Suite 5, 28 Young Street, MOONEE PONDS, VIC 3039
1300 678 279
Email: info@empirethermal.com.au

Empire Thermal Group

Proposed Townhouse Development
255-257 Plantation Road, Corio

Site Management Plan (SMP)
Prepared for Misk Design

November 2025

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1300 678 279
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Initiatives to be added to plans

- Add relevant rainwater tank size and suitable location
- Add a note for water fittings/fixtures
    - Showerhead – 4 Star Wels
    - Kitchen Tap – 5 Star Wels
    - Bathroom Tap – 5 Star Wels
    - WC – 4 Star Wels
    - Dishwasher 3 Star Wels
- Add a note - The development will commit to a NatHERS Rating of 7 Stars across the development
- Add a note - At least 50% of all external lights will also be controlled by motion detector.
- Add a note - The development will commit to energy efficient lighting by using LED lighting to a maximum of 4W/sqm or less which represents a 20% improvement on the current building regulations.
- Add a note - DG to all habitable room windows *** add this to the floor plan or label each window on your TP drawings
- Bicycle Parking to be shown within the side setbacks of the dwellings close to the garages, if there is no space in the garage areas. 2 visitors spaces to be provided in a common area.
- Heating & Cooling systems to have an energy efficiency of 4 Stars
- Type of Hot Water System – Electric Heat Pump within one Star, or 85% or better than the most efficient equivalent capacity unit available

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Site Management Plan (SMP)

Proposed Unit Development

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Appendix 1 – WSUD Maintenance & Installation
Appendix 2 – Blue Factor Report
Appendix 3 – BESS Report
Appendix 4 – Stormwater Management During Construction

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1300 678 279
Email: info@empirethermal.com.au

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INTRODUCTION

Empire Thermal Group has been engaged to undertake a Sustainable Design Assessment for the proposed unit development at 255-257 Plantation Road, Corio. This has been prepared to address the Greater Geelong City Council's sustainability requirements for the planning permit.

This development has been assessed using the BESS Assessment tool (www.bess.net.au) and covers these key categories:

- Construction & Building Management
- Water Efficiency
- Energy Efficiency
- Stormwater Management
- Indoor Environmental Quality
- Transport
- Waste Management
- Urban Ecology
- Innovation

The BESS Assessment Tool was created to assist builders and developers to demonstrate that they meet sustainability information requirements as part of planning permit applications by achieving a minimum benchmark score of 50%. The above development has achieved this by implementing sustainable design principles to achieve best practice.

Once the development is completed, a building user's guide will be developed for use by occupants and building maintenance. This guide should use non-technical language and be targeted to the occupants (and building managers where required). This guide may be a simple booklet and/or a combination of interpretative signage throughout the building and its purpose is to help facilitate more sustainable behaviour by building occupants.

Together with this report, the following supporting documentation has also been provided:

- BESS Report
- Blue Factor Rating Report

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1300 678 279
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IMPLEMENTATION SCHEDULE

The ESD initiatives set out in this report will be coordinated by the Development Manager in conjunction with the following project design team members:

- Architect
- Thermal Performance Assessor
- Building Services Consultant
- Structural Engineer

An implementation schedule is set out in the following table

ESD Category	Initiative	Requirement	Responsibility	Stage
General	ESD Drawings WSUD Plan	Architect to work alongside ESD Consultant to create at least two separate plans	Architect / Thermal Performance Assessor	Design & Permit Application
General	Coordination of Initiatives	Full implementation	Development Manager	All
Building Management	Supplying Council with Preliminary NatHERS Certificates	Provide Preliminary NatHERS Certificates to council in line with BESS requirements	Architect / Thermal Performance Assessor	Permit Application
Water	Water Efficiency	All appliances provided in the dwellings as part of the base building works will be selected within two WELS stars of best available	Architect/ Plumber	Design Development / Construction
Water	Rainwater Harvesting	Design and specify rainwater harvesting system including toilet flushing and irrigation system	Services Engineer / Plumber	Design Development / Construction
Water	Water Efficient Landscaping	Landscape Architect to ensure selection of water-efficient landscaping	Architect	Design Development
Energy	Heating & Cooling	4 Star rated heating and cooling systems	Architect / Mechanical Contractor	Design Development / Construction
Energy	Energy Efficient Appliances	All appliances provided in the dwellings as part of the base building works will be selected within two energy	Architect / Contractor	Design Development / Construction

