GUIDANCE NOTES ON DISCHARGES FROM VILLAGE HOUSES

Environmental Protection Department

28/F Southorn Centre
130 Hennessy Road
Wan Chai
Hong Kong

CONTENTS

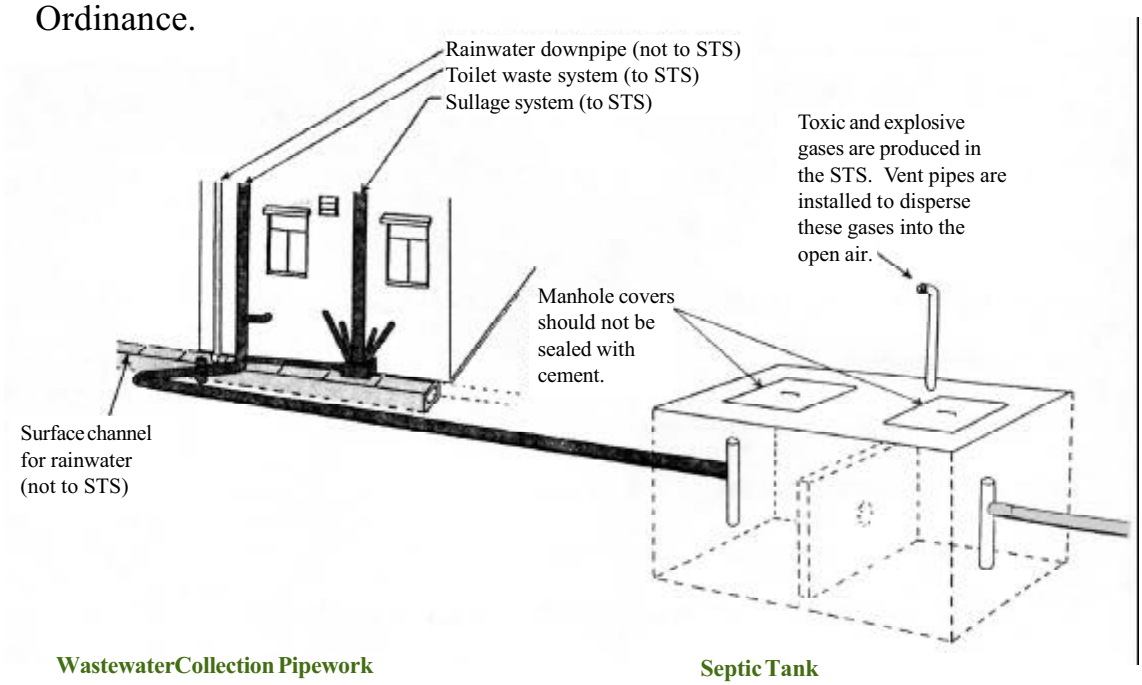
	Page
Introduction	4
How does a Septic Tank System (STS) work	5
Control what goes into your STS	6
Inspect, desludge and repair your STS	8
What to do if your STS floods or overflows	11
Disposal of sullage	12
If your STS do not receive sullage	13
If you do not have a STS	13
Precautions when planning for a new STS	14
Connecting to communal sewer	15
Legal requirements under the Water Pollution Control Ordinance (WPCO)	17
Further information	17
Regional Office Boundary Map	19
Record of Inspection, Desludging and Repair Work	20
Some Immediate Action to take	24
List of contractors undertaking inspection, desludging and repair work	24

Introduction

A Septic Tank System (STS) is the most common type of wastewater disposal system for small village houses in areas where no communal sewer is available.

2. A STS can only perform well if it has been properly sited, designed, constructed, used, desludged and repaired when necessary.

3. A proper wastewater disposal system (including STS) should be installed for the disposal of both toilet waste and sullage (i.e. wastewater from shower and sink etc.). See diagram below. Disposal of sullage into surface channels can be tolerated only if this does not result in pollution. Where necessary, the Environmental Protection Department (EPD) may require the responsible householder to install proper facilities (e.g. a STS) for the disposal of toilet waste and sullage. Pollution associated with the incorrect disposal of wastewater can result in prosecution under the Water Pollution Control Ordinance.



WastewaterCollection Pipework

Toilet wastes and sullage (i.e. wastewater from bath, shower, sink, washing of clothes) are collected by pipes to the STS. Rainwater, which should be discharged into stormwater channels, should always be excluded from the STS.

Septic Tank

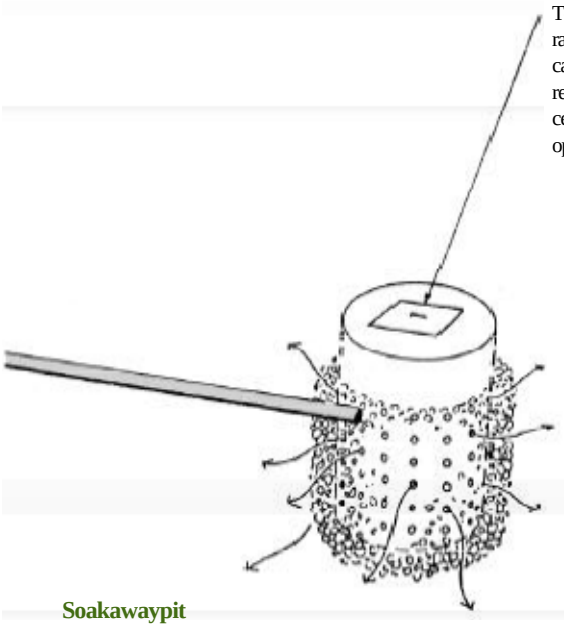
Inside the septic tank, wastewater is partially broken down and separates out into 3 layers, the scum on the top, the sludge at the bottom, and the main body of liquid which then becomes the effluent from the septic tank. When the STS is properly used, maintained and desludged, few solids would leave the tank together with the effluent.

