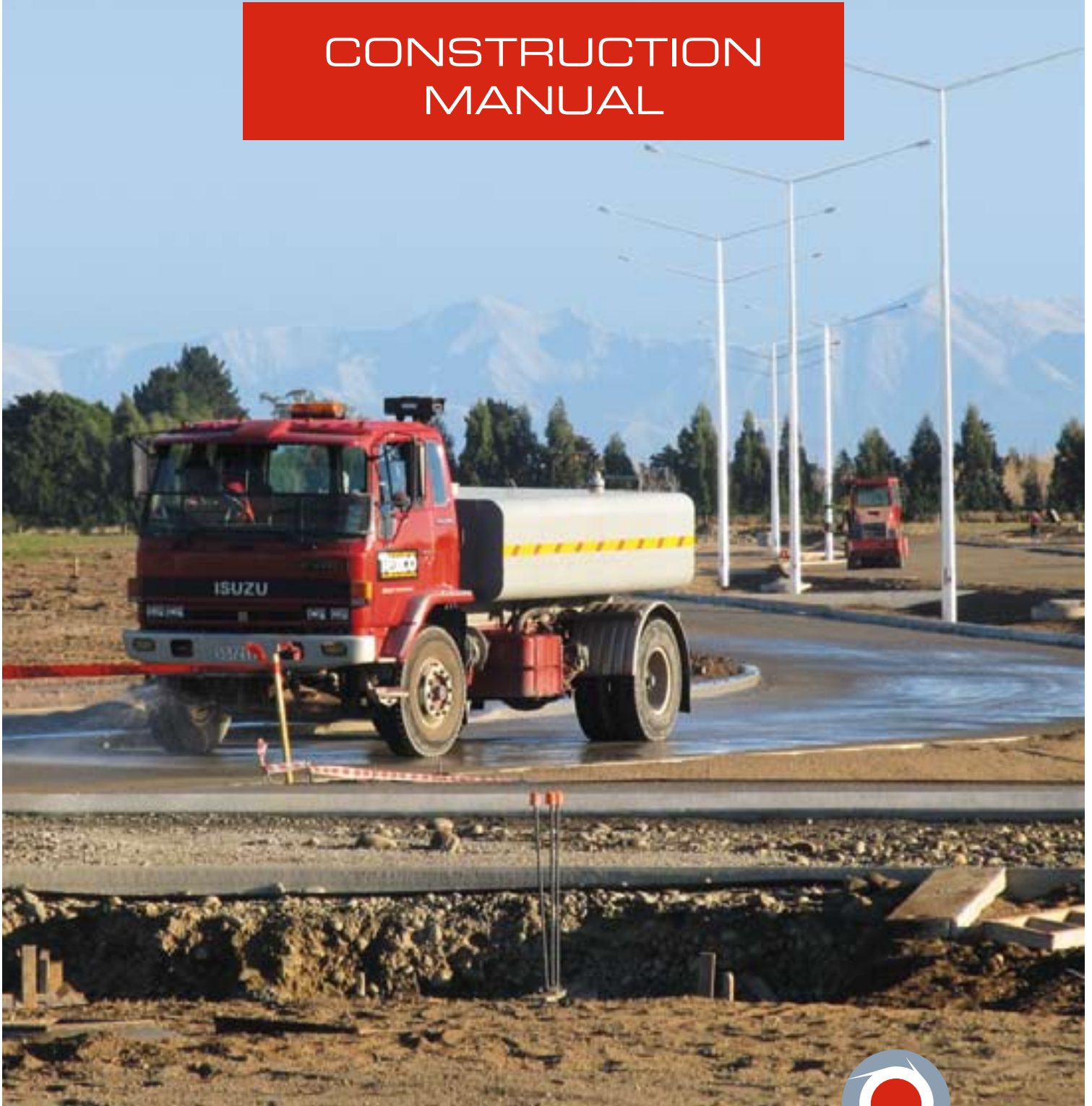


CONSTRUCTION MANUAL





IZONE

SOUTHERN BUSINESS HUB

Construction manual

1. HEALTH AND SAFETY POLICY

It is a requirement that the Builder (which in this document includes all the Builder's sub-contractors) maintain an effective Health and Safety Policy for the work carried out within Izone.