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		efficient stars of best available		
Energy	Indoor Lighting	A Lighting level of 4W/m2 will not be exceeded in the units and 6W/m2 in common areas	Architect / Electrician	Design Development / Construction
Energy	External Lighting	External Lighting will be LED and will have controls (e.g motion detectors) to minimise consumption during off peak times	Architect / Electrician	Design Development / Construction
Indoor Environment Quality	Double Glazed Windows	To match windows as per NathHERS Certificates	Thermal Performance Assessor / Architect	Design Development
Indoor Environment Quality	Orientation	To be demonstrated on all plans. Living Areas to be orientated to gain passive solar heating from northern aspect	Architect	Design Development
Transport	Bicycle Facilities	Specify on plans	Architect	Design Development
Waste	Operational Waste Management	Specify bin and associated waste management equipment	Architect	Design Development
Waste	Construction Waste Minimisation	Prepare construction waste minimisation plan	Builder	Pre-Construction
Urban Ecology	Vegetated Site Coverage	Percentage of site to match the landscape plan, all covered areas included	Architect	Design Development
Innovation	Non-toxic Durable Materials	Materials used in this dwelling will have longer warranties were possible and will be non toxic. All external materials used to construct the building will be long lasting and non toxic	Architect / Contractor	Design Development / Construction
General	Commissioning & Maintenance	Commission and tune all equipment in accordance with performance standards and targets	Builder	Construction/Occupancy

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1.0 INDOOR ENVIRONMENT QUALITY (IEQ)

Objectives:

- To achieve a healthy indoor environment quality for the wellbeing of building occupants, including the provision of fresh air intake, cross ventilation, and natural daylight.
- To achieve thermal comfort levels with minimised need for mechanical heating, ventilation and cooling.
- To reduce indoor air pollutants by encouraging use of materials with low toxic chemicals.
- To reduce reliance on mechanical heating, ventilation, cooling and lighting systems.
- To minimise noise levels and noise transfer within and between buildings and associated external areas.

Considerations:

- **Reduction in volatile organic compounds**
  All paints, adhesives and sealants will have low VOC content or no VOC content such as:
  https://www.dulux.com.au/applicator/technical-advice/application/low-voc-paints
  https://www.taubmans.com.au/painters/pure-performance-interior
  http://www.haymespaint.com.au/products/product-information/category/interior-paints

- **Ventilation**
  To increase access to better ventilation, openable windows and doors with window locks and door catches will be accessible to increase cross flow ventilation and allow occupants to have access to fresh air. Dedicated ducts to all exhaust fans will also be adopted and these will be exhausted directly out of the building.

- **Access to Daylight**
  It is recommended that light internal colours are to be used in order to improve daylight reflection in the rooms. All bedrooms and living room areas have windows provided in order to allow for natural sunlight to enter these spaces and there are no bedrooms or living areas which rely on borrowed daylight from adjoining rooms. The installation of mirrored wardrobe doors is also recommended to further improve the spread of daylight throughout the bedrooms.

- **Double Glazing**
  Double glazing has been provided to all windows and glazed doors throughout the development to provide comfortable indoor spaces and reduce energy needed for heating and cooling.

- **Shading**
  Fixed external shading devices to all north facing glazing of all habitable room windows using a fixed overhang (such as an eave).

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1300 678 279
Email: info@empirethermal.com.au

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2.0 ENERGY EFFICIENCY

Objectives:

- To improve the efficient use of energy, by ensuring development demonstrates design potential for ESD initiatives at the planning stage.
- To reduce total operating greenhouse gas emissions.
- To reduce energy peak demand through particular design measures (eg. Appropriate building orientation, shading to glazed surfaces, optimise glazing to exposed surfaces, space allocation for solar panels and external heating and cooling systems).

