Sediment and Erosion

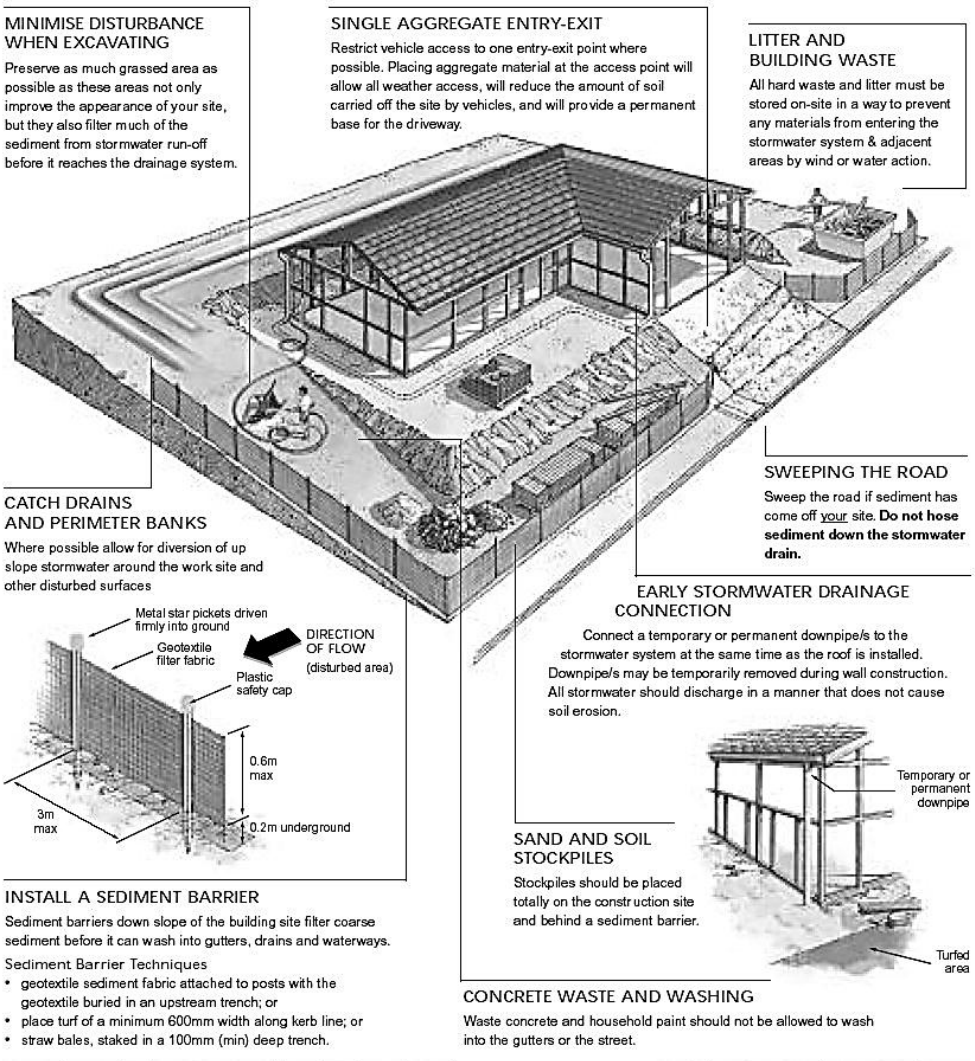
Sedimentation and erosion can cause water contamination which poses a serious threat to the environment. Builders and developers have obligations by law to prevent the deposit or release of sand, sediment, silt, rubbish or building materials into gutters, stormwater drains and waterways from building sites.

What builders and developers need to do?

- Install and maintain sediment fences to control runoff
- Place gravel sausages to reduce material entering stormwater drains
- Install waste containers on site by using geotextiles and rope to enclose waste

A good building site will have the following elements:

- Minimised extent and duration of soil disturbance, especially during the wet season
- Erosion controls - to protect soil surface
- Drainage controls - to manage stormwater run-off
- Sediment controls - to capture sediment
- Progressive stabilisation & revegetation
- Monitoring & maintenance



Courtesy of Brisbane City Council

What are some common building site deficiencies?

- No establishment of a stabilised entry/exit point
- Unnecessary site disturbance (such as parking or driving on exposed soil)
- Failure to divert upslope water
- Failure to install sediment controls such as sediment fences or turf strips
- Delays in connecting downpipes to stormwater drains
- Incorrect sitting of stockpiles
- Failure to install and/or maintain adequate drop inlet sediment traps.

Builders and home-owners have a legal responsibility under the Environmental Protection Act 1994, and the subordinate Environmental Protection (Water) Policy (2009), to minimise or prevent environmental harm. By law, council is responsible for investigating such incidences of environmental harm. On-spot-fines can be issued to persons that allow the runoff of sand, sediment, silt, rubbish or building materials into gutters, stormwater drains and waterways.