2. CONSTRUCTION BOND

Prior to the commencement of any work on site, the Builder shall complete and return the Construction Bond to Izone's Development Manager enclosing a cheque for \$5,000 made payable to Buddle Findlay Trust Account (refer Annexure A).

3. FENCING THE SITE, INCLUDING EROSION AND SEDIMENT CONTROL GUIDELINES

Environment Canterbury have recently issued guidelines for building on small sites (refer Annexure B). These guidelines must be read and understood as it sets out the correct way of controlling the site to ensure the surrounding berms and sections are not damaged by trade vehicles as well as ensuring any stormwater run off does not flow into the surrounding stormwater treatment system set up to deal with the run off from roads, footpaths and driveways.

This means the Builder shall:

- Fence off the site on three outside boundaries, place silt fence on the downhill side to capture silt and soil run off where appropriate.
- Silt fences are to be placed along the road frontage leaving the dedicated entrance for site access,
- The entrance way has been metalled and kept in good condition to limit any material being dragged onto the roadways. This is to be raised slightly at one point to ensure run off is not directed to the kerb and channel.
- Roadways are to be swept daily to ensure the road carriage ways are kept clean and no long term damage occurs to the road surface.
- It is important that the road reserve is protected to ensure the area is kept in good condition. This will be monitored and the property owner(s) are required to ensure all workers on site follow the rules.
- If the property owner(s) fail to enforce this then the roadways will be cleaned by others and an invoice sent to them for payment.

4. BUILDER'S SITE SHEDS

All Builders' site sheds shall be placed within the respective building lot.

All sheds and other structures necessary for storage etc shall be freshly painted in the common colours or designs of the Builder(s) only. No individual sub-contractors or consultants logos, signs etc shall be showing.

All site signage to be approved by Izone's Development Manager.

5. LOADING, UNLOADING AND STORAGE OF MATERIALS DURING CONSTRUCTION

- All loading, unloading, delivery and storage of materials shall take place within the building site and fenced area.
- No unloading of materials is permitted onto the footpath, berm areas or adjacent lots.

6. PARKING OF TRADES, DELIVERY AND SUB-CONTRACTOR'S VEHICLES DURING CONSTRUCTION

- All vehicles must access the site via the temporary construction access and not over neighbouring sites.
- All vehicles, whether belonging to contractors, tradesmen or deliverers, must either be parked inside the fenced lot areas or parallel parked within the road area.
- Any vehicle that deposits oil or other damaging material must be removed from the area and the damage made good.
- There shall be no parking on the verges, berms, swales or adjacent vacant lots.

7. TOILET FACILITIES

- No toilets other than approved port-a-loo style toilets will be allowed on the sites.

8. ANIMALS

- No animals of any kind are permitted on the building sites or within the confines of the development.

9. MUSIC

- Contractors shall refrain from playing loud music which may disturb other owners/occupiers.

10. ALCOHOL AND DRUGS

- The Developer has a policy of no alcohol or drugs within the confines of the development. However, consideration may be given to granting approvals for special occasions, where alcohol may be consumed in a controlled manner.

11. RUBBISH, RUBBISH REMOVAL AND STREET SWEEPING

- Appropriate rubbish skips shall be kept within the site for all rubbish and shall be cleared at regular intervals.
- At no time shall rubbish be permitted to escape outside of the building site, or be permitted to cause an unsightly mess within the site.
- The Builder shall ensure that all employees and sub-contractors conduct a daily clean up of the site, including a sweep up of any excess material in the road, gutters and on the footpath.

12. WASHING DOWN AND CLEANING OF VEHICLE SPILLAGE

- Washing down of any vehicle is not permitted outside of the building site.
- The cost of repairing any scuffing or road surface damage will be the responsibility of the offending Builder and/or Purchaser.
- All spillage of any material must be removed immediately from footpaths, berms and roads. The cost of repairing any resultant damage will be the responsibility of the offending Builder / Purchaser.
- All trucks must be washed down before leaving the site.

13. SIGNAGE AND STREET OR LOT NUMBERS

- No sign shall be constructed without prior approval of the Development Manager, however a single Builder or building company sign may be constructed along with the street and/or lot number on the outside of the temporary screened fence. These signs should be of good quality and not greater than 600mm x 900mm in size.
- No contractors, sub-contractors or consultants signs will be permitted without specific approval from the Development Manager.
- Each sign must be kept in good condition. Damaged signs must be removed within 24 hours of being requested to do so by the Development Manager.

