

Building on small sites

Doing it right





To view our playlist of five videos, just click on the red play button below, or click on the thumbnail image of any of the videos.



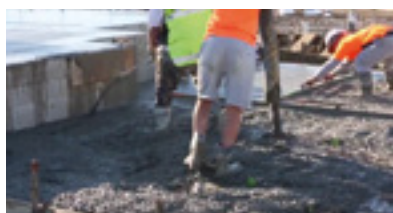
Good building site management
3:41



Building a silt fence and bunds
4:57



Stabilising entranceways
2:32



Working with concrete
2:49



Catchpit protection
1:28

Project checklist

Before you begin your project:

- read and understand your consent and conditions

At the start of your project:

- install silt fence
- stabilise entranceway to site
- protect drains /catchpits.

During your project:

- keep all consent documentation on site
- designate a wash-down area
- minimise exposed areas
- dewater footings before concreting
- prevent sediment run-off from your site
- book inspections as required by your building consent
- use temporary drainpipes to divert rainwater
- wash all equipment on unsealed ground
- manage waste carefully.

At the end of your project:

- book final inspection for building consent compliance
- remove silt fences
- remove filter socks
- remove rubbish
- give documentation (certificates, warranties, producer statements) to project manager/property owner (needed for Code Compliance Certificate).

Introduction

This booklet will give you information on:

- preparing for your project
- how to do the work right, first time
- managing sediment on your site
- achieving council sign-off.





Christchurch City Council wants to help you run an efficient and compliant work site. By following your consent conditions you can:

Save money

- avoid additional inspection costs and fines
- reduce monitoring costs
- avoid costly clean-ups and rework.

Save time

- continue your work without compliance issues
- avoid additional site inspections.