How does a Septic Tank System (STS) work?

4. A STS consists of a septic tank, a soakaway pit or some soakaway trenches, and the surrounding soil into which wastewater is finally disposed. The septic tank should be large enough to hold at least the volume of wastewater collected in one day. The soakaway system and the surrounding soil should be able to soak away the same volume in one day. Additional information on STS could be found in the EPD Website.

5. **OVERFLOW** from septic tank or soakaway pit, or direct discharge without passing through a soakaway system, is **POLLUTING** and should not be permitted.

6. Polluting material is only removed from the wastewater after travelling a long distance in the soil. Pollution would result if a STS is located too near to a beach, a stream, a well, etc., or even too near to a retaining wall where wastewater might seep out from the face of the wall.



Soakawaypit

A soakaway pit has a perforated lining through which effluent from the septic tank can soak into the surrounding soil. This effluent contains dissolved polluting material and also many small organisms (pathogens) that can cause illness. Soakaway trenches perform the same function as a soakaway pit, but are usually more efficient.

Surrounding Soil

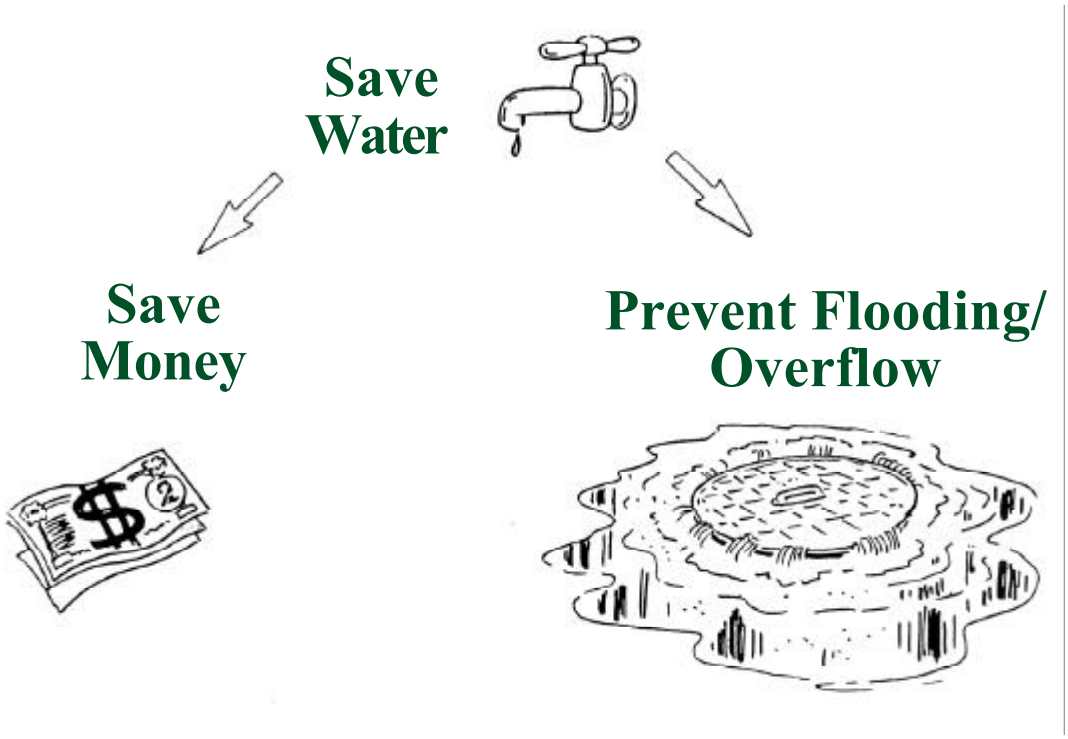
As the effluent seeps through the surrounding soil, a process of natural purification occurs. This process includes the breakdown of the polluting material by bacteria occurring naturally in the soil, and the eventual "die off" of the pathogens. Adequate purification can only be achieved after the effluent has travelled a fairly long distance through the ground.

CONTROL WHAT GOES INTO YOUR STS

7. Don't overload your STS by discharging more than your STS can handle.

   You should ensure that your STS has adequate capacity, especially before letting your house as a holiday bungalow. If necessary, seek specialist advice.

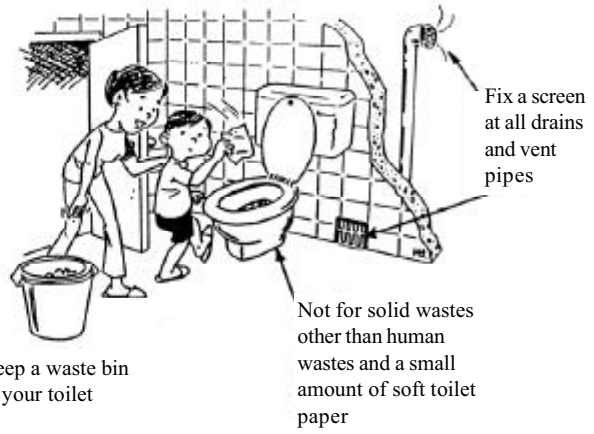
Overloading will lead to flooding or overflow