Considerations:

- **Heating & Cooling system types and associated energy-efficiency rating/benchmark**
  Heating and cooling systems will be within one Star, or Coefficient of Performance (CoP) & Energy Efficiency Ratios (EER) 85% or better than the most efficient equivalent capacity unit available.

- **Hot water system type and associated energy-efficiency rating/benchmark**
  Water heating systems within one Star, or 85% or better than the most efficient equivalent capacity unit available

- **Lighting Strategy**
  The development will commit to energy efficient lighting by using LED lighting to a maximum of 4W/sqm or less which represents a 20% improvement on the current building regulations. At least 50% of all external lights will also be controlled by motion detector.

- **Clothes Drying**
  Each dwelling in the development will be provided with a fixed private outdoor clothesline in order to reduce the need for mechanical drying from a clothes dryer.

- **NATHERS Energy Rating Assessments**
  The development has committed to achieving a minimum average star rating of 7 stars across the development.

- **Photovoltaic Panels**
  The development will commit to providing provisions for Solar PV system including wiring from roof to meter box.

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1300 678 279
Email: info@empirethermal.com.au

3.0 WATER EFFICIENCY

Objectives:

- To improve water efficiency.
- To reduce total operating potable water use.
- To encourage the collection and reuse of stormwater.
- To encourage the appropriate use of alternative water sources (eg. Greywater).

Considerations:

- **Water-efficiency rating of new fixtures and fittings**
  The development will include water efficient fittings and fixtures to reduce the amount of mains water used by adopting the following WELS star ratings:
  Showerheads – 4 Star Wels (>=6.0 but <=7.5)
  Kitchen & Bathroom Taps – 5 Star Wels
  WC – 4 Star Wels
  Dishwashers – 3 Star Wels

- **Rainwater Tanks**
  Rainwater from the roof area will runoff and be collected and stored in rainwater tanks. Each dwelling will be provided with wither a 3,000 or 2,500 litre tank. Location of water tanks is indicated on the plans. Rainwater will be used to flush toilets. These results will assist in reducing the stormwater impacts of the development and help to achieve compliance with the Blue Factor calculator.

  Rainwater runoff from the roof areas of the new dwellings will be collected and stored in Rainwater Tanks (Location as per plan). The proposed capacity of the rainwater tank is a 3,000 or 2,500 litre tank.

  If required, a charged pipe system or mechanically assisted system (pumped) or multiple tanks will be installed to collect water from part of the roof of each dwelling.
  In the case of a charged pipe system, the pipes will not be running underneath the building footprint (slab) and the stakeholders (builder/developer/architect) will be required to explicitly acknowledge this solution and have the capacity to install it.

- **Provisions for a more water efficient landscaping**
  Water efficient landscaping will be used in this development which includes the use of low water plant selection and if required water efficient drip irrigation with timers and rain sensors will be installed and connected to water tanks.

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4.0 STORMWATER MANAGEMENT

Objectives:

- To reduce the impact of stormwater run-off.
- To improve the water quality of stormwater run-off.
- To achieve best practice stormwater quality outcomes.
- To incorporate the use of water sensitive urban design, including stormwater re-use.

Considerations:

- **Blue Factor Calculations**
  Blue Factor tool was used to model best practice for stormwater management of the development with a minimum score of 100 required to achieve full compliance. The development has achieved a score of 116 as per the attached Blue Factor Report.

Project # 9520D265 - 255-257 Plantation Road, Corio
255-257 Plantation Rd, Corio VIC 3214, Australia
03 November 2025 6:07 p.m.

BLUE FACTOR.

255-257 Plantation Road, Corio

The proposed stormwater treatments provide 'deemed to comply' compliance with the minimum planning requirement for total nitrogen but does not comply with all the relevant objectives for management of stormwater flows on-site.

