

# KEEPING OUR STORMWATER CLEAN



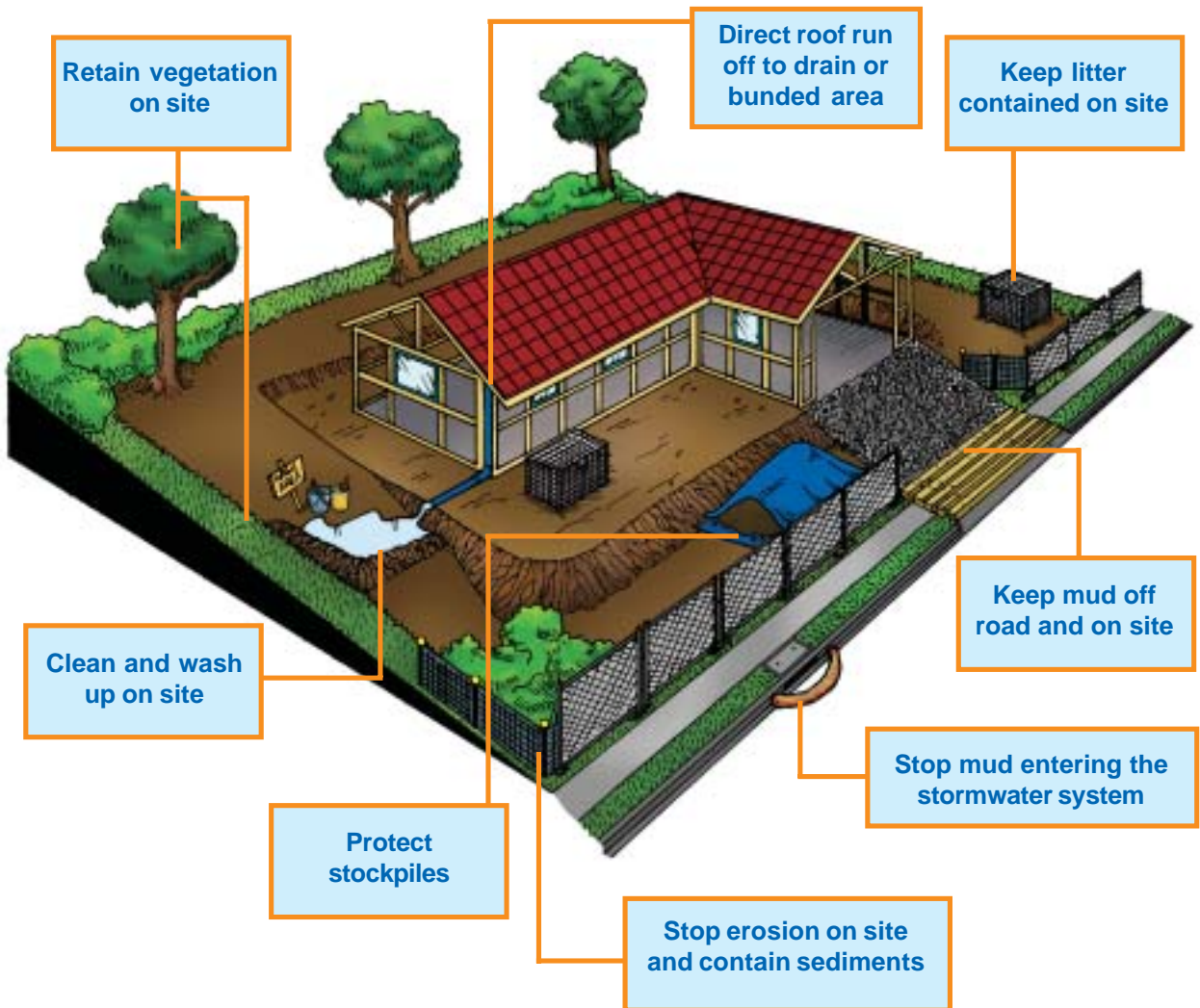
## A BUILDER'S GUIDE

Information to help you control sediment and litter from your building site and comply with Council and State regulations

## ACKNOWLEDGEMENTS

This revised booklet was originally produced with the support of the Victorian EPA, Melbourne Water, Cities of Kingston, Casey, Hume, Melbourne, Moreland and Moonee Valley.

**Check Council requirements and plan before you start work on site**



**Supplier information for sediment & erosion control on page 3**

# CONTENTS

## 6 SITE RULES TO KEEP STORMWATER CLEAN



### SITE RULE 1

Check Council requirements and plan before you start work on site.

..... Page 4



### SITE RULE 2

Stop erosion onsite and contain sediments.

..... Page 6



### SITE RULE 3

Protect stockpiles.

..... Page 12



### SITE RULE 4

Keep mud off road and on site.

..... Page 16



### SITE RULE 5

Keep litter contained on site.

..... Page 18

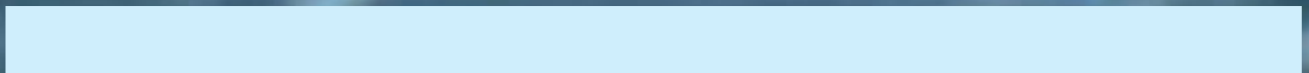


### SITE RULE 6

Clean and wash up on site.