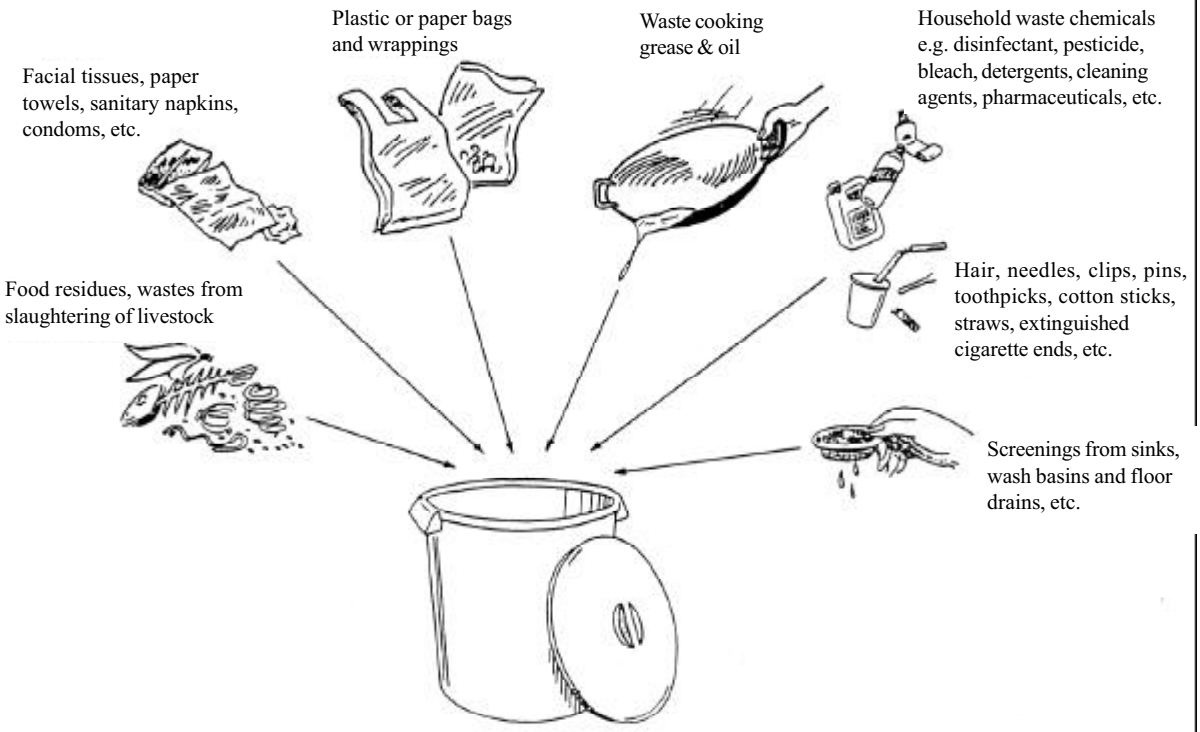


4 Ways to Prevent Overloading your STS and Save Water

- Do not waste any water; use water sensibly
- Do not flush your toilet unnecessarily
- Take a brief shower instead of a bath
- Use washing machine only when fully loaded

8. Don't deposit any solid waste other than human toilet waste and a small amount of soft toilet paper into your STS. Put all other waste into a garbage bin. Fit a screen at every sink, wash basin and floor drain. Screens fitted at all drain openings and vent pipes also help to control vermin.





Dispose of these wastes as refuse

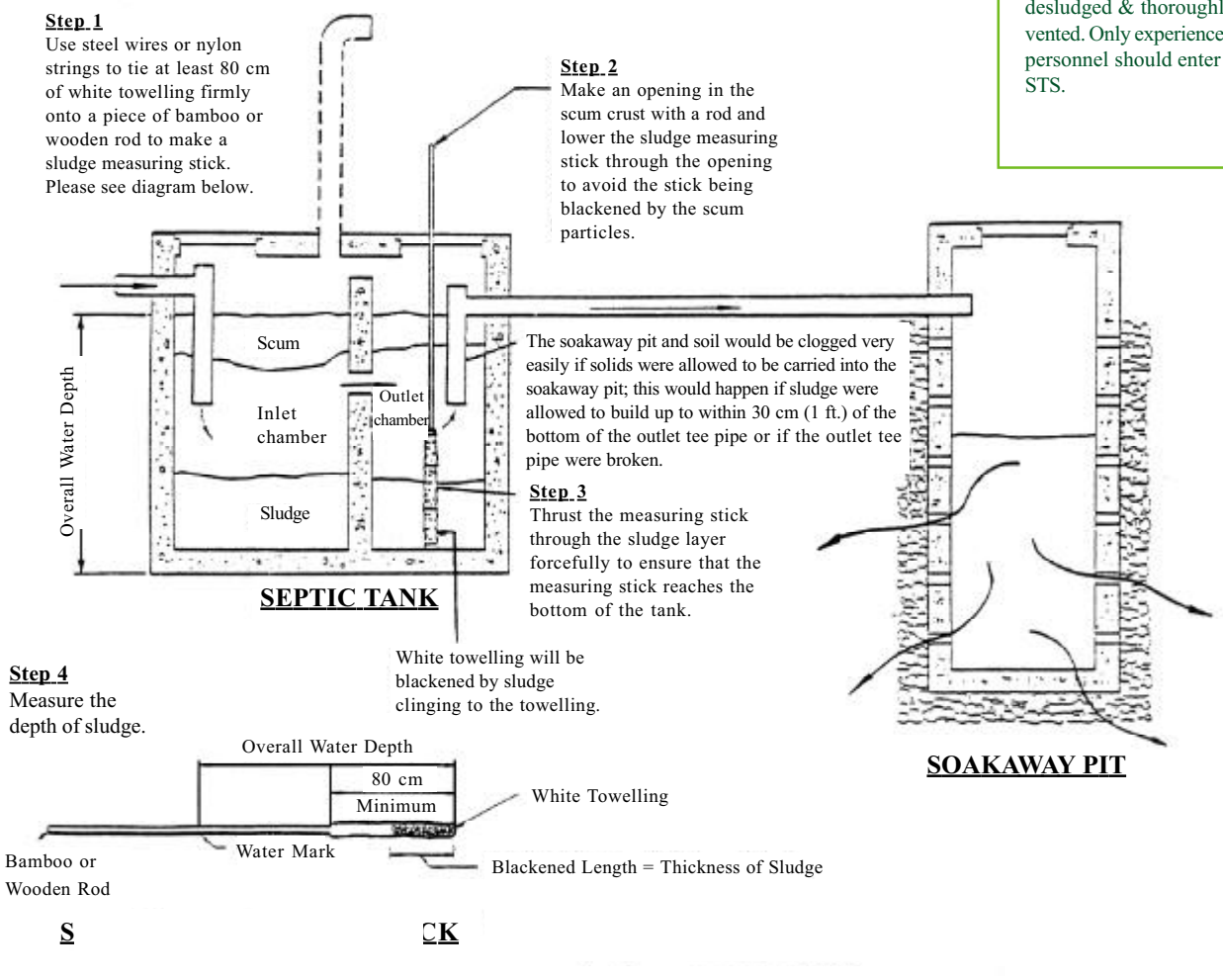
9. Don't deposit excessive oil or chemicals into your STS. Oil will clog up pores in the soil around the soakaway pit. Chemicals are generally toxic to the environment and kill the bacteria (naturally occurring in the STS and the soil) which help to remove the polluting matters in the wastewater.