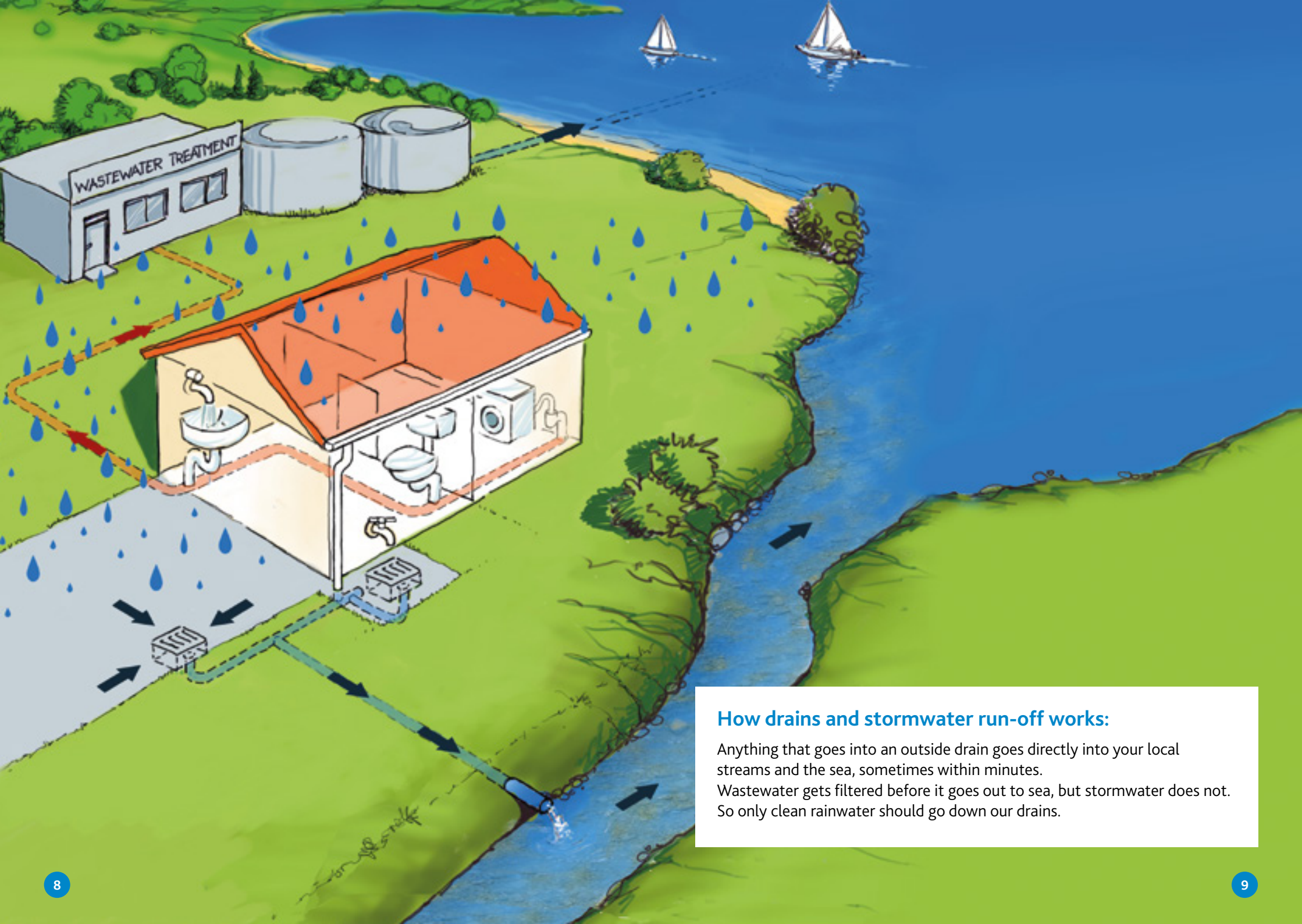
Save stress

- enjoy a hassle-free build.

Save your environment

- keep concrete run-off out of drains
- keep mud and dust out of stormwater drains
- only rainwater should go down drains – all run-off goes straight to the sea.





How drains and stormwater run-off works:

Anything that goes into an outside drain goes directly into your local streams and the sea, sometimes within minutes. Wastewater gets filtered before it goes out to sea, but stormwater does not. So only clean rainwater should go down our drains.

Keep our waterways clean!

Sediment and contaminants that get into stormwater drains pollute our streams and sea.



Before the project starts

Read your consents

In many cases you may have both a resource consent¹ and a building consent².

- ✓ Before starting work you need to know what your consent conditions are.
- ✓ Have a copy of all consents on site.
- ✓ Make sure your contractors and subcontractors know the consent conditions.
- ✓ Let council know when you're about to start work.
- ✓ Plan ahead for resource consent and building consent inspections of your project.

¹ A resource consent has conditions about how your development will affect the environment (land, air, water, neighbours, streetscape, etc). These will be monitored by inspectors.

² A building consent gives the details of construction, inspections and documentation required for Code Compliance Certificate.



During the site works

Control mud and sediment

You need to prevent soil on your site being washed away by rain.

You can do this by installing sediment and erosion controls to contain your sediment on site.

Not taking care of this is **an offence and you can be fined.**



Silt fences

Silt fences are useful for containing stockpiles of earth or areas of disturbed soil and clay on site.

A silt fence is a temporary barrier used to intercept dirty water and retain sediment. The best type is woven 100 micron geotextile cloth. Weedmat and other materials don't work properly as silt fences, and don't meet council standards.

How?

Install a silt fence around the downhill side of your site to contain sediment so that when it rains, muddy water stays behind the fence.