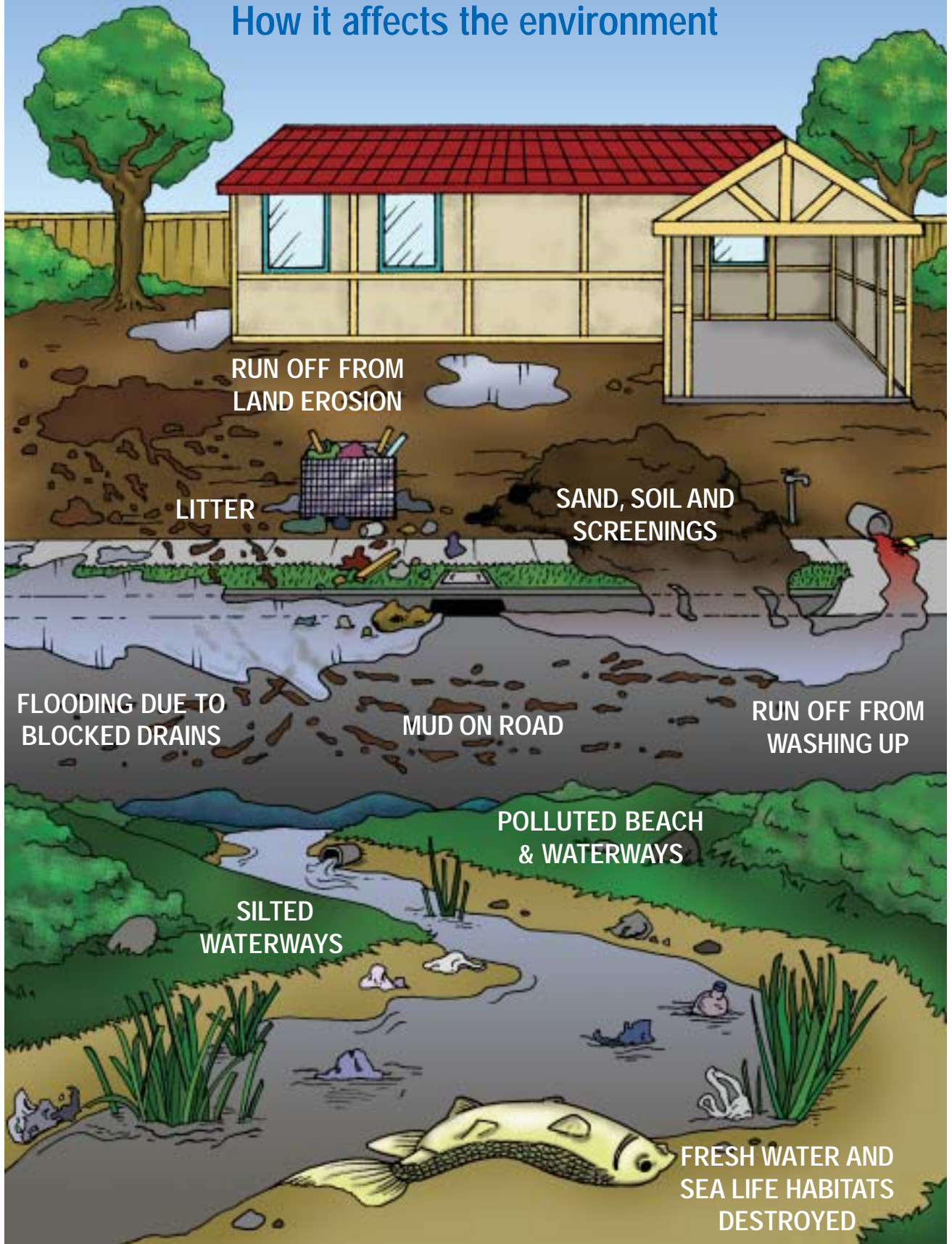
..... Page 21

Use the Site Management Plan..... Page 23



# PROBLEMS ON OUR BUILDING SITES

How it affects the environment



# WHY DO I NEED TO PROTECT OUR ENVIRONMENT?

## It's the law!

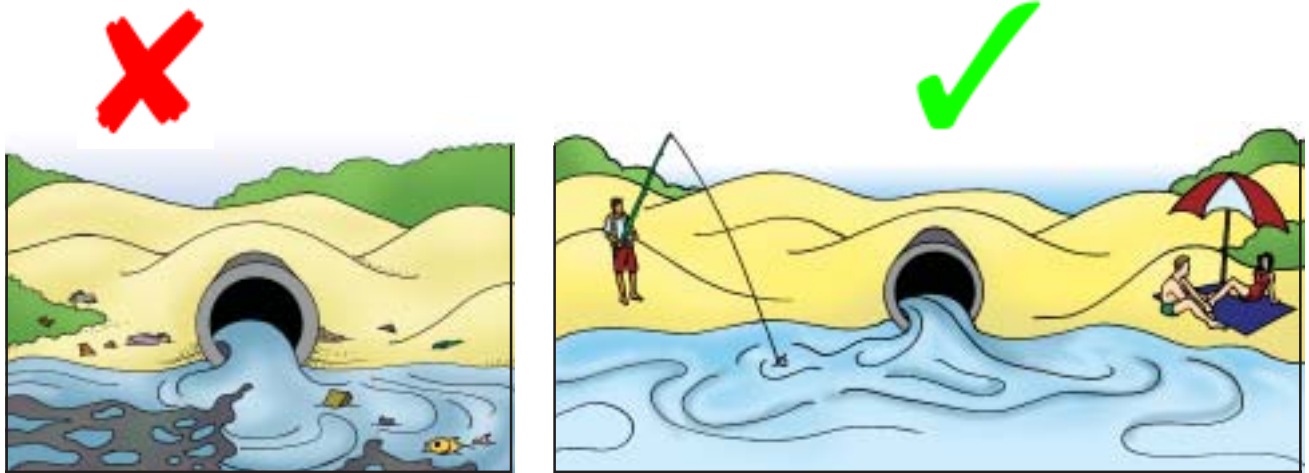
Sediment from building sites can pollute stormwater. There are State and local council laws which make this an offence.

The developer or person managing the building site has the responsibility of making sure that the stormwater is not polluted.

**Penalties apply for polluting stormwater.**



To enjoy using our environment - now and in the future



**Stormwater is not treated and carries pollution to local waterways and bays. Pollution in our stormwater can lead to short and long term damage to our environment.**

## To benefit builders

**The site looks good** (which is good for attracting new customers) **and you'll be helping to protect our environment.**

**The site has fewer hazards.** A well organised site has less loose material lying around causing a hazard. This reduces health and safety issues on a building site.

**Downtime is reduced.** A well managed and organised site is more efficient. This saves time and money.



# USEFUL SUPPLIER INFORMATION



This information is provided for helpful contact details only. The companies are not listed in any particular order and are not necessarily recommended over others that may provide similar services.

## SEDIMENT CONTROL

Approximate Price:  
Geofabric fencing  
100 m roll from \$55 to \$130  
stakes \$12 for 10  
Filter socks unfilled: 2 m \$4.50 filled \$8 - \$25

**Geofabrics Australasia**  
03 8586 9111 [www.geofabrics.com.au](http://www.geofabrics.com.au)  
Products: silt fencing

**Southern Geosynthetics Supplies**  
0419 478 238 [www.geosynthetics.com.au](http://www.geosynthetics.com.au)  
Products: Silt fences, Silt Sausages

**Statewide River & Stream Management**  
03 9702 9757 [www.stateplanthire.com](http://www.stateplanthire.com)  
Products: silt fence, stakes, silt logs  
Installation service and site kits  
Approx cost: \$220 for 20 m frontage installed, \$88 self installation

**Treemax**  
03 98787 4111 [www.treemax.com.au](http://www.treemax.com.au)  
Products: filter fence, silt worm, silt sock

**Zerosion**  
0408 351 566 [www.zerosion.com.au](http://www.zerosion.com.au)  
Products: silt fence installation  
Approx cost: \$215 for up to 20 m frontage

## STABILISED DRIVEWAYS

For aggregate look under sand, soil and gravel in the Yellow Pages  
Recycled aggregate available from major suppliers.

## TEMPORARY DOWNPIPE

Available from major plumbing suppliers  
**Art Plastic** 25 m rolls of temporary plastic downpipe  
approx: \$25

**Temporary Flexible Downpipe**  
03 9786 3711 [www.tfd.com.au](http://www.tfd.com.au)  
\$135 per kit - does 2-3 16 sq houses

## OTHER EQUIPMENT

**Coates Shorco Sykes** 131994  
Supply: silt fence \$125 100 m  
Hire: Rumble Grids \$180 p/week for 2 panels  
Hire: Environmental settlement tanks 4 m tank \$542 p/week

## PORTABLE TOILETS

See Toilets – Portable in the Yellow Pages

## TEMPORARY FENCING

See Fencing Contractors in the Yellow Pages  
**Australian Temporary Fencing** 131716  
**Victorian Temporary Fencing** 03 9484 4000

## BRICK AND TILE CUTTING

**Slop Mop Recycling Products**  
[www.slopmop.com.au](http://www.slopmop.com.au) 0418 825 301 **Brikasaurus**:  
capture and recycle waste water for brick and tile cutting operations.  
**Slopmop**: water delivery & waste clean up system for use behind concrete saws and grinders.