116%
SCORE

Project details

Name	255-257 Plantation Road, Corio
Street address	255-257 Plantation Rd, Corio VIC 3214, Australia
Municipality	Greater Geelong
Site area	2000 m^2
Planning Number	

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1300 678 279
Email: info@empirethermal.com.au

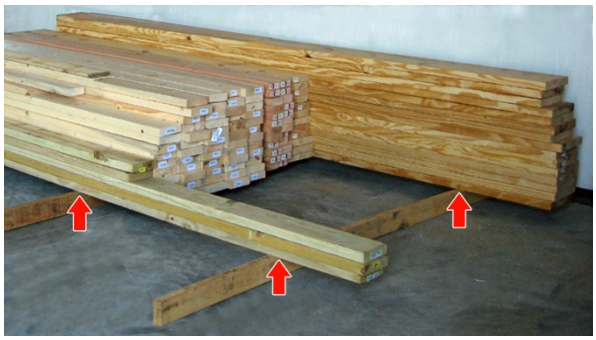
5.0 BUILDING MATERIALS

Objectives:

- To reduce the embodied energy and CO_2 impact of materials.
- To maximise the responsible sourcing materials.
- To maximise the use of recycled material.
- To maximise the reuse of materials.
- To reduce the use of material that contains high levels of VOC (or other toxic elements).

Considerations:

- **Storage for Recycling Waste**
  Recycling bins will be provided during construction next to waste bins and stored readied for pick up to make recycling easier. All reusable material will be stacked and stored in a dry place ready to return or reuse.



- **Embodied Energy**
  In order to get a lower embodied energy build, recycled materials will be used wherever possible from either the Forest Stewardship Council (FSC) or Program from the Endorsement of Forest Certificate (PEFC). Construction waste will be reused in the construction where possible and careful planning on how much material is required will be undertaken to not order more than is required.

- **Sustainable Building Materials**
  Subject to structural engineer's approval, the development where possible will attempt to use Supplementary Cementing Materials (SCM) concretes and sustainably sourced timbers.

- **Materials/Colours**
  - Low VOC paints for internal walls
  - Light/Medium colours or reflective finishes for non-visible flat roofs and concrete driveways to help mitigate the urban heat island effect

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6.0 TRANSPORT

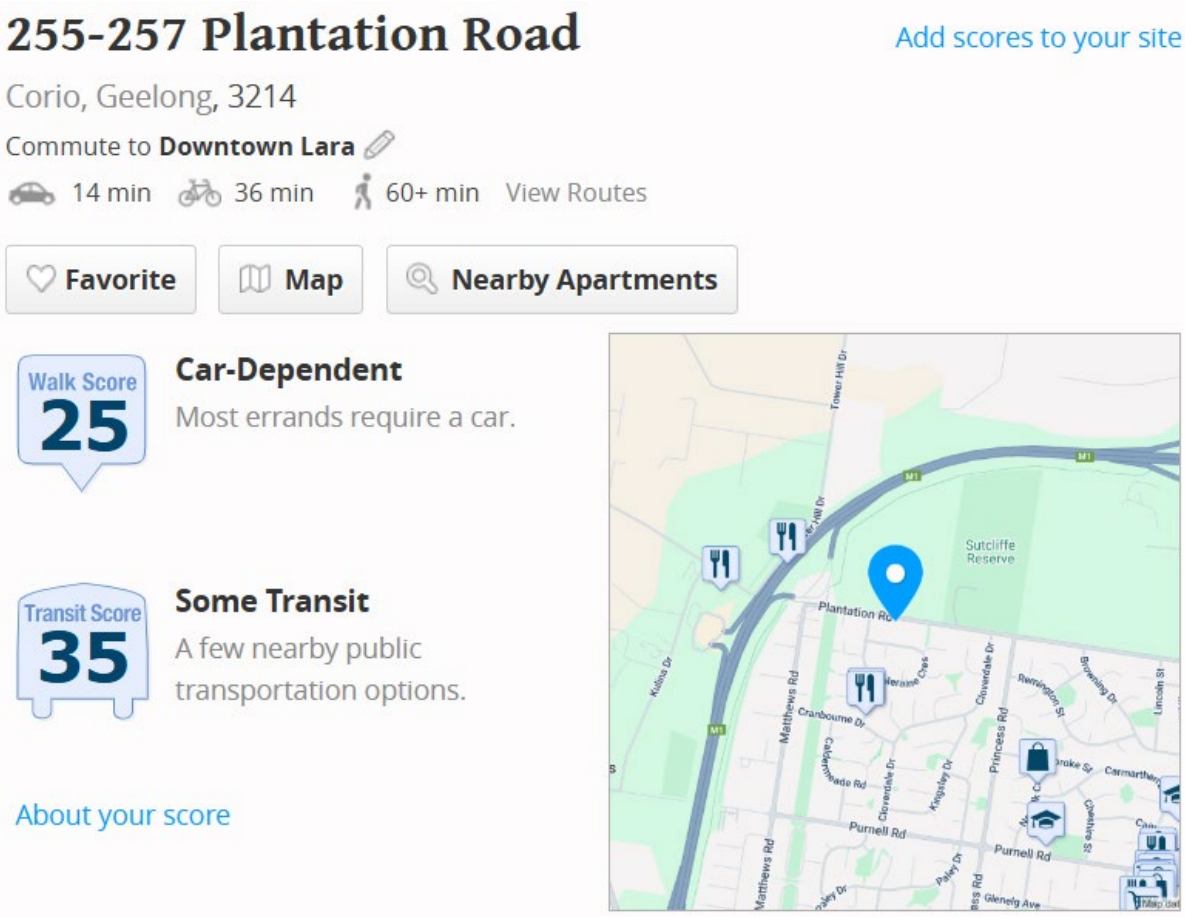
Objectives:

- To ensure that the built environment is designed to promote the use of walking, cycling and public transport, in that order.
- To minimise car dependency.
- To promote the use of low emissions vehicle technologies and supporting infrastructure.

Considerations:

- **Provide convenient and secure bike storage facilities for building users**
  The development will provide at least one secure bicycle space per dwelling to encourage alternative means of transport and two visitor bicycle spaces.

- **Access to public transport**
  The site has been assessed using the walk score tool which measures the walkability of any address as well as its transit score which measures access to public transport. The walk score methodology was developed with the Walk Score advisory board and has been validated by leading academic researchers.



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7.0 WASTE MANAGEMENT

Objectives:

- To promote waste avoidance, reuse and recycling during the design, construction and operation stages of development.
- To ensure durability and long-term reusability of building materials.
- To ensure sufficient space is allocated for future change in waste management needs, including (where possible) composting and green waste facilities.

Considerations:

- **Allocated space(s) for general waste, recycling and green waste**
  Each dwelling will be provided with bins for both general and recycling waste and will be located next to each other to encourage good recycling practice.

- **Construction Waste Management Plan**
  Recycling & waste bins will be provided during construction and all reusable material will be stacked and stored in a dry place ready to return or reuse. A waste management plan will be provided to all staff and contractors at a staff or contractor orientation session to ensure that the waste generated on site is minimised and disposed of correctly. The development will target 70% of all construction waste generated on site will be reused or recycled.

- **Food & Garden Waste**

  Greater Geelong City Council provides residents access to compost bins and worm farms for management of food and garden waste. More information can be found at https://www.geelongaustralia.com.au/recycling/reduce/article/item/8cb3eec42fc7c36.aspx

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8.0 URBAN ECOLOGY

Objectives:

- To protect and enhance biodiversity within the municipality.
- To provide environmentally sustainable landscapes and natural habitats, and minimise the urban heat island effect.
- To encourage the retention of significant trees.
- To encourage the planting of indigenous vegetation.
- To encourage the provision of space for productive gardens, particularly in larger residential developments.

Considerations:

- **Landscaped areas to be designated**
  A total of 32% of the land has been covered with vegetation. It is encouraged that mostly native or indigenous plants are to be used throughout the development.

- **Retention and inclusion of native vegetation**
  Drought tolerant and native vegetation will be incorporated into the proposal. Please refer to the Landscape Plan for further details.

- **Season heat control**
  The use of new deciduous canopy trees within the front setback and within the private open spaces may assist with blocking the summer sun whilst maximising solar gain in winter.

- **Irrigation**
  Irrigation connection to the rainwater tanks has been proposed as well as drought tolerant vegetation and landscaping incorporated into the proposal. Please refer to the Landscape Plan for further details.

