simple form of sanitation.

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Pour-flush latrines

Simple latrine pits offer a basic level of service to the user. Pour-flush latrines provide an improved option in terms of use, maintenance and construction. They are a cross between a pit latrine and a septic tank or sewer. A small amount of water is used to flush excreta out of a collection pan, down a short pipe and into a pit. A water trap, if fitted, fills with water to form a seal and isolates the pit from the user – an effective way of controlling smells and flies.

Contents

Improvements on a basic pit latrine	1
Pans	2
Water traps	2
Connecting pipe	3
Using pour-flush latrines	4
Latrine configurations	4
Simple pour-flush latrine	4
Pit contents	7
Ventilation	8
Further information	8



Pour-flush latrines are an on-site 'wet' option; they require a regular supply of water for flushing, but considerably less than a flush toilet discharging to a sewer or septic tank.

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Ventilated improved pit (VIP) latrines

The addition of a vent pipe to a simple pit latrine is one way of reducing the nuisance of flies in the cubicle if the cubicle is kept clean and dark. This type of latrine is called a ventilated improved pit (VIP) latrine. There are a number of designs to suit different situations but they all work in much the same way. This guide describes how they work and presents various designs and design details.

Contents

Why build a VIP latrine?	1
Controlling flies	2
Spiral VIP latrines	2
Disadvantages of VIP latrines	3
Maintaining the flow of air	3
Offset latrines	4
Materials for vent pipes	4
The fly screen	6
Placement of the latrine	8
Twin pit VIP latrines	8
Further information	11



Although the main focus of this guide is on the use of ventilated improved pit latrines, many of its recommendations will be relevant to other types of latrines too.

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Latrine superstructures

A latrine superstructure is a shelter which provides privacy and protection for the user of the latrine. Superstructures can be built from a variety of materials ranging from bricks, blocks and stone to corrugated metal sheets, wattle and daub and, in emergencies, even plastic or sackcloth. This guide highlights some of the important factors to be considered when designing and building a latrine superstructure.

Contents

Privacy, protection, health	1
The involvement of users	1
Shape (plan view)	1
Location	2
Ventilation	2
Lighting	3
Access	3
Design and materials	5
Fired and sun-dried bricks	7
Doors	8
References	8



For detailed information, refer to *A Guide to the Development of On-site Sanitation*. The reference is given on page 8.

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Pit latrines for special circumstances

Whilst pit latrines are often the most suitable form of sanitation in low-income communities, there are some situations which present particular challenges for designers and builders. These situations include locations where rock is close to the surface, so preventing the excavation of a deep pit, or in cold climates where solids do not decompose as readily as in warmer environments.

This guide examines the problems these circumstances present and suggests ways in which some of the difficulties can be overcome.

Contents

When rock is close to the surface	1
High water table	2
Elevated houses	3
Cold climates	5
Sludge in cold climates	6
Building latrines in cold climates	7
Further information	8



Refer to other guides in this series for information about other types of pit latrines which are suitable for most low-income communities.

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Septic tank and aqua privy design

Using water to flush faeces away from a toilet ensures that the waste is separated from the user, helping to control smells and flies. It allows the toilet facilities to be located inside the home, for the convenience and security of the user, especially women and housebound people. The water used for flushing however now needs to be treated and if public sewers are not nearby, a septic tank provides a simple but effective method of removing the worst of the contaminants.

Contents

Introduction	1
How a septic tank works	1
Why use a septic tank?	2
Aqua privies	3
Location	4
Treatment processes	5
Design	6
Operation	17



This guide is about disposing of human wastes and sullage using septic tanks and aqua privies. It describes how they work and discusses how they are designed and constructed.

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Measuring the turbidity of water supplies

Turbidity is the cloudiness of a liquid caused by particles that are usually invisible to the naked eye. Turbidity can vary: some waters can be very clear, others can be very cloudy. For example, the turbidity would be high in a river full of mud and silt where it would be near impossible to see through the water, whereas by comparison, it would be low in clear spring water.