## Useful information is available from:

**Master Builders Green Living Builders**  
[www.mbav.com.au](http://www.mbav.com.au)  
**HIA GreenSmart Program**  
[www.greensmart.com.au](http://www.greensmart.com.au)  
**Keep Australia Beautiful Victoria – CleanSites Program**  
<http://www.kabv.org.au/>  
**Victorian Litter Action Alliance**  
<http://www.litter.vic.gov.au>  
**Environment Protection Agency Victoria**  
[www.epa.vic.gov.au](http://www.epa.vic.gov.au)  
See Publication 981 – Reducing stormwater pollution from construction sites  
Melbourne Water  
[www.melbournewater.com.au](http://www.melbournewater.com.au)



# SITE RULE 1

Check Council requirements and plan before you start work on site.



## Questions to ask BEFORE you start

**Planning, BEFORE you start a job, will make a big difference to how well you manage your site. Check Council requirements for site management. Complete a site management plan (one can be found at the back of this booklet).**

### Where is the lowest point on the site?

Water always runs to the lowest point. It is important to know where this point is when planning your site. It will affect where you put your crossover, stockpile materials and sediment fence. Leave a buffer of vegetation along the lowest boundary.

### Where will I put the crossover?

Try to put the crossover as far away from the lowest point as possible. As water runs to the lowest point it is more likely to be wet and muddy. [See Page 16.]

### Where will I keep my stockpile?

Stockpiles are best kept on site, as far away from the lowest point as practical. [See Page 12.]

### Where will I build my sediment control fence?

Sediment control fences should be built on the lowest side/s of a site prior to erecting a temporary fence. A flat site may not need sediment control fences. [See Page 9.] These are a primary management measure to keep sediment on site.

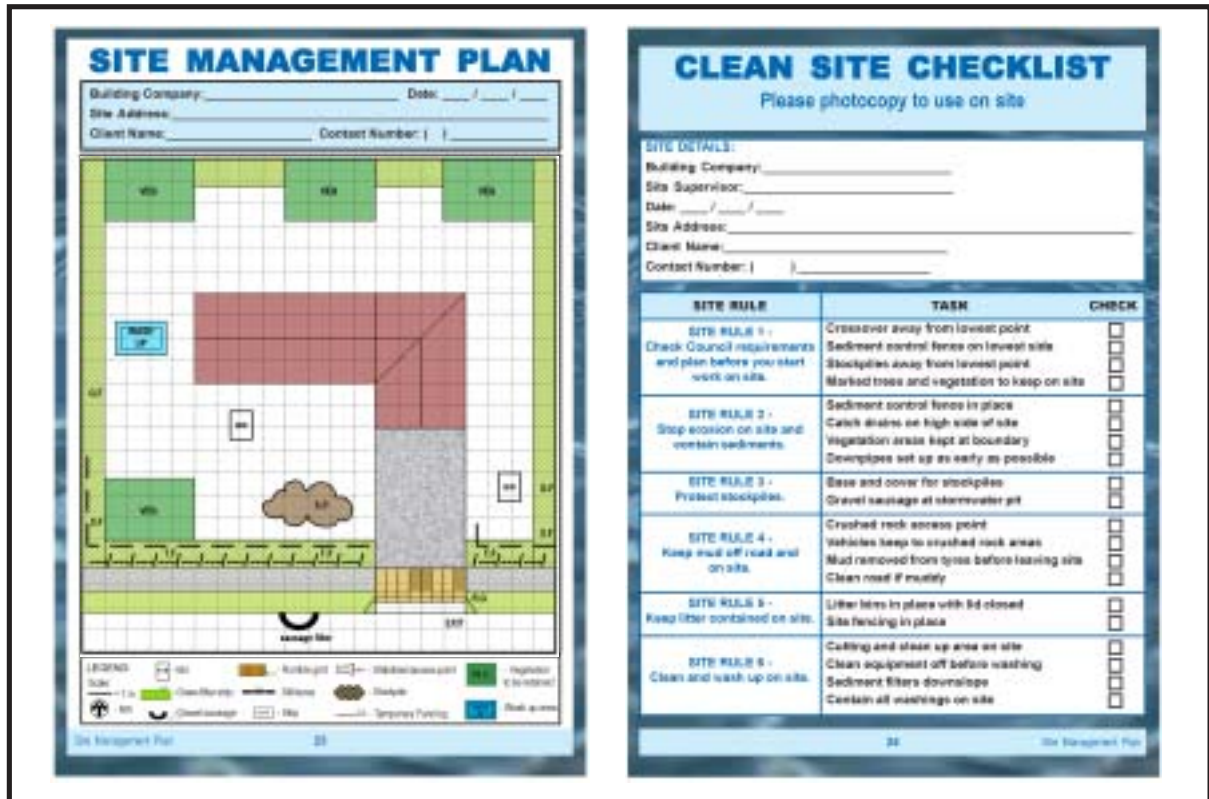
### Which trees and vegetation will be kept on site?

Rope or fence off the areas you are going to keep. Keeping vegetation such as grassed areas will help to prevent damage to the surface of the site later on and may trap sediment. [See Page 7.]

### Why fence my site?

Many councils require sites to be fenced. Site fencing helps to keep building activities to the site, helps stop movement of litter, and helps to keep a site safe by stopping members of the public wandering on site. [See Page 20.]

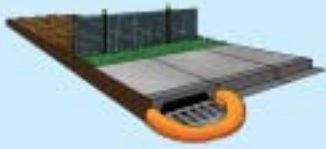
# SITE READY TO START JOB



For copy of plan & checklist photocopy pages 23 & 24.







## SITE RULE 2

Stop erosion and keep sediment on site

### Why is erosion a problem?

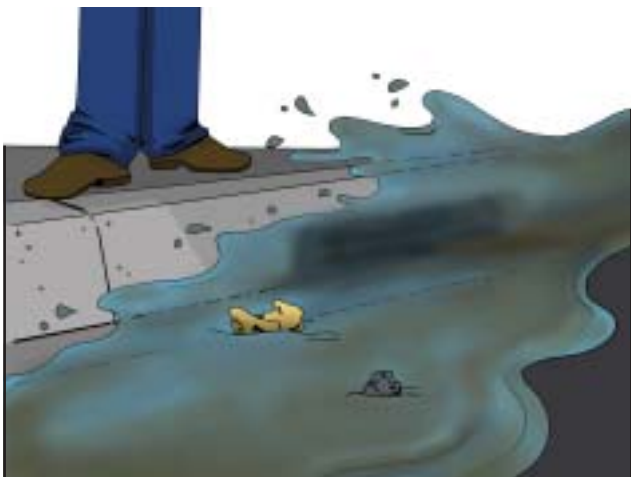
Sediment escaping from building sites can:



1. Make roads and footpaths slippery for vehicles and pedestrians, increasing public liability risk.



2. Enter the stormwater system and make stream and river water cloudy which can kill plants and animals in creeks and the bay.



3. Cause blockages to the stormwater system including the side entry pit and pipes, increasing the chance of flooding and requiring regular cleaning.