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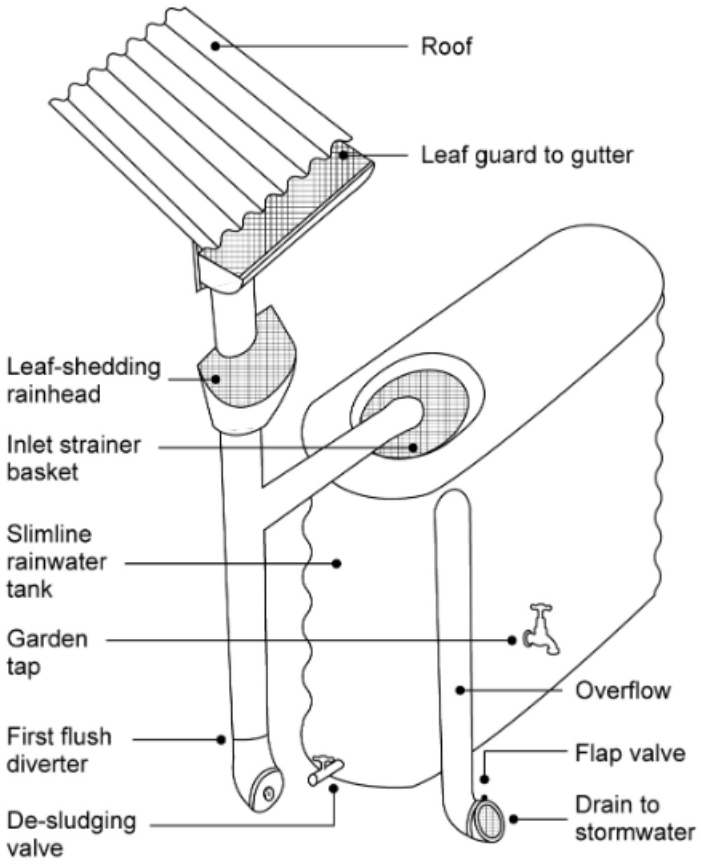
9.0 APPENDIXES

Appendix 1 – WSUD Maintenance & Installation

Installation

Rainwater Tank(s)

The rainwater tank(s) will be installed above ground near the plant room. Its manufacturer or material has not been nominated. It will be installed with a mesh insect cover over the inlet pipe to ensure the tank does not become a breeding ground for pests. Mesh needs to be installed over overflow pipes and if a manhole is present it needs to be properly sealed.



Please refer to the architectural drawings for the location of the rainwater tank.

Pumps

The pumps required either to divert the stormwater runoff to the rainwater tank or to distribute the collected water to the end uses (toilets and laundries) will be required to be installed as per the chosen manufacturer specifications.

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9.0 APPENDIXES

Appendix 1 – WSUD Maintenance & Installation

Inspection Requirements

Rainwater Tanks

Inspections of roof areas and gutters leading to the tank should take place every 6 months. Rainwater in the tanks should be checked every 6 months for mosquito infestation. The rainwater tank should be examined every 2 years for sludge build up. Ensure the monitoring system (be it digital or a simple float system) is functioning properly by checking the water level in the rainwater tanks.

Pumps

The pumps required will be required to be routinely inspected by listening for the day-to day operation of the pumps. Unusual noise or no noise should be investigated. Inspection should occur as per the chosen manufacturer specifications.

Clean Out / Maintenance Procedure

Rainwater Tank, Roof and Gutters

Rainwater tanks will require the roof and gutters onsite to be maintained; gutters should be checked, maintained and cleaned every six months to avoid blockages from occurring. If a leaf blocking system is installed this can be completed annually. Any trees onsite should be maintained every 6 months with branches overhanging the roof removed.