INSPECT, DESLUDGE AND REPAIR YOUR STS

10. Do inspect your STS and measure the depth of sludge at least once every 6 months. More frequent inspection and desludging might be necessary for heavily used STS' s.

Inspecting Your STS

Safety Measures
NEVER ENTER a STS unless it has been desludged & thoroughly vented. Only experienced personnel should enter a STS.



It is recommended that you hire experienced personnel to regularly inspect your STS under your observation, and to desludge your STS whenever necessary.

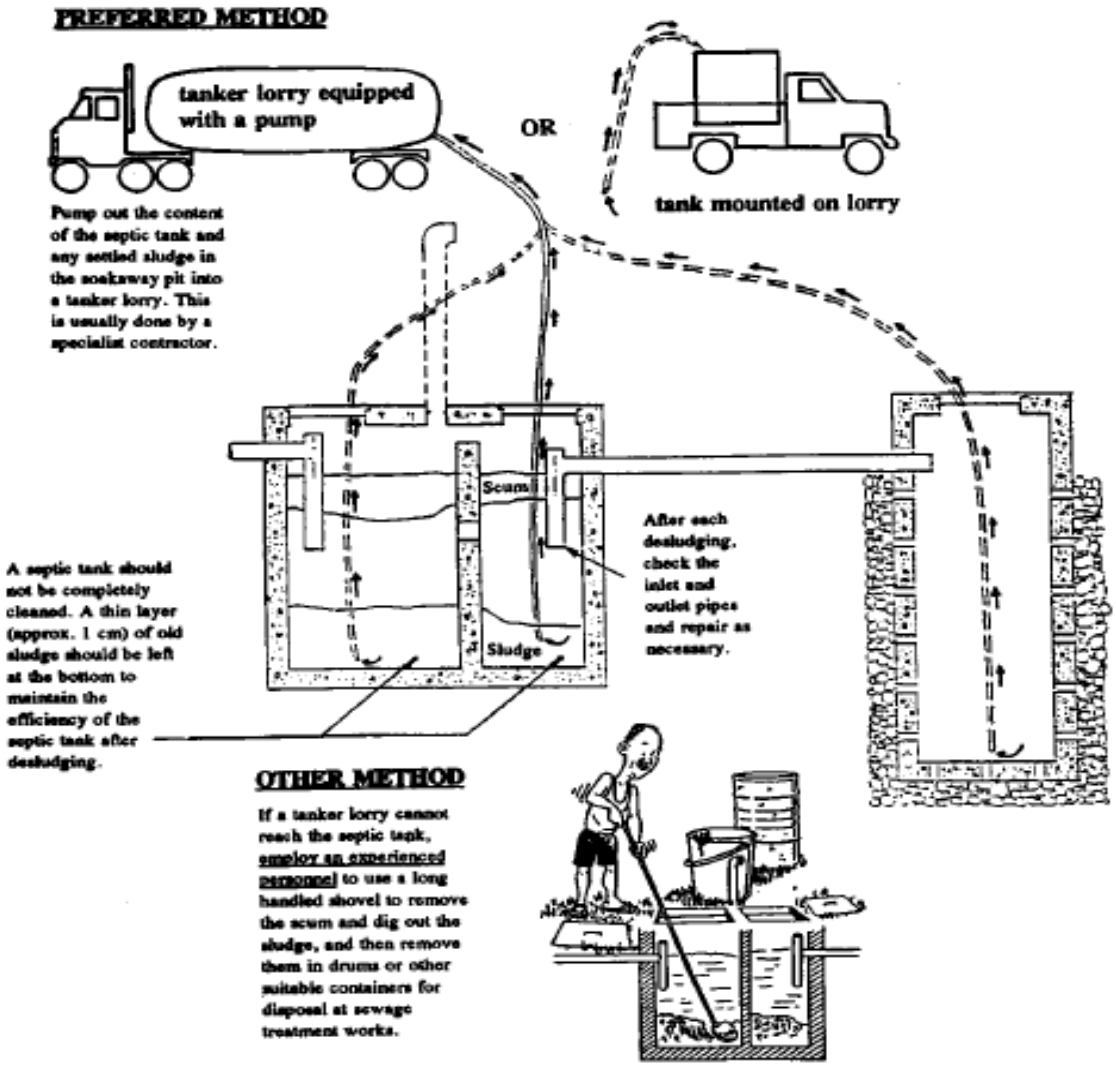
11. Do inspect your STS immediately whenever
    - there is any flooding / overflow from your STS,
    - foul smell becomes more noticeable,
    - your toilet doesn' t flush well or your sink doesn' t drain well.