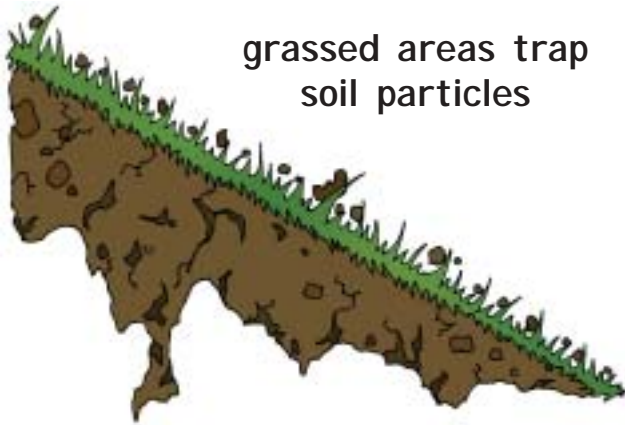


4. Overload and clog local stormwater filtration systems such as rain gardens and swales.

# METHODS TO CONTROL EROSION

**Control Method 1** - Keep areas of vegetation as a buffer strip at the site boundary.

**To prevent sediment leaving site use existing grassed areas and a sediment control fence.**

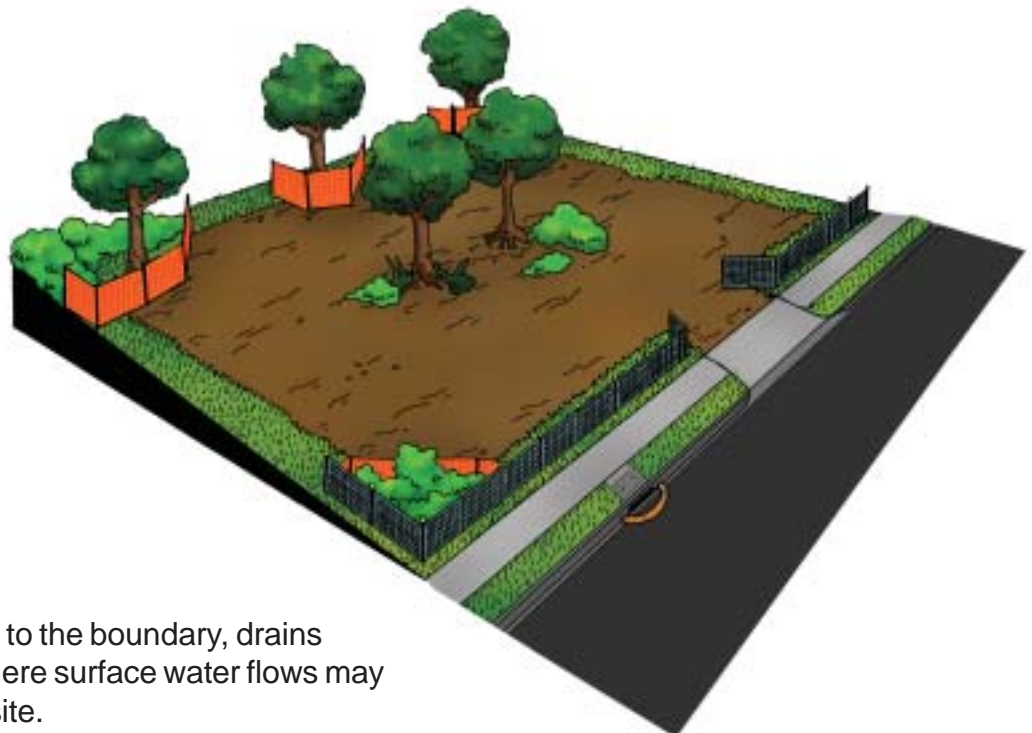


grassed areas trap soil particles

Vegetation helps protect the soil from the effects of rain and surface water by:

- Slowing the flow of water across the ground. Fast water is able to carry more soil particles off site
- Holding the soil together and minimising erosion
- Acting as a filter to trap soil particles.

Decide what areas of vegetation you are going to keep on site. Mark and protect trees, shrubs and grassed areas that you are keeping. Then apply for the relevant permits to remove vegetation.



Protect areas close to the boundary, drains and gutters, and where surface water flows may carry sediment off site.

## Control Method 2 - Early downpipe connection



Connecting downpipes to the stormwater or onsite detention system has a number of benefits:

- Less drainage problems on site
- Less mud on site after rain
- A safer site
- Reduce damage to building foundations
- Less downtime after storms
- Projects get finished sooner.

**Aim to have the downpipes connected as soon as the roof is installed (temporary or permanent).**

## Control Method 3 - Pipe roof water onto a grassed or banded area.

If you cannot connect to the stormwater system, pipe the water away from the building onto a vegetated area where there is good ground cover or to a banded area.

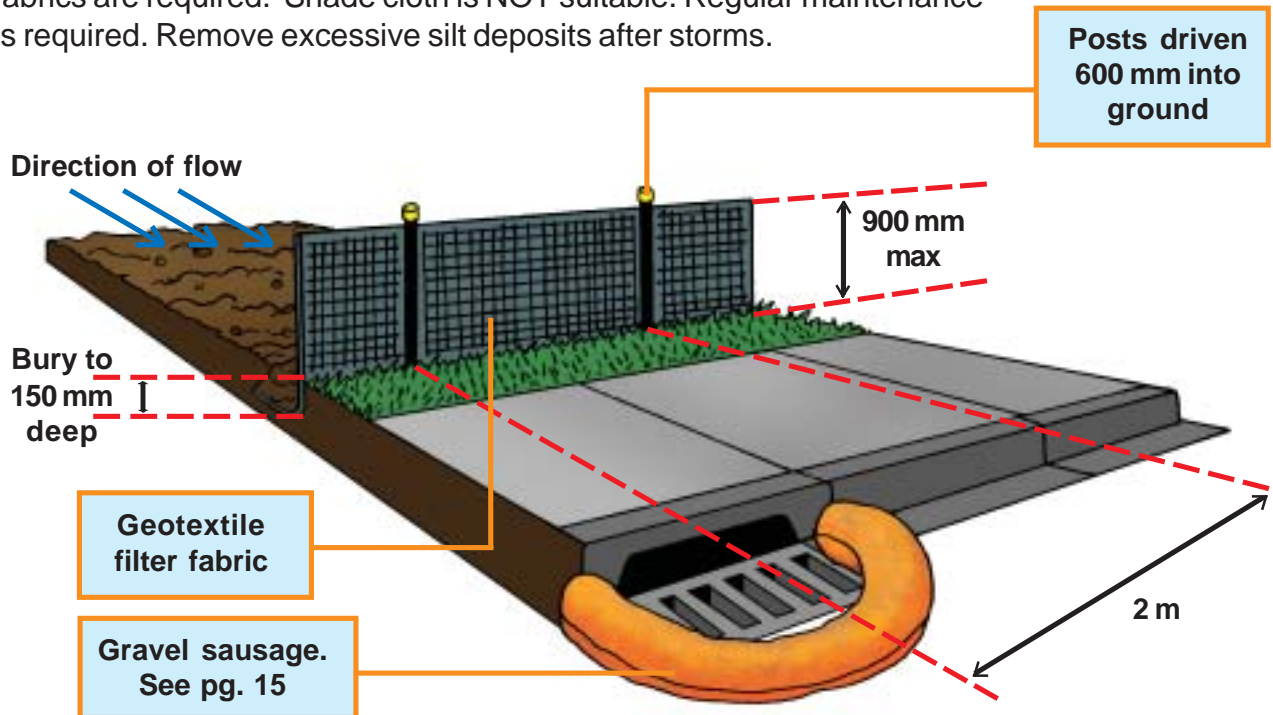


This lets water seep into the ground with less damage to the surface of the soil.