Poor site management

Excellent site management: *Photo courtesy of Catchments and Creeks PTY Ltd*

Sedimentation

There are two basic types of sediment - coarse & fine, and different management practices are required to control each. Builders must ensure that they implement effective site controls that do not contribute to sedimentation of waterways and drainage systems or cause windblown soil loss.

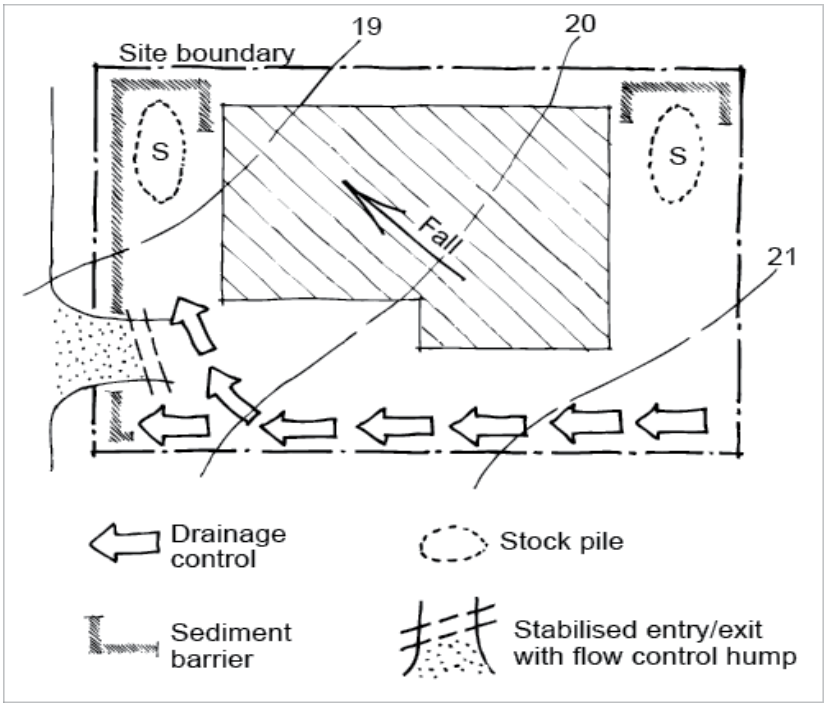
Coarse sediment (eg sand) often deposits close to the source, for example on the bottom of drains, culverts and waterways. Coarse sediment can be controlled relatively effectively through sediment controls such as sediment fences and stormwater inlet protection.

Fine sediment (eg clay) is what causes water to look murky. It is these fine particles that cause the greatest environmental harm, for example, by clogging fish gills and smothering plants and corals. Fine sediments are much more difficult to control than coarse sediments, because sediment controls on their own do not remove fine particles. The most effective controls for fine sediments are:

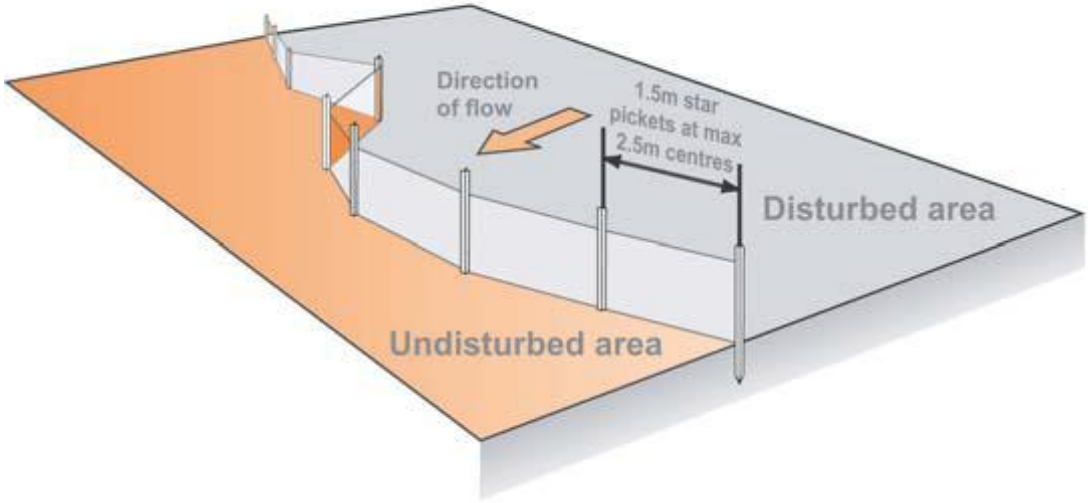
- Minimise soil disturbance – this will reduce erosion so that sediment stays on site.
- Protecting the soil surface through stabilisation measures such as revegetation, mulch or geofab.