12. Do desludge your STS whenever

- thickness of sludge exceeds 30 cm (1 ft.) or 1/4 of overall water depth.
- clogging of the septic tank outlet pipe or the soakaway pit or soil is suspected.

Desludging Your STS

NEVER LEAVE YOUR MANOLE COVER OPEN UNATTENDED Your STS is a HAZARDOUS TRAP for anyone to fall in, especially for the young and the elderly。

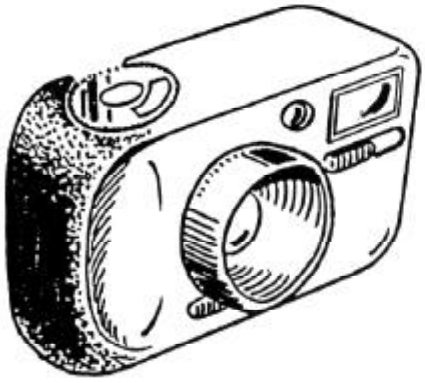


13. Do dispose of by your STS sludge properly. Sludge removed should be transported by specialist contractors to sewage treatment works for disposal. The Food and Environmental Hygiene Department may, subject to the availability of resources, also provide desludging services to private STS on a chargeable basis. For enquiries, pleas refer to the table on page 12.

14. <u>Do</u> inspect if there is any defect in your drainage system or STS after each desludging. If so, repair the defect before resuming discharge into your STS.

Check	Any defects? (Y/N)
Inlet Tee-pipe	
Outlet Tee-pipe	
Vent pipe & screen	
Drain openings and screens	
Drainage pipes	

15. <u>Do</u> keep a record of all inspection, desludging and repair work carried out at your STS. Use the table at the back of this book. A photograph can save a lot of words.



What to do if your STS floods or overflows

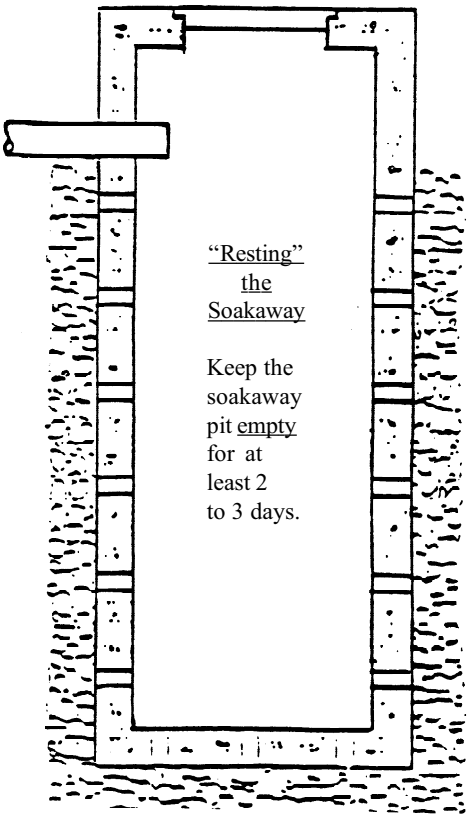
16. Whenever you observe flooding/overflow from your STS, you should:

    Step 1 - Immediately reduce to an absolute minimum the discharges from your showers, baths, toilets and sinks etc.

    Step 2 - Inspect and desludge your STS. Please consider emptying the whole STS. The methods described in paragraphs 10 and 12 should be followed.

    Step 3 - Let your soakaway pit drain out completely and then leave it empty for at least 2 to 3 days for the soakaway pit and the adjacent soil to take a "rest". If the soakaway pit remains full, then you must empty it by pumping. "Resting" can help clogged soakaway pits to recover.

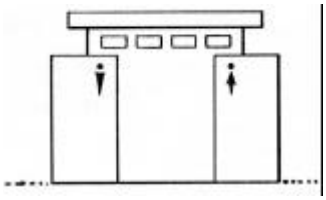
    Step 4 - Continue to minimize water usage after resuming discharge into the STS. Only when satisfied that the STS is working normally, should you return it to normal use. Otherwise, see paragraph 18.



17. If you have had occasional flooding or overflow from your STS, especially after rainfall, you should:
    - reduce water usage and minimize discharge as much as possible,
    - make no, or extremely little, discharge during rainfall and also on the day that follows,
    - check that your water pipes are not leaking and that your water closets are not flushing continuously,
    - check that rainwater cannot enter your STS, and
    - look into extending your STS, if suspected to be undersized.

18. If your STS continuously floods/overflows, and this has started within the first year of using your STS, it is very likely that this is due to undersizing, poor siting and/or poor construction of your STS. If minimizing water usage, desludging and "resting" of the soakaway pit altogether had failed to prevent flooding/overflow from your STS, you should seriously consider:
    - Investigating whether an extended, relocated or reconstructed STS would improve the situation; specialist advice may be useful here. Please see paragraph 24 as well.

    Before improvement to your STS could be made, you should:
    - Use public latrines and public bath-houses as far as possible.
    - Use all practicable means to maintain at an absolute minimum the discharges from your showers, baths, toilets and sinks, etc.
    - Inspect and desludge your STS frequently.