14. REMEDIAL CLAUSE

The Development Manager reserves the right:

- To request the immediate correction of any or all of the above items;
- To instruct other parties to correct any infringement at the expense of the Builder and/or Purchaser;
- To claim recovery of all costs associated with the correction of any infringements to the above items;

From the Builder and/or Purchaser, or offset any incurred cost against the Construction Bond.

15. DRIVEWAY CONSTRUCTION

Temporary access to any sections to be limited to the proposed driveway locations to protect berms and garden areas.

Final driveway constructions to be built to roading standards to suit heavy vehicles.

- Subgrade to be CBR7
- 250mm AP65 sub-base metal
- 150mm AP40 base course
- 30mm AC10 asphaltic concrete seal including prime coat
- Driveway edging to be concrete or 40mm x 100mm timber batten edging

Existing kerb at crossing to be removed and replaced by heavy duty cut down crossing (minimum 4xD12 reinforcing rods and R6 stirrups at 600m centres in 250mm of additional concrete) be carried out by a Selwyn District Council approved contractor.

Asphalt on existing roadway to be saw cut 0.5-1.0m from fender in straight lines and resealed with AC10.

All services and berms must be protected, and any damage caused by work on site to be repaired. This is the responsibility of the property owner.

There is a 63mm diameter polythene irrigation line in the berms as well as some smaller drip lines in the garden or treed areas. These may appear as an unused line but may only be turned off. These must be always kept in working order. Berms are to be tidied with topsoil and re-seeded or have garden areas tidied on completion.

Selwyn District Council District Plan Rules

For Business Zones with frontages of more than 100m there may be three vehicle crossings per site frontage. If less than 100m then there shall be a maximum of two.

The distance between vehicle crossings in the same road are to be less than 1m or greater than 7m apart. The minimum width is to be 5m, or if a shared crossing is proposed a maximum of 7-8m. Outside this requires the approval of Selwyn District Council. A crossing is measured as the actual length of the drop kerb.

16. STORMWATER

Stormwater from each site must be disposed on that site. This is in terms of the Global Stormwater Consent issued by Environment Canterbury.

Condition 17 of the Stormwater Global Consent requires that a certificate signed by a suitably qualified person confirming the system has been designed and constructed in accordance with the consent.

ANNEXURE A: Construction Bond Document

This document is dated the _____ day of _____

PARTIES:

1. Selwyn District Council, and
2. The Purchaser and/or the Builder named in the attached Schedule 1 ("the Bonded Party")

TERMS:

1. The Bonded Party has agreed to construct a building(s) on the lot referred to in the attached Schedule according to plans, specifications and landscape designs that the Development Manager has yet to approve (the "Approval").
2. In consideration of that Approval actually being given (and if given), and in consideration of the Development Manager allowing the Bonded Party access to the lot, the Bonded Party agrees to carry out all the work on the lot fully in accordance with the processes and standards set out in the Development Manager's Construction Manual and the Land Covenants (together called the "Construction Code" in this Agreement). This is in order to maintain a consistent quality standard of building and degree of cooperation between the parties and others within the Izone subdivision. The Bonded Party acknowledges receipt of a copy of the Construction Code documents.
3. The Bonded Party will, as a condition of Approval (and at the latest, upon receiving the Approval), pay a cash bond of \$5,000 ("the Bond") to the Development Manager which will be repayable when the building(s) to be built on the lot is occupied and the Development Manager has confirmed in writing that the Bonded Party has complied with the Construction Code.
4. Pending repayment of the Bond, the Development Manager will lodge the Bond in an interest bearing "on call" bank deposit account in its solicitor's trust account, in the joint account names of the Bonded Party and the Development Manager, with net interest payable to the Bonded Party on the date of such repayment.
5. If the Bonded Party does not comply with this Agreement or the Construction Code, or with any requisitions set out in any written notice by the Development Manager to the Bonded Party within the time limits stated in that notice, then the Development Manager may use the Bond, plus any accrued interest, to meet or remedy those requisitions. Any costs in excess of the Bond, and interest, will be recoverable by the Development Manager against the Bonded Party in summary judgement as a liquidated debt.
6. Any dispute with respect to any terms of matters touched on by this Agreement shall be referred to an Expert for final determination, and not to Arbitration. Such Expert will be appointed by the President for the time being of the Master Builders Association and the Expert's costs will be paid by the party or parties that he directs. The parties agree to be bound by his decision.
7. If both the Builder and the Purchaser sign this agreement then they are jointly and severally liable to the Development Manager.