# METHODS TO CONTAIN SEDIMENT ON SITE

## Method 1 - Sediment Control Fences

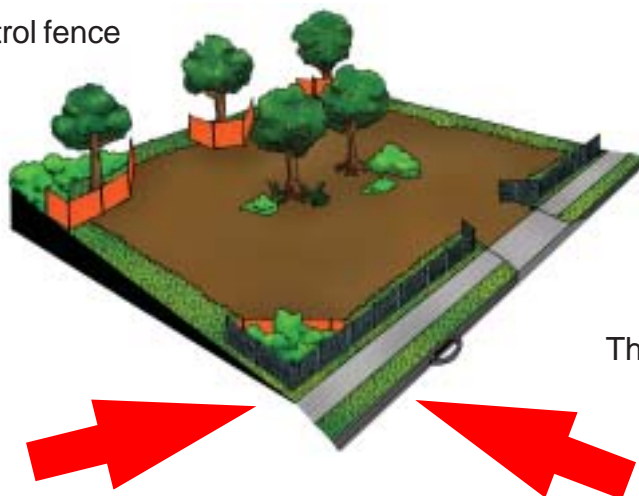
Sediment control fences stop sediment from being washed off site. The fence allows muddy water to pond behind it and for sediment to settle as the water slowly filters through. Geotextile fabrics are required. Shade cloth is NOT suitable. Regular maintenance is required. Remove excessive silt deposits after storms.



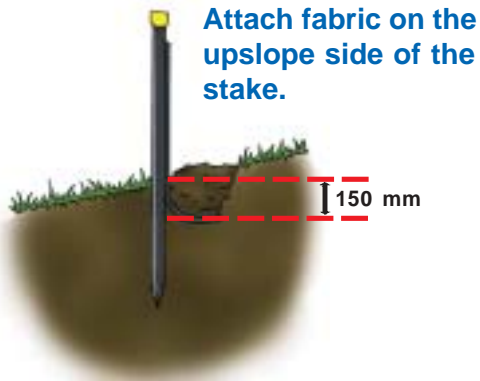
## TO BUILD A SEDIMENT CONTROL FENCE:

### a) Identify the low point of site.

Place sediment control fence along boundaries where the low point is.



This is the point where the land will allow water to carry sediment off the building site.



**b) Dig a trench along the fence line before temporary site fencing is installed.**

The trench will be used to bury the base of the sediment control fabric.

The trench should be 150 mm deep.



**c) Put in 1500 mm wooden posts (38 mm) or star pickets.**

Put 1.5 m star pickets at a maximum of 2 m apart and 600 mm deep.

Put 1.5 m wooden posts (38 mm) at 1.2 m intervals (max 2 m) and 600 mm deep.

**d) Fix geotextile to posts**

Geotextile material allows water to pass through but traps sediments.

Use cable ties or staples to attach the geotextile to the upslope side of the fence posts.

Only join fabric at the pickets with a 150 mm overlap (wrap around post).



**e) Spread volume of water.**

Put a star picket 1.5 m upslope of the others every 20 m (if the fence is longer than 20 m). This spreads the volume of water that flows through each section of fence.

Turn ends up slope to allow for ponding.



## Method 2 - Control dust and slurry from cutting

A large amount of dust can be made from cutting materials such as concrete, bricks and tiles. When mixed with water this material can be turned into slurry and washed into waterways. Cement changes the acidity of water which may then kill water plants and animals. The following methods will help keep this waste on site and out of the waterways:



### a) Cut materials on site

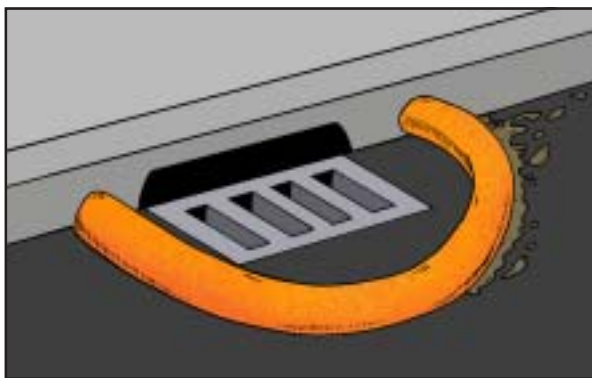
Choose a set area to do all your cutting. This area should be on the building site and away from all stormwater drains.

Equipment is available that captures water used in the cutting process (see page 3).



### b) Put sediment control filters downslope

Sediment logs should be placed downslope to catch cutting slurry. A back-up sediment fence may also be used.



### c) Use a gravel sausage or sediment log

When cutting must take place near stormwater drains, use gravel sausages or sediment logs.

Alternatively, you can buy sleeves from geotextile companies and fill these with sand.

Always clean up and correctly dispose of captured sediment.



### d) Clean up when finished

When you have finished cutting, clean up your equipment in the cutting area.

Use a broom to clean up and get rid of the slurry where it can't get into the stormwater system. Dispose of in waste container

**DO NOT HOSE THE SLURRY AWAY**



# SITE RULE 3

## Contain stockpiles on site

### Why are sand, soil and screenings a problem?

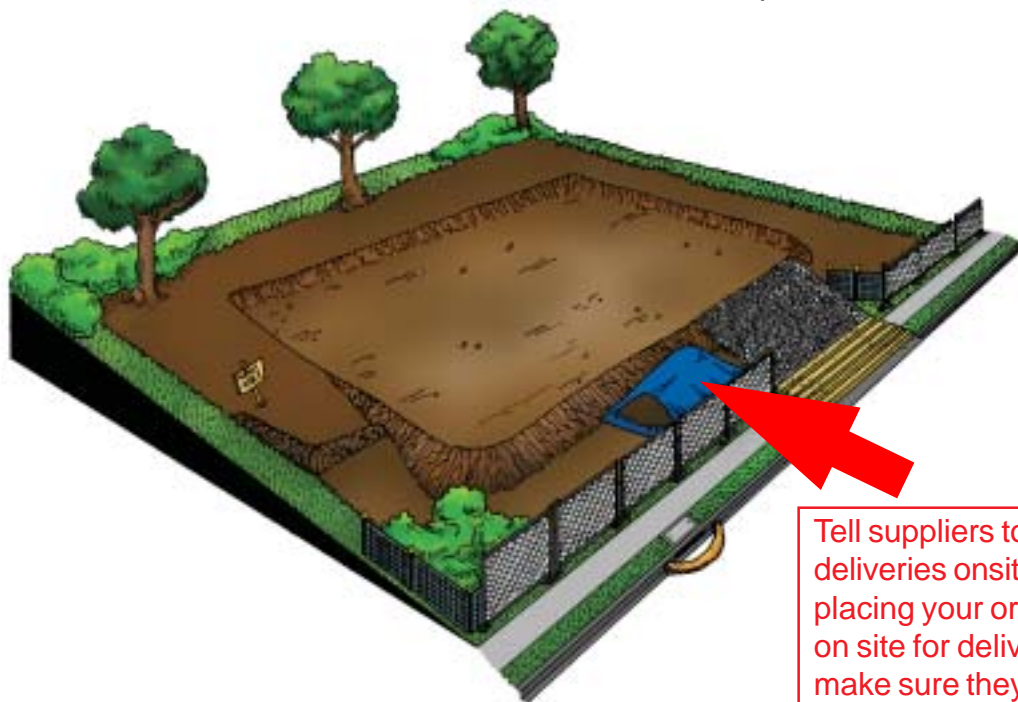


Sand, soil, screenings, dust or sludge from concrete and brick cutting, and other materials escaping from building sites can cause many problems.