Enquiries on the Location of Public Bath-houses and Desludging Services

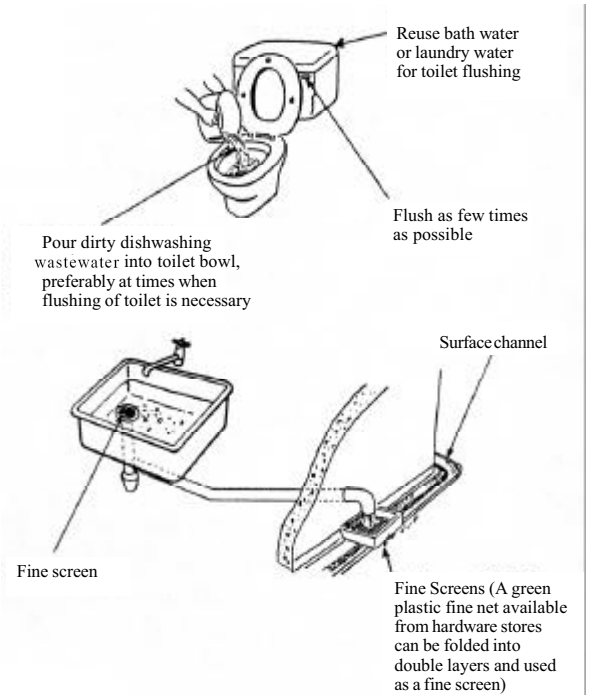
Food and Environmental Hygiene Department Hotline Tel. : 2868 0000

Disposal of sullage

19. For village houses built after 1984, the STS's should have been designed to receive both sullage (i.e. wastewater from a bath, shower, sink or basin) and toilet waste. However, for older village houses, most of the STS's had been designed to receive only toilet waste. For some old village houses, no STS had been provided at all. Sullage from these older village houses is commonly discharged via surface channels to the nearby streams. Disposal of sullage into surface channels can only be tolerated if this does not result in pollution. Where necessary, the EPD may require the responsible householder to install proper facilities (e.g. a new STS) or extend the existing STS for the disposal of both toilet waste and sullage.

If your STS do not receive sullage

20. If your STS do not receive sullage, you should adopt all practicable means to reduce the amount of pollutants in the sullage that you discharge into surface channels.
    You should:
    - discharge only wastewater containing very little pollutants via fine screens into surface channels,
    - dispose of dirty dishwashing wastewater via toilet bowl into your STS, and
    - minimize your water usage to ensure that your STS is not overloaded.



21. You should properly maintain your surface channels and ensure that your wastewater discharge will not pond in surface channels or fields nearby and become a source of pollution.
22. Sullage discharged into surface channels shall not contain any waste or polluting matter such as faeces, blood and waste from slaughtering livestock, sludge or solid refuse of any kind, food residues or other waste that are liable to form scum or deposit. Only relatively clear wastewater reasonably free of chemicals, visible solids, oil and foam, and discharged via fine screens, may be permitted to be disposed of into surface channels.

If you do not have a STS

23. If you do not have a STS and you are not served by a communal sewer, you should:
    - NOT install or use a flushing toilet in your house,
      (see paragraph 24 if you want to use a flushing toilet)
    - use public latrines and public bath-houses as far as possible,
    - dispose of night soil properly, e.g. to public latrines,
    - put food residues, etc., into your garbage bin,
    - dispose of sullage via fine screens, and remove the screenings into your garbage bin, and
    - pay special attention to paragraphs 21 and 22 above.

    If you have or are planning for a flushing toilet in your house, you should install a proper wastewater disposal system (e.g. a STS).

Precautions when planning for a new STS

24. Remember "PREVENTION IS BETTER THAN CURE".

Before you decide to construct a new STS

either to serve your new village house,
or to replace your problematic STS,
or to extend your undersized STS,
or to match your plan to install flushing toilets and shower etc. in your house, you should:

(a) ensure first that there is no communal sewer available into which you could connect (see paragraph 35). Approach nearby developments to consider the possibility of a joint connection to communal sewer being made;

(b) examine the feasibility of a STS, and carry out a soil percolation test before deciding to construct a STS;
(Note : A STS is not feasible in areas
i) prone to flooding during storms,
ii) with high groundwater table, OR
iii) with impermeable soil.)

(c) locate and size your STS suitably, and allow adequate land for its construction , i.e.
i) do not locate your STS near streams, wells, retaining walls, etc., or beneath your house,
ii) size your STS according to your anticipated maximum discharge loading and the absorption capacity of the local soil (based on soil percolation test results obtained beforehand), and
iii) locate your STS in an open space with easy access for desludging;

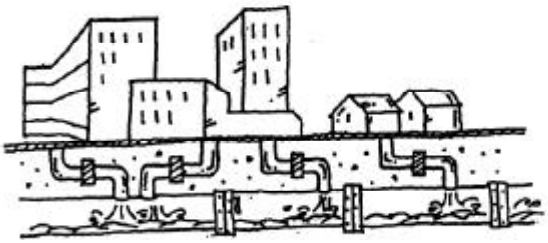
(d) investigate the possibility of constructing a communal STS or communal sewage treatment plant; (This will probably help to alleviate problems associated with scarcity of land for individual STS' s, poor soil permeability and sites too close to streams etc.); and

(e) SEEK SPECIALIST ADVICE WHENEVER YOU ARE IN DOUBT.

Connecting to communal sewer

25. The most effective and reliable way to dispose of wastewater is by connecting to communal sewers leading to government treatment facilities.

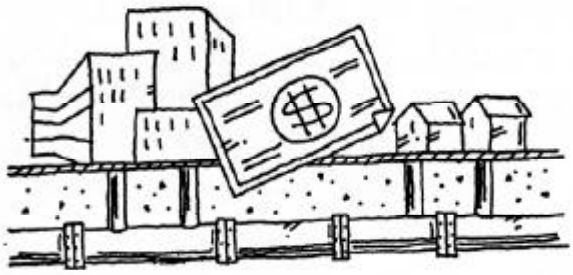
    By connecting to communal sewers, you will:
    - enjoy a safer and healthier living environment;
    - stop pollution caused by malfunctioning STS;
    - not need to operate, maintain and monitor STS; and
    - comply with pollution control legislation easily.