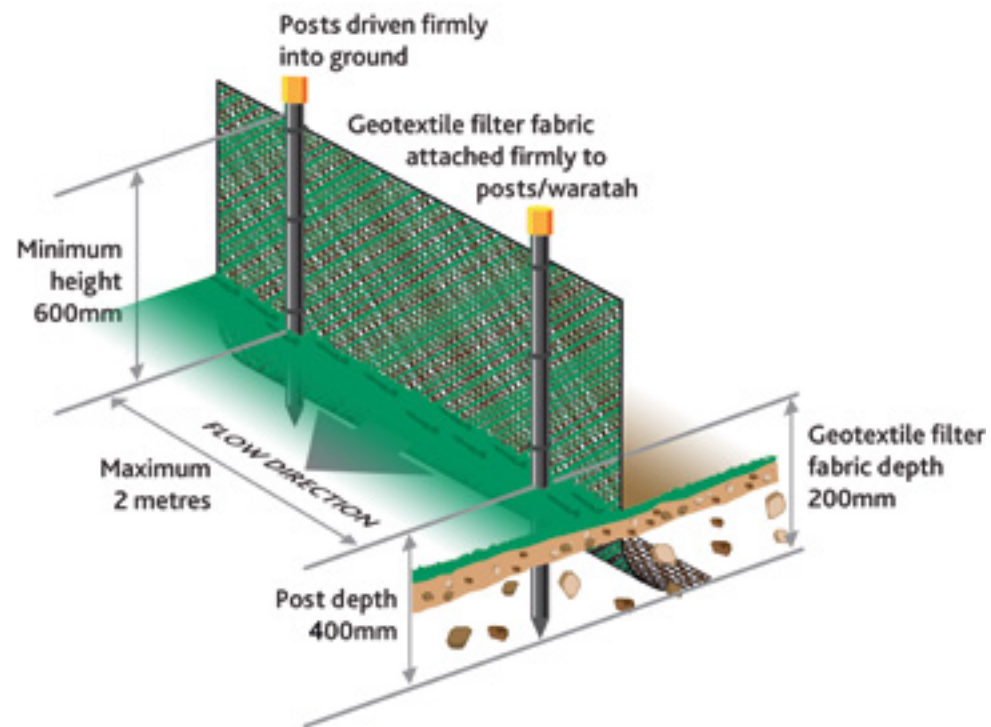


Be prepared to shift your silt fence and bunds as you move through different stages of your project.
Don't use haybales – they don't work.

Proper silt fence installation is critical to its performance.

It needs to:

- be installed in a trench 200mm deep by 100mm wide
- have waratahs or posts hammer-staked at least 400mm deep on the downhill side of the fabric, no more than 2m apart
- be 600mm high above ground, with an additional 200mm of cloth below ground in the trench
- have each end of the fence return up the slope roughly 2m to prevent water going around the edges
- be anchored by backfilling the trench and placing soil on top of the fabric.





Keep dirty and clean water separate

- Build silt fences to keep dirty water (containing soil and sediment) away from stormwater drains.
- Use bunds to divert clean rainwater away from your exposed worksite to prevent it washing sediment off the site.
- Make sure diverted water does not cause a nuisance to neighbours' properties.

How?

- Construct earth bunds around the outer edges of your site by compacting clay or topsoil and covering them with geotextile cloth, grass or mulch.

Why?

- This will divert excess clean rainwater away from your site, making your site drier and easier to work in.
- This will also help prevent dirty water entering stormwater drains and streams.



Stabilise entranceways

Keep vehicles off exposed soil and clay – build a stabilised entranceway with geotextile cloth and large washed aggregate.

How?

- The minimum set-up for your entranceway should be at least:
 - a 150mm thick layer of 65-100mm aggregate
 - 4m wide with a geotextile base
 - long enough for your site with 'wings' (to allow for vehicles cutting corners).
- Don't use materials like sand, crushed concrete or asphalt to make your entranceway.
- Mud should be swept back on to site (not on to the road).

Why?

- A stabilised entranceway prevents vehicles tracking mud and clay on to the road (which is a common source of complaints to council).
- Mud and contaminants can make a road slippery and dangerous. They can be washed into the stormwater system by the rain or create a dust nuisance when it's dry.
- It is your responsibility to ensure that the road is clean of mud and sediment. **Failure to do so can result in a fine or prosecution.**



Placing geotextile material under aggregate prevents the stones sinking into mud, and stops mud rising back up through the applied aggregate.



GAP 65 placed on top of geotextile material. If you do this properly, the entranceway will work better and last longer.

Minimise exposed areas

How?

- Keep as much vegetation cover as possible over soil and do your work in stages.
- Keep a berm of grass around the outside of the site to prevent rain washing exposed soil away.
- Cover stockpiles with mulch, straw, plastic sheets or tarpaulins as soon as possible to prevent erosion and run-off.

Why?

- The less earth you have exposed, the less likely it will be washed into stormwater drains. Anything that gets into stormwater drains goes straight into local streams and the sea.



Dewatering

Removing dirty water from footings, trenches and pile holes on your site needs to be carried out carefully so it doesn't run down into stormwater drains. Never pump unfiltered dirty water from trenches or pits directly to the kerb and channel or stormwater system – remember this goes straight out to sea.



How?

- Pump water through a filter sock or to a stabilised surface (eg a grassed or metalled surface – not concrete) above a silt fence.
- Some options:
 - pump the water into a tank to allow for sediment to settle out further
 - pump through filtration devices such as dewatering bags or turkey's nest (a large ring of sand socks or silt fence)
 - pump through a series of sand socks lining the kerb and channel.
- If filtration devices are unavailable, use a vacuum truck to remove water from your construction site.



Drain/catchpit protection

There are many problems with catchpit protection. It should only be used to support the other sediment control measures mentioned earlier. Talk with your compliance officer about the best options for your site.

How?

When installing catchpit protection:

- install a series of sand socks in the kerb channel – this will slow the flow of the water allowing more sediment to drop out of the water
- check it regularly – especially after there's been a lot of rain
- remove it when your job is finished and clean up any buildup of sediment.

Install private drainage at the earliest opportunity

- Once the roof is on, install drainpipes (temporary or permanent) so rainwater can be diverted to stormwater drains.