Putting stockpiles such as sand, gravel, topsoil and mulch across footpaths and roads will cause a hazard to both vehicles and pedestrians.

Sediment can smother stormwater filtering systems including swales and raingardens.

Stockpiles should be stored on site, not on footpaths or roads.

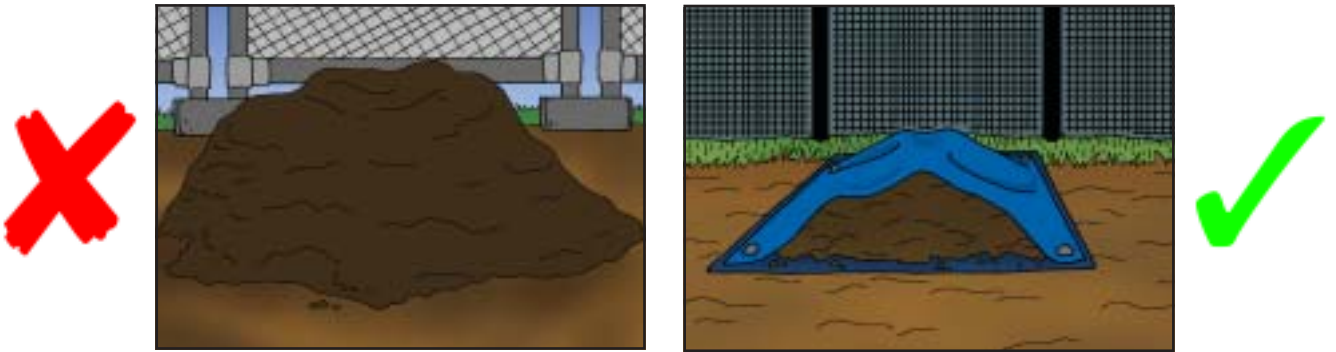


Tell suppliers to place deliveries onsite when placing your order or be on site for deliveries to make sure they are put in the right place.

## Stockpiles not stored properly can get washed or blown away and pollute the stormwater.

This is particularly true of stockpiles that:

- Are high
- Have steep sides
- Are put on hard surfaces where they can be blown or washed away.



## KEEPING STOCKPILES ON SITE

Place the stockpile in a designated area on site, and upslope of the sediment control fence.

If exposed for some time, stockpiles should be covered with a tarp.



In some cases it may be impossible to store stockpiles on site. In this case, a different set of control methods will be used.



# WHEN UNABLE TO STORE STOCKPILES ON SITE

You may have to store a stockpile off site (although never on the footpath, gutter or road). Contact the council to make sure that you have the appropriate council permits.

The council will tell you how stockpiles stored off site are to be managed. Materials may be stored on tarps or on pallets. Containers such as rubbish skips with opening sides that you can get into easily are a good idea.



**Material must not get into drains, gutters or the stormwater system**

The following control methods can be used when storing materials or working off site.

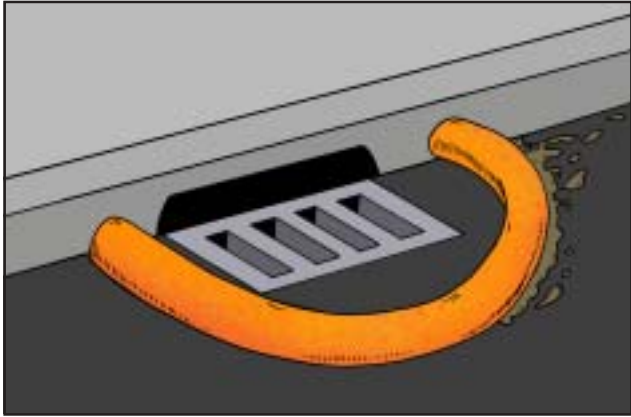
## Method 1 - Cover Stockpile

- a) Place a tarp, plastic or banded pallet under the area where the stockpile will be placed.
- b) Place a secured covering over the stockpile.
- c) Then place sediment control logs around the downslope base of the stockpile.



## Method 2 - Protect Downstream Stormwater Pit with a Gravel Sausage or Sediment Log

A gravel sausage or sediment log is a temporary collection device that can be used when stockpiles are stored or cutting is done off site. It is also a useful precautionary measure at all sites.

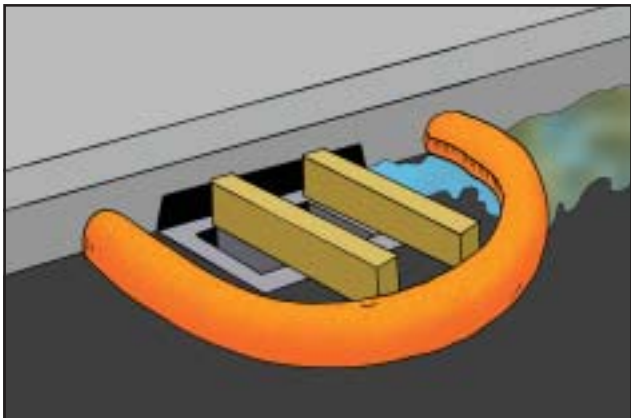


### TO BUILD A GRAVEL SAUSAGE:

#### a) Make the sausage sleeve

A gravel sausage is made from a geotextile sleeve filled with 25 - 50 mm gravel.

The gravel sausage should be 150 mm high.



#### b) Put the gravel sausage across the opening of the inlet pit

Make sure that the sausage is tight with the kerbing on the upslope side of the inlet pit and extends beyond the grate.

There should be a 100 mm gap between the front of the pit and sausage. Use wooden blocks to keep the 100 mm gap.



#### c) Clean out gravel sausage regularly

When soil and sand builds up around the gravel sausage, this should be collected and disposed of on site.