SCHEDULE

1. Legal Description: Lot on the attached plan

2. The Purchaser: _____

3. The Builder: _____

SIGNED BY THE PARTIES

Signed for and on behalf of the Selwyn District Council by:

Full Name(s) and Designation(s)

Signature(s) — Duly Authorised

Signed for and on behalf of the Builder by:

Full Name(s) and Company

Signature(s) — Duly Authorised

Signed by the Purchaser(s):

Full Name(s)

Signature(s)

POCKET
VERSION

Erosion and Sediment Control Guideline for Small Sites



Why do small sites need erosion and sediment control?

Ground disturbance for individual buildings may be on a much smaller scale than major developments, but the cumulative impact from these small sites can be considerable. Because stormwater systems are usually installed and operational, they provide a network for removing sediment-laden stormwater and wastewater from the building site. This contaminated water then travels through the stormwater system and creates environmental and maintenance problems in the receiving environment.

The benefits of good water and soil management

Effective onsite management of soil erosion and water pollution provides many benefits, including:

- reduced average construction time
- reduced clean-up costs
- all-weather site access
- better public image
- improved wet-weather working conditions
- improved drainage and reduced site flooding
- fewer problems with mud and dust
- reduced stockpile losses
- better-looking and more marketable sites
- fewer public complaints



Information can also be found through www.ecan.govt.nz or by calling customer services on 03 353 9007

Local Authorities

Christchurch 03 366 4663, outside of Christchurch 0800 76 55 88

www.ecan.govt.nz/ppg

available in PDF downloads from

Pollution Prevention Guidelines

full reference copy available, to order phone

www.ecan.govt.nz/escg

for Small Sites

Erosion and Sediment Control Guidelines

check out the following:

overview specifically for small developments.

How can I find out more?

How do I manage erosion and sediment on site?

The key to good erosion and sediment management, on site is to follow the simple steps, detailed below and shown overleaf, to improve your site throughout the building process, from planning to site decommission.

1. Pre-construction planning and site layout

The most important phase of any project is the planning. By considering the measures shown in the erosion and sediment control site plan overleaf, it is possible to ensure minimum effect and maximum benefits before works start.

2. Provide all-weather access

Local residents often complain about muddy roads when building work starts. This can be stopped by making sure there is one stabilised and managed entry/exit which (if possible) extends directly to the building.

3. Control water at the top of the site

Keeping water out of your works site is a cost-effective site-management tool. Figure 3a shows how to plan your site layout to reduce site erosion. In addition extra drainage and discharge areas may be needed to prevent further problems 3a.

4. Manage within the sediment control zone

The sediment control zone should be as close to works as possible and within the catchment area of other control measures. In addition, by limiting the amount of material supplied to only what is needed, taking responsibility for delivery placement and covering stockpiles with waterproof covers, reductions in time and material waste can be achieved!

Many councils are now requiring erosion and sediment plans to be submitted as part of any building or resource consent process. Failure to comply with these requirements may result in failed building inspections and ongoing non-compliance could result in enforcement action.

Individuals/companies.

Breaches of the RMA may result in: fines ranging from \$750 upwards, prosecution of

activities and those of their employees do not contribute to

The RMA (1991) is the law that protects our environment. It states that every person is responsible for ensuring that their

Environmental law and consents

erosion and prevent sediment discharge into the environment

onto site and surrounding areas

loss of good topsoil

safety problems when soil, litter and debris is washed

services and other structures

to retaining walls, building foundations, underground

small sites include:

The effects of uncontrolled erosion and sediment runoff from

The effects of uncontrolled erosion

resulting reduction in biodiversity

treatment systems, creating flooding

pollution of receiving waters, aquatic habitat and a

blocked gutters and stormwater networks, soakage and

onto site and surrounding areas

safety problems when soil, litter and debris is washed

services and other structures

to retaining walls, building foundations, underground

small sites include:

The effects of uncontrolled erosion and sediment runoff from

resulting reduction in biodiversity

treatment systems, creating flooding

pollution of receiving waters, aquatic habitat and a

blocked gutters and stormwater networks, soakage and

onto site and surrounding areas

safety problems when soil, litter and debris is washed

services and other structures

to retaining walls, building foundations, underground

small sites include:

The effects of uncontrolled erosion and sediment runoff from

resulting reduction in biodiversity

treatment systems, creating flooding

pollution of receiving waters, aquatic habitat and a

blocked gutters and stormwater networks, soakage and

onto site and surrounding areas

safety problems when soil, litter and debris is washed

services and other structures

to retaining walls, building foundations, underground

small sites include:

The effects of uncontrolled erosion and sediment runoff from

resulting reduction in biodiversity

treatment systems, creating flooding

pollution of receiving waters, aquatic habitat and a

blocked gutters and stormwater networks, soakage and

onto site and surrounding areas

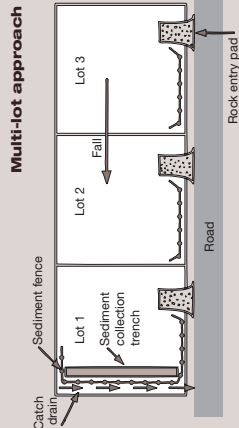
safety problems when soil, litter and debris is washed

services and other structures

to retaining walls, building foundations, underground

small sites include:

The effects of uncontrolled erosion and sediment runoff from



Multi-hot approach

Multi-lot developments

Take a smart approach to multi-lot developments for developers and builders (if applicable).

It is better for developers to plan a multi-lot approach before each plot sale by completing building platforms and any retaining walls before selling. Benefits include: economies of scale when using equipment and materials, better home design and placement for site type with improved site entry.

Research shows that by connecting these pipes as early as possible site flooding and down time after rain can be significantly reduced, thus shortening total building time and related costs.

8. Connect all down pipes

Research shows that by connecting these pipes as early as possible site flooding and down time after rain can be significantly reduced, thus shortening total building time and related costs.

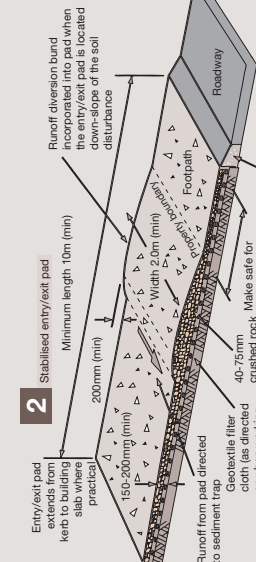
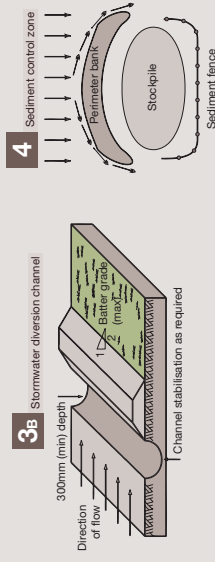
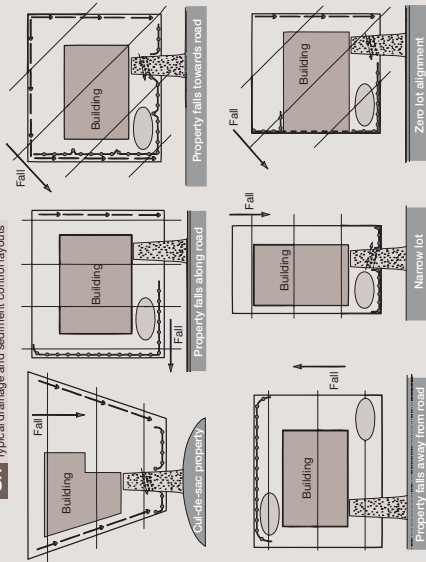
9. Service trenching

In order to prevent service trenching from becoming a source of sediment, a few easy steps can be taken. Make sure to plan and coordinate services connection, so all are done at the same time (three days max) and within a seasonally dry period of the build. Consider and plan the trench, making sure to pile earth above the trench to divert surface water away and avoid trenching in areas prone to water pooling. Once finished, ensure that backfill is properly compacted and filled to a level of at least 75-100mm above the ground level to allow for some subsidence and prevent it becoming a water channel.