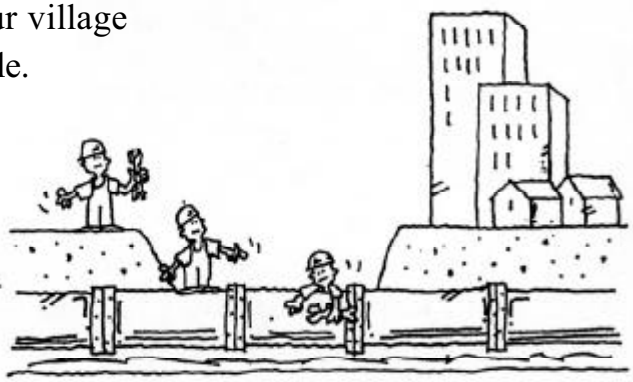
26. The Government has plans to provide new sewers and improve existing communal sewers in the territory. Most premises not currently served by communal sewers will gradually be provided by one.

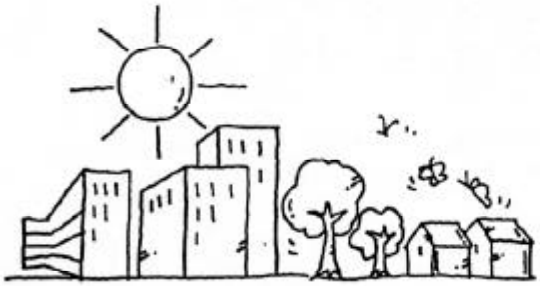
27. When communal sewers are provided in the vicinity and ready for connection, EPD may send you a notice requiring you to construct appropriate terminal manhole and other pipework for conveying all your wastewater to the communal sewer before a specified date.

28. The responsible householder is to construct and pay for the terminal manhole and any pipework leading from the village house to the terminal manhole. The Government will provide and pay for the new communal sewers and the sewer linking the terminal manhole to the communal sewer.



29. You should properly maintain the terminal manhole constructed and any pipework leading from your village house to the terminal manhole.





Legal requirements under the Water Pollution Control Ordinance (WPCO)

30. The introduction of the Water Pollution Control Ordinance has allowed the government to ensure that everyone becomes responsible for his/her part in protecting the environment of Hong Kong. This Ordinance operates through a licensing system to control the discharge of sullage and the use of STS's.

31. If you possess a STS, or discharge sullage, it is advisable for you to obtain a licence from the EPD, and comply with the licence conditions in order to avoid any conviction for polluting the environment. However, a licence will not be required if your house is connected to communal sewers.

32. EPD will inspect STS's and associated drainage systems to ensure that they are properly used, desludged and maintained. EPD might issue a warning letter to the responsible householder requiring improvements to the STS and associated drainage systems, including where necessary the installation of a new wastewater disposal system. Should the responsible householder fail to provide the necessary improvements as required, EPD may take prosecution action.

33. When communal sewers are available in the vicinity, EPD may issue a notice requiring the responsible householder to connect all wastewater generated from the village house to the communal sewer. It will be an offence if the householder does not comply with the requirement in the notice.

Further information

34. For further enquiries and collection of WPCO licence application form, you can contact Regional Offices of EPD or visit the EPD Website.

Regional Office (East)
5/F Nan Fung Commercial Centre,
19 Lam Lok Street,
Kowloon Bay, Kowloon.
Tel. : 2755 5518
Fax : 2756 8588

Regional Office (South)
2/F Chinachem Exchange Square,
1 Hoi Wan Street, Quarry Bay, Hong Kong.
Tel. : 2516 1718
Fax : 2960 1760

Regional Office (West)
8/F Tsuen Wan Government Offices,
38 Sai Lau Kok Road,
Tsuen Wan, New Territories.
Tel. : 2417 6116
Fax : 2411 3073

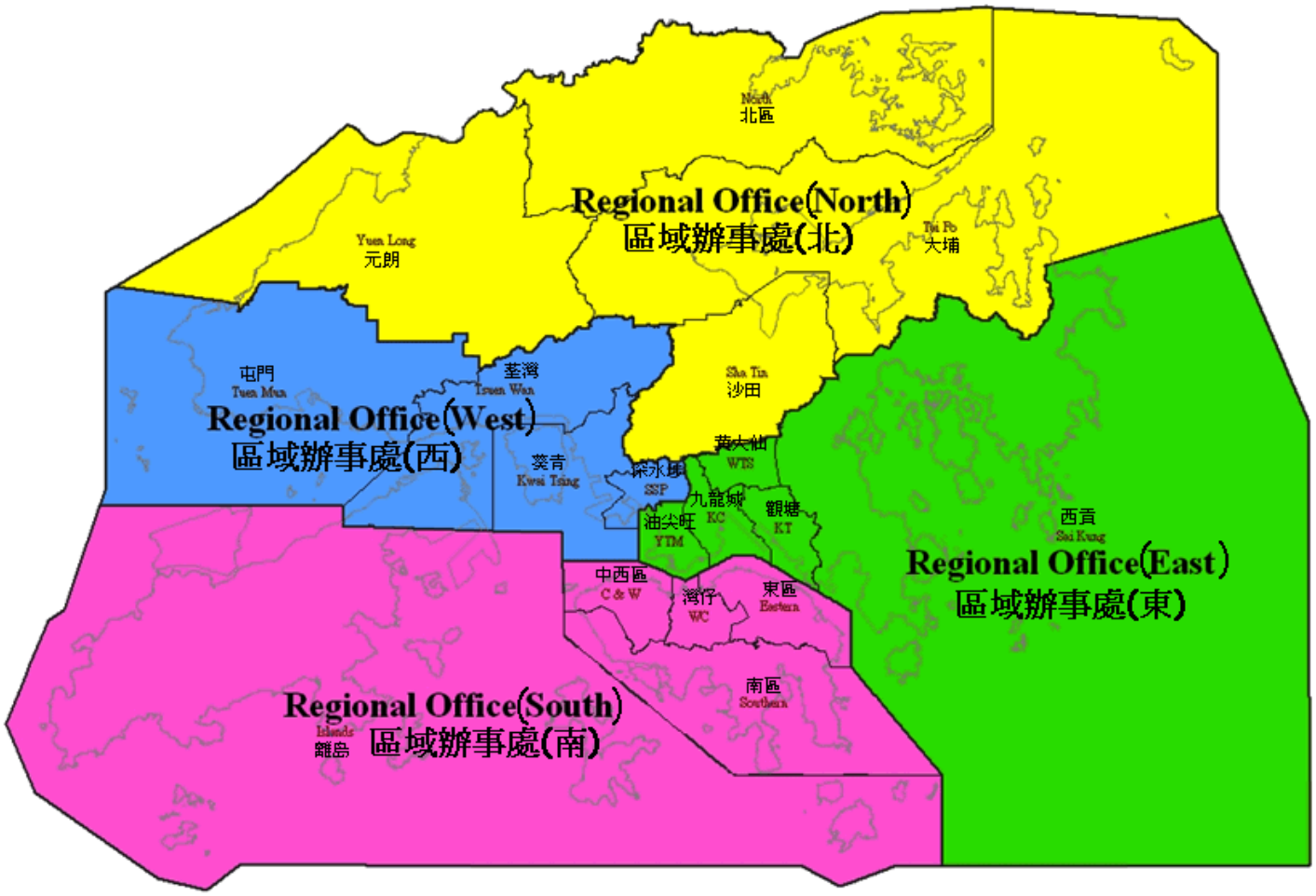
Regional Office (North)
10/F Shatin Government Offices,
No.1 Sheung Wo Che Road,
Shatin, New Territories.
Tel. : 2158 5757
Fax : 2685 1133