Water ponding in gutters should be avoided as this provides a breeding ground for mosquitos; tanks should also not become breeding grounds for mosquitoes. If mosquitoes are detected in the tank remedial steps need to occur to prevent breeding. If mosquitoes or other insects are found in rainwater tanks, the point of entry should be located and repaired. As well as preventing further access, this will prevent the escape of emerging adults. Gutters should be inspected to ensure they do not contain ponded water, and be cleaned if necessary. Please refer to

http://www.health.gov.au/internet/publications/publishing.nsf/Content/ohpenhealth-raintank-cnt-l~ohp-enhealth-raintank-cnt-l-5~ohp-enhealth-raintank-cnt-l-5.5 for more information on mosquito control.

Rainwater tanks should be checked by regular maintenance person every 3-6 months to ensure that connection to the building is maintained and there are no blockages.

Pumps

Maintenance should occur as per the chosen manufacturer specifications. All strainers and filters should be cleaned every 6 months. Good quality pump should provide trouble free service for up to 10 years.

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9.0 APPENDIXES

Appendix 1 – WSUD Maintenance & Installation

Commissioning

Rainwater Tank

All rainwater tanks should be washed or flushed out prior to use. All inlets and outlets should be correctly sealed to prevent insects entering. Connection to all toilets and laundries in the development should be tested (dye test or equivalent). Please note if new roof coating or paint is to be installed then the first few run-offs after installation need to be discarded.

Pumps

Commissioning should occur as per the chosen manufacturer specifications.

BLUE FACTOR®

255-257 Plantation Road, Corio

The proposed stormwater treatments provide 'deemed to comply' compliance with the minimum planning requirement for total nitrogen but does not comply with all the relevant objectives for management of stormwater flows on-site.

116%
SCORE

Project details

Name	255-257 Plantation Road, Corio
Street address	255-257 Plantation Rd, Corio VIC 3214, Australia
Municipality	Greater Geelong
Site area	2000 m^2
Planning Number	

Flow and pollutant load reductions

Item	Result	Target
Mean annual runoff volume harvested or evapotranspired (%)	51%	>28%
Mean annual runoff volume infiltrated or filtered (%)	64%	>9%
Total suspended solids (%)	57%	>80%
Total phosphorus (%)	55%	>45%
Total nitrogen (%)	52%	>45%
Total gross pollutants (%)	63%	>70%

Water treatment

Catchments

Treated Roof Area 860.76m2

Untreated Roof 270.9m2

Driveways / Accessways Paved, 205.3m2

Permeable Areas Pervious (garden and lawn), 663m2

Treatments

Rainwater Tank 1-10
Rainwater tank retention volume in kilolitres: 27

Buildings & dwellings

Building 1-10 Residential Townhouse, 30 bedroom(s)

Configuration 1

Treated Roof Area 860.76m2

Rainwater Tank 1-10
Rainwater tank retention volume in kilolitres: 27,

Building 1-10 Residential Townhouse, 30 bedroom(s)

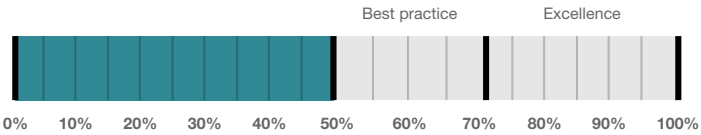
BESS Report

Built Environment Sustainability Scorecard

This BESS report outlines the sustainable design commitments of the proposed development at 255-257 Plantation Rd Corio Victoria 3214. The BESS report and accompanying documents and evidence are submitted in response to the requirement for a Sustainable Design Assessment or Sustainability Management Plan at Greater Geelong City Council.

Note that where a Sustainability Management Plan is required, the BESS report must be accompanied by a report that further demonstrates the development's potential to achieve the relevant environmental performance outcomes and documents the means by which the performance outcomes can be achieved.