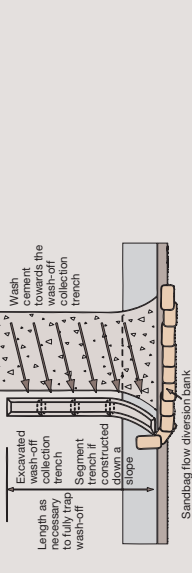
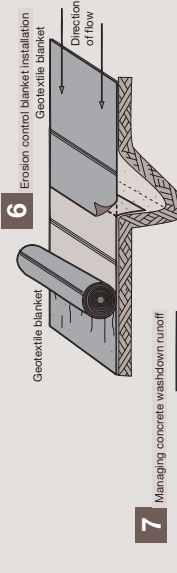
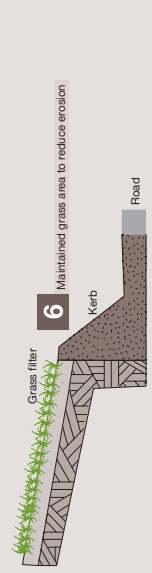
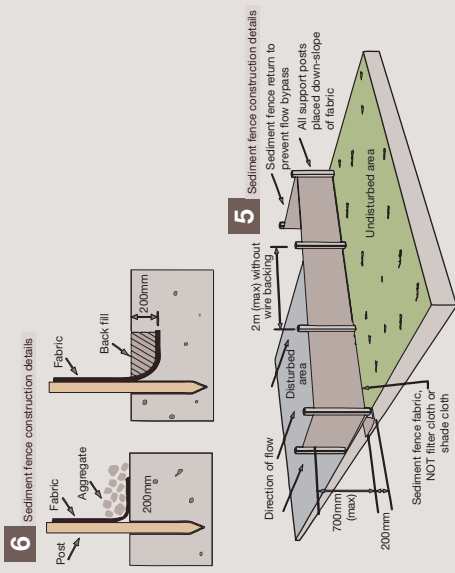
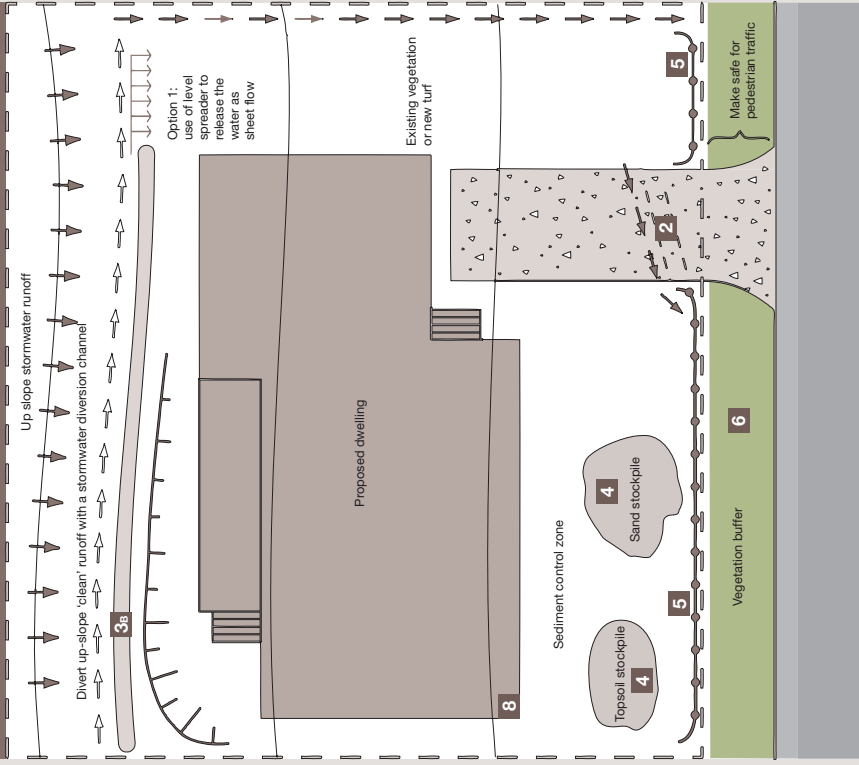
10. Maintaining and decommissioning of site

After investing in sediment control measures, it is important to ensure they are properly maintained and working effectively throughout your build. Daily checks and the correct removal of built-up sediment should be employed to make the most of your control measures. Careful decommissioning will also allow for materials to be re-used on the next job, while regeneration of vegetation or stabilising the site will ensure improved kerbside appeal.