The map on Page 19 shows delineation of respective Regional Offices.

Application forms can also be obtained from the following District Offices: Southern District Office, Stanley Sub-office, Islands District Office, Mui Wo Sub-office, Cheung Chau Sub-office, North District Office, Sai Kung District Office, Tsueng Kwan O Sub-office, Sha Tin District Office, Tai Po District Office, Tuen Mun District Office and Yuen Long District Office.

35. For information on existing communal sewers, you can contact the following divisions of the Drainage Services Department :

	Address	**Telephone**	**Fax**
Hong Kong and Islands Division	42/F, Revenue Tower, 5 Gloucester Road, Hong Kong	2594 7175	2827 6657
Mainland South Division	15/F, Kowloon Government Offices, 405 Nathan Road, Kowloon	2300 1441	2771 9640
Mainland North Division	14/F, Kowloon Government Offices, 405 Nathan Road, Kowloon	2300 1441	2770 4761


North
北區
Regional Office(North)
區域辦事處(北)
Yuen Long
元朗
Tai Po
大埔
屯門
Tuen Mun
荃灣
Tsuen Wan
Regional Office(West)
區域辦事處(西)
Sha Tin
沙田
葵青
Kwai Tsing
深水埗
SSP
黃大仙
WTS
九龍城
KC
觀塘
KT
油尖旺
YTM
西貢
Sai Kung
Regional Office(East)
區域辦事處(東)
中西區
C & W
灣仔
WC
東區
Eastern
南區
Southern
Regional Office(South)
Islands
離島
區域辦事處(南)

RECORD OF INSPECTION DESLUDGING AND REPAIR WORK

INSPECTING	

Date of inspection	Inspected by whom	Sludge thickness (see P.8)	Remarks on any flooding/ overflow/clogging observed (see P. 11 & 12)	Date of desludging
e.g.				
03/01/92	Chan Tai-man	30 c.m. (or 1 ft.)	No problem	20/01/92

DESLUDGING			REPAIRING		
Desludged by whom	Desludging method (see P. 9)	Sludge disposal (see P. 9)	Defects observed (see P. 10)	Date of repairing	Repaired by whom
ABC Desludging Co.	Pump	Lorry No. AB 1234 to Sai Kung STW	Outlet tee-pipe in septic tank is rotten	22/01/92	Man Kee Co.

RECORD OF INSPECTION DESLUDGING AND REPAIR WORK

INSPECTING	

Date of inspection	Inspected by whom	Sludge thickness (see P.8)	Remarks on any flooding/ overflow/clogging observed (see P. 11 & 12)	Date of desludging

DESLUDGING			REPAIRING		
Desludged by whom	Desludging method (see P. 9)	Sludge disposal (see P. 9)	Defects observed (see P. 10)	Date of repairing	Repaired by whom

Some Immediate Action to take

1. Is your house connected to a communal sewer?
   If not, please keep this book in your house and follow its recommendations.

2. Do you have a STS?
   If not, please read paragraphs 19 and 23 carefully again now!

3. Does your STS receive sullage?
   If not, please read paragraphs 19, 20, 21 and 22 carefully again now!

4. Have you inspected your STS in the last 6 months?
   If not, please read paragraph 10 again and inspect now!

5. Have you applied for a WPCO licence?
   If not, please read paragraphs 30, 31 and 32 carefully again now!

6. Does your STS flood / overflow occasionally?
   If so, please read paragraph 17 carefully again now!

7. Does your STS flood / overflow continuously?
   If so, please read paragraph 18 carefully again now!

8. Are you planning for a new STS?
   If so, please read paragraphs 24 and 35 carefully again now!

PLEASE DON'T DELAY ATTENTION TO YOUR STS PROBLEMS!

List of contractors undertaking inspection, desludging and repair work

Name	Tel. No.	Services provided

Remember

INSPECT YOUR STS ONCE EVERY 6 MONTHS