Sediment control measures must:

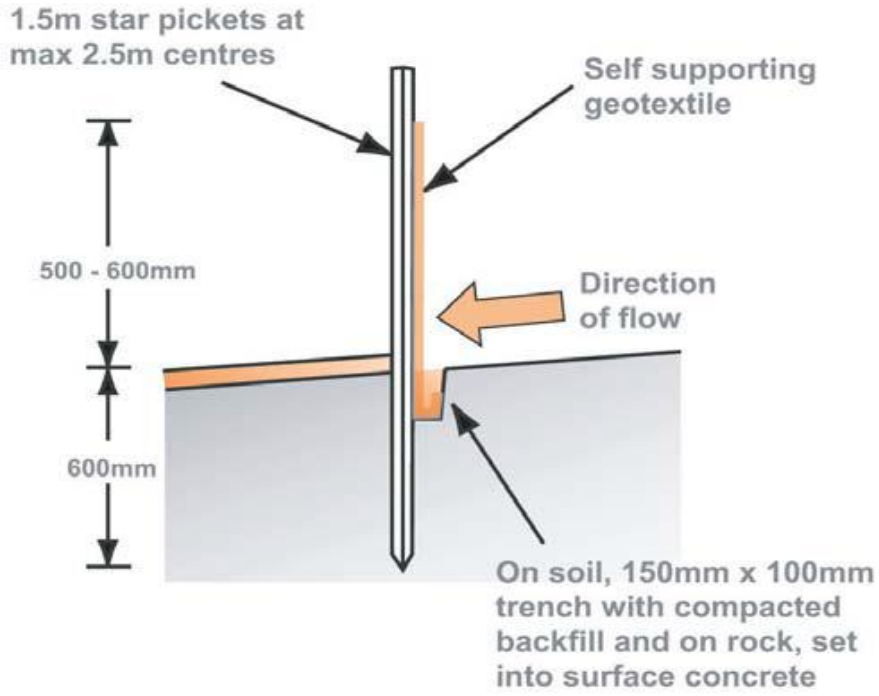
- be put in place before any excavation or earthmoving takes place
- be maintained until the end of construction and the site is stabilised
- not divert stormwater onto neighbouring properties
- not cause erosion.



Ideal sediment control on a sloping block



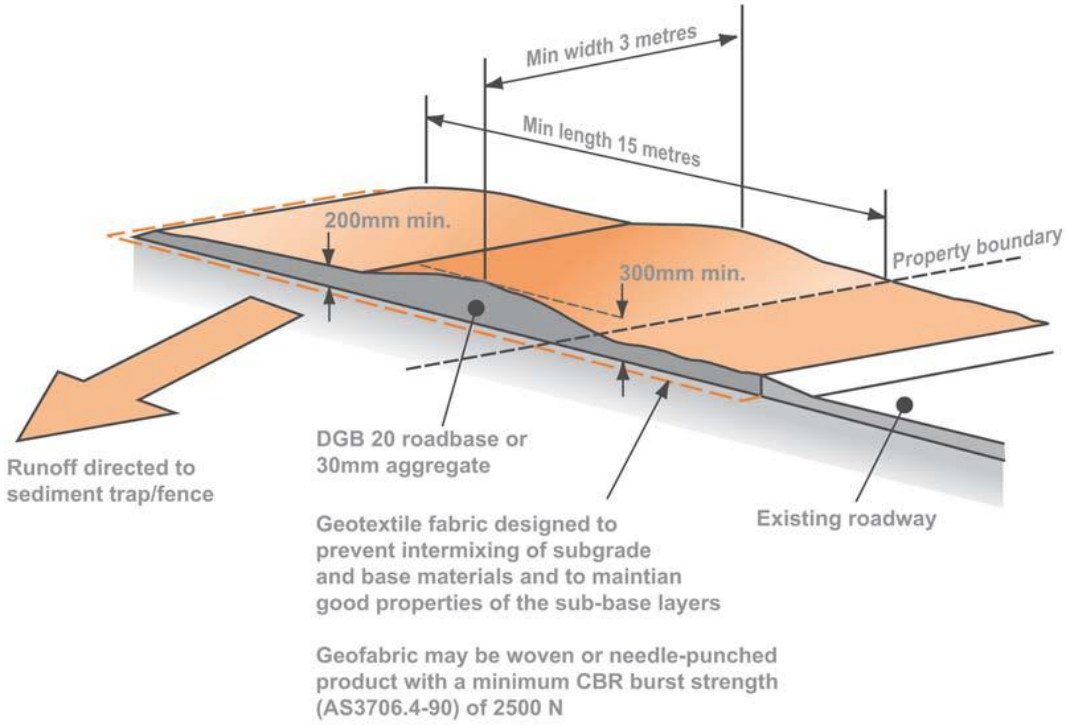
Sediment Fence – Only captures coarse particles such as sand but does not filter out fine particles such as clay. *Photo courtesy of UrbanGrowth NSW 2004*



Sediment fence cutaway
Photo courtesy of UrbanGrowth NSW 2004

Site entry and exit

Stabilised entry/exits are designed to shake vehicles to remove sediment from tyres and prevent sediment tracking onto roads and should be used on all building sites.