Measuring the turbidity of water is an important test of its quality as it is one of the methods of determining whether or not it is safe to drink - pathogens harmful to human health can be suspended in turbid water. This guide is the transcript from the WEDC film of the same title, available from this address: <http://wedc.lu/measuring-the-turbidity-of-water>

Contents

Introduction	1
The Tyndall Effect	1
The turbidity tube	2
The Chinese Method	3
Turbidity meters	5
If no specialist equipment is available	6



WHO also notes that managing turbidity affects both the acceptability of water to consumers, and the selection and efficiency of treatment processes, particularly the efficiency of disinfection with chlorine.



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How to make concrete

Concrete is a complex material that requires care during the preparation, mixing, placing and curing (hardening) for the final product to be of acceptable quality for construction. This guide describes the main components of concrete, how to combine them and how to use the final mix. It also considers the special difficulties of using concrete in hot and cold climates and mixing concrete by hand.

Contents

Concrete constituents	1
Cement	1
Aggregates	3
Concrete mixes	5
Mix ratios	5
Mixing	5
Mechanical mixing	8
Hand mixing	8
Placement and compaction	9
Curing	13
Concrete in extreme temperatures	13
Cold weather	13
Hot weather	14



Note: Cement is a hazardous chemical substance and should be handled with extreme care. Despite the apparent simplicity of concrete, it is a complex material and requires careful attention if the final product is to be strong, hard and durable.

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9

WEDC Developing knowledge and capacity in water and sanitation

GUIDE 33


Membrane filtration

Faecal matter is an indicator of many diseases that are transmitted by the faecal-oral route, so if faecal organisms are found in water we can assume that disease-causing organisms, commonly called 'pathogens', are also present.

Membrane filtration is a means of testing the quality of water for faecal contamination and therefore a way of determining whether a water supply is safe, or whether the water needs treating before consumption. This guide presents an overview of the process.


Contents

How membrane filtration works.....	1
Preparation – assembling the kit and preparing the food.....	1
Sterilization of the equipment.....	3
Collecting the water sample.....	5
Filtration.....	5
Growing the bacteria.....	6
Counting the colonies of bacteria.....	7



This guide is a transcript from the WEDC film of the same title which is available here: <http://wedc.lu/membrane-filtration>

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WEDC Developing knowledge and capacity in water and sanitation


GUIDE 34

Water sampling

For many people, the quality of water available can be poor. Analysis of a water supply may be required to find out whether the water is safe to drink or whether it needs to be treated before consumption. First, however, it is important to collect a sample of water representative of the water supply as a whole. Methods of analysing the quality of water are discussed in a series of films produced by WEDC. This guide is a transcript from the WEDC film of the same title which is available here: <http://wedc.lu/water-sampling>


Contents

Preparation and sterilization of sample bottles.....	1
Sampling from a tap or standpost.....	4
Sampling from handpumps, wells and boreholes fitted with a pump.....	6
Sampling from an open well.....	7
Sampling from a watercourse or reservoir.....	9
Sampling water from a water container.....	10
Frequency of sampling.....	10
Summary points.....	11
Further reading.....	12



When a water sample is collected, care needs to be taken to ensure that there is no accidental contamination of the sample from the container the sample is collected in, during the process of sampling, during transportation of the sample from field to laboratory (if no portable field testing equipment is available), and by the way it is stored.

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Mobile notes

<http://wedc.lu/washnotes>



About WEDC

The Water, Engineering and Development Centre is one of the world's leading education and research institutes for developing knowledge and capacity in water and sanitation for sustainable development and emergency relief.

We are committed to the provision of effective, evidence-based and appropriate solutions for the improvement of basic infrastructure and essential services for people living in low- and middle-income countries. With over 45 years of experience, we offer expert advice and quality learning opportunities for sector professionals.

Founded in 1971, WEDC is based in the School of Civil and Building Engineering at Loughborough University, one of the top UK universities. Being a part of a leading university gives us a recognised platform of independence and quality.

What makes us stand out from the crowd is our outreach to practitioners. We use our knowledge base and our applied research work to develop the capacity of individuals and organizations throughout the world, promoting the integration of social, technical, economic, institutional and environmental activities as foundations for sustainable development.

Visit our website to find out more about our postgraduate and professional development programmes (MSc, Diplomas and postgraduate certificates available at the University or by distance learning); our research; our advisory services; our international conferences; and our extensive range of information resources which are free to download from our knowledge base.

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