**Regular maintenance is required.**

**DO NOT HOSE SEDIMENT  
DOWN THE GUTTER**



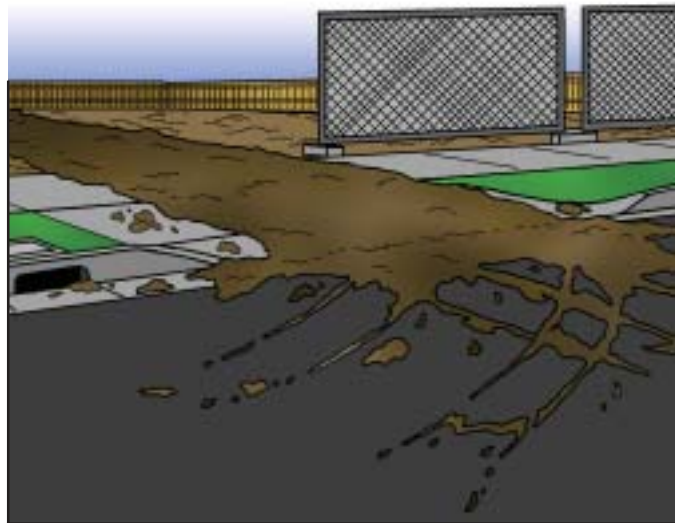
## SITE RULE 4

Keep mud off road and on site

### Why is mud a problem?

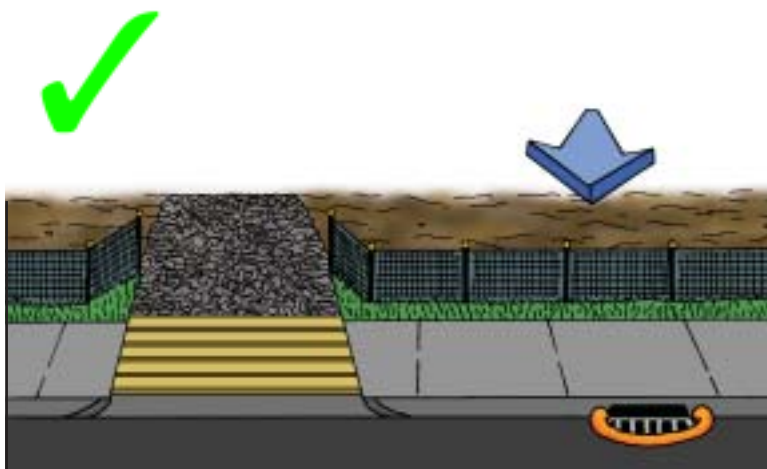
**Two things happen when vehicles go on and off the site:**

1. The surface area of the site is damaged making it dangerous.
2. Mud is carried back onto the roads and footpaths, and washes into the stormwater system.



## METHODS TO CONTROL MUD

The following simple methods will help you to protect the surface of your site and help stop vehicles from dropping mud on the road from their wheels. The best way to do this is to put crushed rock on the crossover or access point of your building site.



Putting crushed rock on the access point of your site is a good way to prevent damage and provide a dry access point for vehicles. Where possible park vehicles off site.

**Make sure gravel does not collect in the gutter or on the footpath.**

### Control Method 1: Build a crushed rock crossover



Remove a 3m or greater strip of soil from road (or where concrete crossover ends) to nearest building point or a minimum of 5 m.

Use road base or 40 mm aggregate or crushed rock to a depth of 200 mm.

Restrict vehicle access to this point.

### Control Method 2: Keep to crushed rock path



Only drive where you need to. Keep to a set path (preferably on crushed rock).

### Control Method 3: Remove mud from tyres



Use a shovel to remove mud from truck tyres before leaving site.

### Control Method 4: Clean road



If mud goes on road, remove as much as possible and put it back on site.

Use a broom or a shovel.  
**DO NOT USE A HOSE.**



# SITE RULE 5

Keep litter contained on site

Why is litter a problem?

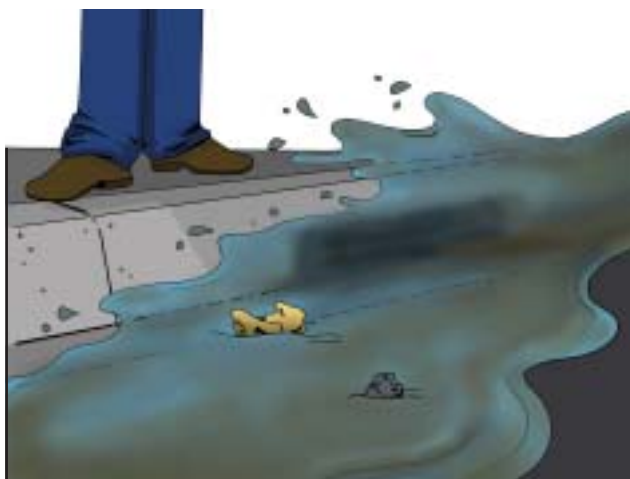


Many building sites have both building rubble and other rubbish spread across them.



**This causes many problems:**

You may now have an **UNSAFE WORK ENVIRONMENT!**  
This could increase the chance of legal and public liability problems



Litter blowing off site can block stormwater drains.



Litter may spoil local creeks and eventually find its way to the coast.

# METHODS TO CONTROL LITTER

The following simple methods will help you to stop litter leaving your site or being a hazard on site.

## Control Method 1: Litter bins or covered skips

A mesh bin with a closeable lid is suitable for larger items like cardboard boxes, plastic wrapping and polystyrene.

Mesh to be 50 mm or smaller



A smaller bin is okay for smaller rubbish like paper, food wrapping and drink containers that may be blown off site. Council bins may be restricted from building sites.



Empty the litter bin regularly. Don't allow overflow. Where possible, collect the materials from the litter bin for recycling and /or keep different materials in separate bins.

**CONSIDER A RECYCLING BIN**

## Control Method 2: Site fencing

Site fencing will help to keep litter from being carried off site by wind or water and provide security.

**A FENCE DOES NOT NEGATE THE NEED FOR A BIN.**



Check council requirements for temporary fencing and avoid trip hazards on footpath.



Remember to install a sediment control fence prior to installation of the temporary fence.



# SITE RULE 6

Clean and wash up on site

## Why is washing up a problem?



**When cleaning up after painting, plastering or concreting it's most important to keep the wash water out of the stormwater system.**

Problems to the environment include:

1. Oil based paints form a thin film over the surface of the water. This starves water plants and animals of oxygen
2. Paints and petrol chemicals can contain toxic compounds
3. Concrete changes the acidity of waterways which can kill water plants and animals. Concrete washings can harden and block drains
4. Roads around a building site can become dirty, slippery and dangerous.





# METHODS TO CONTROL WASHING UP

The following simple methods will help you to stop the contamination of stormwater from paint, plaster or concrete washings.



## Control Method 1: Have a set washing up area

Choose a set area to do all your washing up. This area should be on the building site and away from all stormwater drains. It should be bunded and contain wash out barrels.

You could use the same area you have chosen for tile and brick cutting.

Contain chemicals and slurry onsite.

Put sediment control fences downslope.

**NOTE: SEDIMENT CONTROL FENCES WILL NOT STOP CHEMICALS**

## Control Method 2: Get rid of concrete slurry on site

Collect wash water from concrete mixers and pumps in a wheel barrow and get rid of it in your wash area. You can also safely get rid of

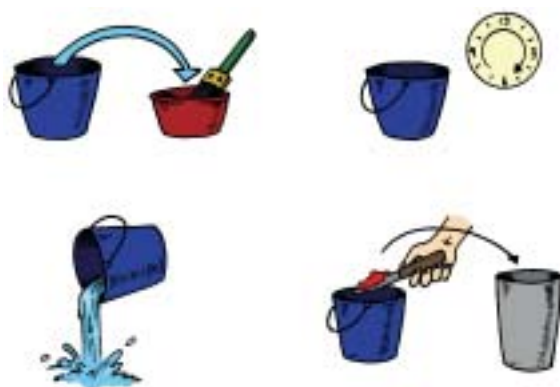
concrete slurry by tipping small amounts in a ditch lined with plastic or geotextile liners. When the water evaporates or soaks into the surface the solids can then be put into a skip bin or recycled in construction or as road base.



## Control Method 3: Clean equipment off before washing

Brush dirt and mud off equipment before you wash it. Spin rollers and brushes to remove paint before you wash them in a wash out bin.

You will then need less water to clean this equipment.



## Control Method 4: Clean painting tools carefully

Use one container to wash the brush and another to rinse it. Let the first container stand overnight to let solids settle. Then pour out the water on to the ground if it is not too dirty and put settled solids in a bin.