Why?

- Clean rainwater is diverted from exposed site, making it less muddy and sending only clear water down stormwater drains.



Temporary drainpipe installed on house under construction.

Stabilise your site

Leaving soil and clay exposed means rain can wash it off into drains – this has a destructive effect on our streams and causes pollution.

How?

- Use mulch, hay, pea straw or other materials to cover exposed areas of soil.
- Pour and dry concrete as soon as you can.
- Lay aggregate as soon as you can.
- Sow seed as soon as you have finished stages of work.



Stabilise your site by covering exposed soil. This prevents erosion and run-off to the road, stormwater system or neighbouring properties.



Working with concrete and other similar products

Concrete kills

Never put concrete or wash concrete down stormwater drains. Concrete and cement are extremely toxic because they have a high lime content with a pH of 12 out of 14. This can easily kill fish, eels and other wildlife.



It takes five tanker loads of water to neutralise one litre of concrete slurry.



Never let concrete wastewater go down a drain

Manage concrete

- Remove water from pile holes, footings and foundations before pumping concrete.
- Ensure delivery and pumping is kept on site on an unsealed surface and **away** from stormwater drains and trees.
- Divert or contain any excess slurry or wastewater on to an unsealed surface.
- Don't schedule concrete pours in the rain.
- If pumping occurs on the street, use large bins or mats under the pump hose to collect spills – and dispose of any spills on unsealed surfaces.
- Wet cut where possible and minimise the amount of water to reduce the amount of run-off.
- Wash all equipment on site on unsealed ground, away from stormwater drains.



If there is a spill, do not wash it to the drain

- Act immediately to clean up the spill using the techniques listed above.
- Call ECan's **pollution hotline** on **0800 765 588**

Remember – the standard cost of a wet vac is less than a council fine.

Exposed aggregate

Like all concrete run-off, wastewater from exposed aggregate is **very toxic** due to elevated pH levels.

- Capture all wastewater and redirect it to unsealed ground to soak in, or remove it with collection units such as a wet vac, sucker truck or pumps.
- Use collection units to plug drains and remove wastewater from spillages in a controlled manner.
- **Do not wash acid or chemical wastewater into the drain.**



Concrete run-off water is vacuumed up by wet vac truck pipes.

Designated wash-down area

Establish a designated wash-down area on your work site. This area should drain to unsealed ground **away** from stormwater drains to avoid damaging our environment.

- Plan ahead and ensure that the area is accessible and away from drains or streams.
- Scrape excess material off equipment before washing.
- Use high-pressure, low-volume water spray.

If the wash-down area begins to overflow, arrange for the contents to be removed.



Clean painting equipment properly

Like cement, paint is extremely harmful when discharged into the natural environment.

When washing equipment:

- Keep the dirty water away from stormwater drains or streams.
- Wash water-based or acrylic-based paints onto an unsealed surface where it can soak into the ground (away from trees and plants).
- Wash it in a laundry sink. If in doubt, seek the manufacturer's advice.
- Oil-based paints cannot be disposed on site. Contain and collect oil-based paint residue and cleaning products for disposal. Contact your paint supplier for recommended disposal methods.



Handy tips for your site

- Soils and other materials should be stockpiled away from kerbs and areas where run-off is likely to enter the stormwater system or drains.
- Keep an eye on the weather and work around it – try to avoid pouring concrete in the rain.
- Keep your site tidy and dry – it will make your site safer and easier to work in.
- If you need any information, call council on 03 941 8999.
- **Work as a team to get it right and take pride in doing your part to protect our environment and region.**



After the project is finished

- Book final inspections for your resource consent and building consent.
- Remove your sediment control measures (silt fences, filter socks, etc).
- Tidy your site.
- Review your resource consent conditions.
- Check all relevant documentation for your resource consent and building consent has been provided to the project manager / property owner. This needs to be filed with council to get your completion certificates.

For more information

For more information on building consents, resource consents, environmental controls and bylaws, go to the Christchurch City Council website or call 03 941 8999.

If you require assistance with a sediment issue, call the Council on 03 941 8999.



Any problems?

Sediment Issues

Call the Christchurch City Council on 09 941 8999.

Other Pollutants

ECan hotline 0800 765 588.

All outside drains run to streams and the sea.

Only rain should go down outside drains.

Do your bit to keep our waters clear and our beaches safe.



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Doing it right

Any problems?

Phone Christchurch City Council
on 03 941 8999 or
ECan pollution hotline on 0800 765 588
24 hours