3A Typical drainage and sediment control layouts



Erosion and sediment control plan example



1. All erosion and sediment control structures to be inspected regularly and maintained in good condition.
2. All proposed structures outside the immediate building area to be preserved during the building phase.
3. All erosion and sediment control measures to be installed in a sequence of major networks.
4. Stockpiles of soil material to be covered with impervious sheet.
5. Runoff water downpipes to be connected to the stormwater drainage system as soon as practical after the roof is laid.

- 1 Pre-construction planning and site layout**
The most important phase of any project is the planning. By considering the erosion and sediment control site plan, it is possible to ensure minimum effect, and maximum benefits before works start directly to the building.
- 2 Provide all-weather access**
Local residents often complain about muddy roads when building work starts. This can be stopped by making sure there is one stabilised and managed site plan. In addition extra drainage and discharge areas may be needed to prevent further problems. 3B.
- 3 Control water at the top of the site**
Keeping water out of your works site is a cost-effective site management tool. Figure 3A shows how to plan your site layout to reduce site erosion. In addition extra drainage and discharge areas may be needed to prevent further problems. 3B.
- 4 Manage within the sediment control zone**
The sediment control zone should be as close to works as possible and within the catchment area and other control measures. In addition, by limiting the amount of material supplied to only what is needed, taking responsibility for delivery placement and covering stockpiles with waterproof covers, reductions in time and material waste can be achieved!
- 5 Sediment control methods**
In many cases this is the front door and most public area of a site. It is important to control any sediment and ensure that it is not allowed to run off the site, resulting in further problems within the public domain. There are several simple filter methods that can be employed to do this. These methods include: sediment fences, a healthy vegetation buffer zone, decanting earth bund (DEB), or sump inlet protection. Depending on the site and combination of control measures used, effective sediment control can be achieved.
- 6 Vegetation buffer**
To ensure the minimum loss of soil, it is important to reduce the amount lost through general works and drainage. The easiest way to stop this loss is to leave a cover of healthy vegetation over as much of the site as possible. A promulc/suppression blanket will also do the job. These methods not only filter excess water.
- 7 Manage litter and building wastes**
A tidy site is a healthy and efficient site, so keeping a tidy and litter free site is important. This is particularly so for 'wet trades' (especially concrete). These should be cleaned up on site and any contaminated water should be captured by your sediment control measures.
- 8 Connect all down pipes**
Research shows that by connecting these pipes as early as possible site flooding and down time after rain can be significantly reduced, thus shortening total building time and related costs.
- 9 Service trenching**
In order to prevent service trenching from becoming a source of sediment, a few extra steps can be taken. Make sure to plan and coordinate services connection so all are done at the same time (three days max) and within a seasonally dry period of the build. Consider and plan the trench, making sure to pile earth above the trench to divert surface water away and avoid trenching in areas prone to water pooling. Once finished, ensure that backfill is properly compacted and filled to a level of at least 75-100mm above the ground level to allow for some subsidence and prevent it becoming a water channel.
- 10 Maintaining and decommissioning of site**
After investing in sediment control measures, it is important to ensure they are properly maintained and working effectively throughout your build. Daily checks and the correct removal of built up sediment should be employed to make the most of your control measures. Careful decommissioning will also allow for materials to be re-used on the next job, while regeneration of vegetation or stabilising the site will ensure improved kerbside appeal.



IZONE

SOUTHERN BUSINESS HUB

©2008 IZONE

If you are unsure about any of the details contained in this document or would like to discuss any of the points covered within please phone **0800 569 455**



For all enquiries regarding Izone please
contact the Development Manager:
RD Hughes Developments Limited,
PO Box 848, Christchurch,
Ph: 03 379-2609, Fax: 03 379 2609,
Email: izone@rdhdev.co.nz



I Z O N E

SOUTHERN BUSINESS HUB