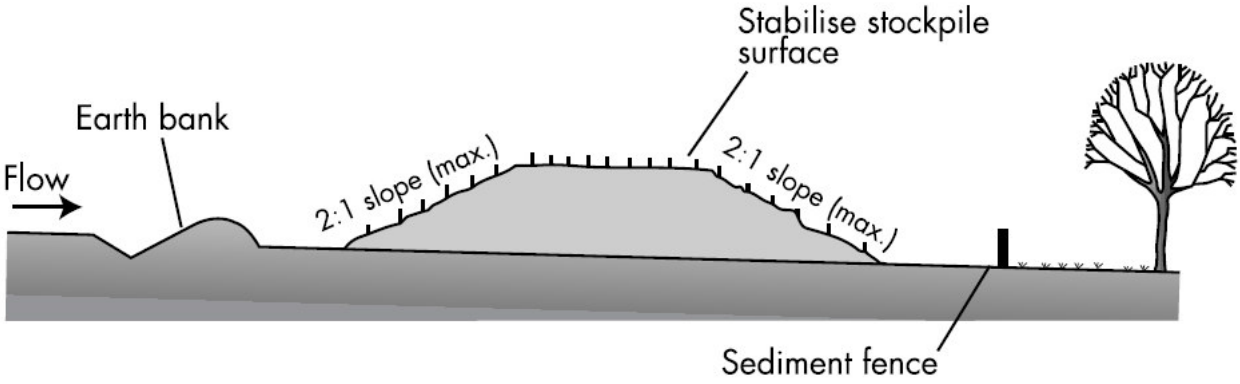
Stabilised Site Access. *Photo courtesy of UrbanGrowth NSW 2004*

Poorly managed site access. *Photo courtesy of NT Government*

Well managed site access. *Photo courtesy of NT Government*

Soil and sand stockpiles

The incorrect storage of stockpiles is a major cause of pollution in our waterways through the stormwater system. Stockpiles should have a designated location that is at least 2 metres (preferably 5 metres) away from areas that are likely to have high flows such as driveways and kerb inlet pits. They should not be located on the footpath and should be behind sediment controls that will prevent the stockpile washing into the stormwater system.



Poor stockpile control. *Photo courtesy of Catchments and Creeks PTY Ltd*

Excellent stockpile control – note stockpile behind sediment fence (L) and covered stockpile(R) .
Photo courtesy of Catchments and Creeks PTY Ltd

Litter and Waste

All hard waste and litter must be stored on site in a way that prevents any materials from entering the stormwater system and nearby areas by wind or water action. Litter traps should be formed on at least three sides with geofab as a windbreak, otherwise a skip can be used. Litter is a major source of pollution of our waterways and coast.

By following these guidelines, Townsville builders will be helping ensure that stormwater runoff from their building site does not cause damage to Townsville's waterways. This will not only help to reduce the risk of environmental harm but you will also reduce the risk of being penalised for causing environmental harm.

Queensland Government increase erosion control fines
The Queensland Government has updated the State Penalties Enforcement Regulation (SPER) which currently regulate prescribed infringement notice (PIN) offences. The PINs for sediment erosion control offences have increased.

Erosion and Sediment Control PIN amounts for a corporation start from $8,538.00.

The current maximum penalties in a court of law for these offences are $189,560.00 if it was done wilfully or $68,310.00 otherwise.

Links

Clean Building Sites

www.townsville.qld.gov.au/resident/environment/Documents/Clean%20Building%20Sites.pdf

Dust

www.townsville.qld.gov.au/resident/environment/Documents/Dust%20Nuisances-final.pdf

Sediment control

www.townsville.qld.gov.au/resident/environment/Documents/Healthy%20Waterways%20factsheet_ESC%20diagrams.pdf

Erosion and Sediment control. (Mackay Regional Council)

http://www.mackay.qld.gov.au/__data/assets/pdf_file/0004/125824/EROSION_SEDIMENT_CONTROL_Low_Res.pdf

Developing a plan for a residential building site. (NT government)

www.lrm.nt.gov.au/__data/assets/pdf_file/0009/354186/2-Fact-Sheet-Developing-an-ESCP-for-a-residential-Building-Site-4-Jul-.pdf

Owner builders

http://www.yourhome.gov.au/housing/sediment-control