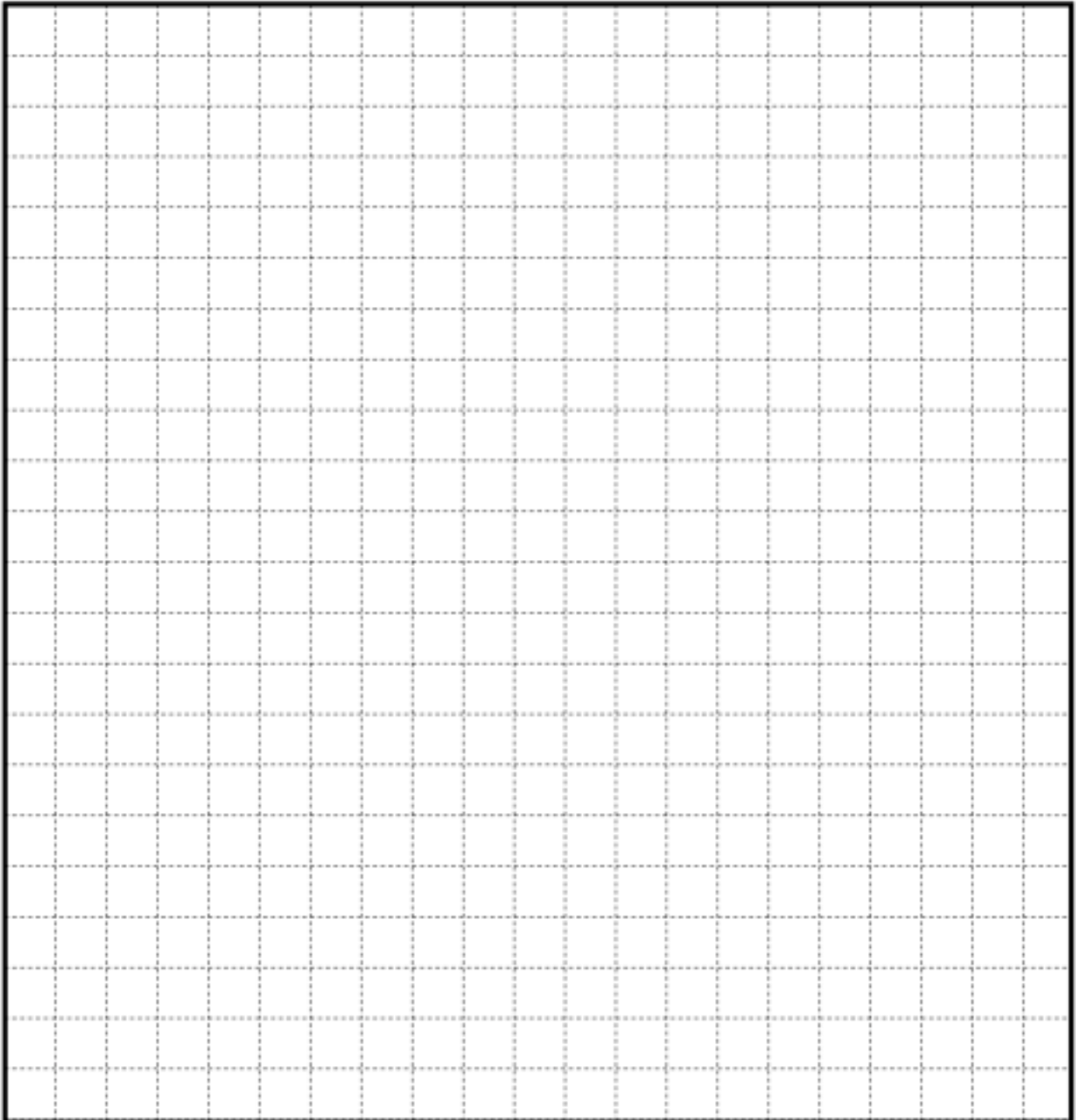
Wash oil based paints in solvent baths until clean. **DO NOT PUT THE SOLVENT ON THE GROUND.** Contact a waste disposal company for removal.

# SITE MANAGEMENT PLAN

Building Company: \_\_\_\_\_ Date: \_\_\_\_ / \_\_\_\_ / \_\_\_\_

Site Address: \_\_\_\_\_

Client Name: \_\_\_\_\_ Contact Number: ( ) \_\_\_\_\_



**LEGEND:**

Scale:

— = 1 m



- Nth



- Bin



- Rumble grid



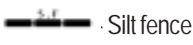
- Stabilised access point



- Vegetation to be retained



- Grass filter strip



- Silt fence



- Stockpile



- Gravel sausage



- Skip



- Temporary Fencing



- Wash up area

# CLEAN SITE CHECKLIST

Please photocopy to use on site

## SITE DETAILS:

Building Company: \_\_\_\_\_ Date: \_\_\_\_ / \_\_\_\_ / \_\_\_\_

Site Supervisor: \_\_\_\_\_

Site Address: \_\_\_\_\_

Client Name: \_\_\_\_\_ Contact Number: (    ) \_\_\_\_\_

SITE RULE	TASK	CHECK
<b>SITE RULE 1 -</b> <b>Check Council requirements</b> <b>and plan before you start</b> <b>work on site.</b>	Crossover away from lowest point	<input type="checkbox"/>
	Sediment control fence on lowest side	<input type="checkbox"/>
	Stockpiles away from lowest point	<input type="checkbox"/>
	Marked trees and vegetation to keep on site	<input type="checkbox"/>
<b>SITE RULE 2 -</b> <b>Stop erosion on site and</b> <b>contain sediments.</b>	Sediment control fence in place	<input type="checkbox"/>
	Catch drains on high side of site	<input type="checkbox"/>
	Vegetation areas kept at boundary	<input type="checkbox"/>
	Gravel sausage at storm water pit	<input type="checkbox"/>
	Downpipes set up as early as possible	<input type="checkbox"/>
<b>SITE RULE 3 -</b> <b>Protect stockpiles.</b>	Base and cover for stockpiles	<input type="checkbox"/>
	Gravel sausage at stormwater pit	<input type="checkbox"/>
<b>SITE RULE 4 -</b> <b>Keep mud off road and</b> <b>on site.</b>	Crushed rock access point	<input type="checkbox"/>
	Vehicles keep to crushed rock areas	<input type="checkbox"/>
	Mud removed from tyres before leaving site	<input type="checkbox"/>
	Clean road if muddy	<input type="checkbox"/>
	Clean stormwater pit and maintain gravel sausage	<input type="checkbox"/>
<b>SITE RULE 5 -</b> <b>Keep litter contained on site.</b>	Litter bins in place with lid closed	<input type="checkbox"/>
	Site fencing in place	<input type="checkbox"/>
<b>SITE RULE 6 -</b> <b>Clean and wash up on site.</b>	Cutting and clean up area on site	<input type="checkbox"/>
	Clean equipment off before washing	<input type="checkbox"/>
	Sediment filters downslope	<input type="checkbox"/>
	Contain all washings on site	<input type="checkbox"/>

# 6 RULES FOR A CLEAN WORKSITE

SITE RULE 1 -

**Check Council requirements and plan before you start work on site.**

SITE RULE 2 -

**Stop erosion on site and contain sediments.**

SITE RULE 3 -

**Protect stockpiles.**

SITE RULE 4 -

**Keep mud off road and on site.**

SITE RULE 5 -

**Keep litter contained on site.**

SITE RULE 6 -

**Clean and wash up on site.**

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