Your BESS Score

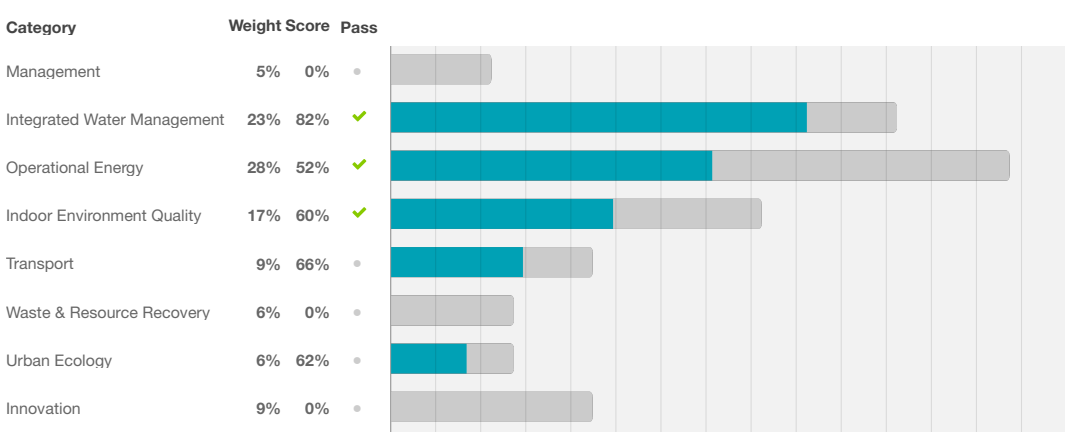


52%

Project details

Name	255-257 Plantation Road, Corio
Address	255-257 Plantation Rd Corio Victoria 3214
Project ID	C74D6B39-R1
BESS Version	BESS-9
Site type	Multi dwelling (dual occupancy, townhouse, villa unit etc)
Account	george@empirethermal.com.au
Application no.	
Site area	2,000 m²
Building floor area	3,521 m²
Date	03 November 2025
Software version	2.2.0-B.628

Performance by category



Dwellings & Non Res Spaces

Dwellings

Name	Quantity	Area	% of total area
Townhouse			
Units 2-4 & 7-9	6	473 m^2	80%
Units 1 & 10	2	184 m^2	10%
Units 5 & 6	2	158 m^2	8%
Total	**10**	**3,521 m^2**	**100%**

Supporting Evidence

Shown on Floor Plans

Credit	Requirement	Response	Status
Integrated Water Management 2.1	Location of any stormwater management systems (rainwater tanks, raingardens, buffer strips)		-
Integrated Water Management 3.1	Annotation: Water efficient garden details		-
Operational Energy 3.3	Annotation: External lighting controlled by motion sensors		-
Operational Energy 3.4	Location of clothes line (if proposed)		-
Indoor Environment Quality 2.2	Annotation: Dwellings designed for 'natural cross flow ventilation' (If not all dwellings, include a list of compliant dwellings)		-
Indoor Environment Quality 3.1	Annotation: Glazing specification (U-value, SHGC)		-
Transport 1.1	Location of residential bicycle parking spaces		-
Transport 1.2	Location of residential visitor bicycle parking spaces		-
Urban Ecology 2.1	Location and size of vegetated areas		-
Urban Ecology 2.4	Location of taps and floor waste on balconies / courtyards		-

Supporting Documentation

Credit	Requirement	Response	Status
Integrated Water Management 2.1	STORM report or MUSIC model		-
Operational Energy 3.5	Average lighting power density and lighting type(s) to be used		-
Indoor Environment Quality 2.2	A list of dwellings with natural cross flow ventilation		-
Indoor Environment Quality 3.1	Reference to floor plans or energy modelling showing the glazing specification (U-value and Solar Heat Gain Coefficient, SHGC)		-

Credit summary

Management Overall contribution 4.5%

	0%
1.1 Pre-Application Meeting	0%
2.2 Thermal Performance Modelling - Multi-Dwelling Residential	0%
4.1 Building Users Guide	0%

IWM Overall contribution 22.5%

	82%	✔ Pass
1.1 Potable Water Use	47%	✔ Achieved
2.1 Stormwater Treatment	100%	✔ Achieved
3.1 Water Efficient Landscaping	100%	

Operational Energy Overall contribution 27.5%

Minimum required 50%	52%	✔ Pass
1.2 Thermal Performance Rating - Residential	0%	✔ Achieved
2.1 Greenhouse Gas Emissions	0%	
2.6 Electrification	100%	
2.7 Energy consumption	100%	
3.3 External Lighting	100%	
3.4 Clothes Drying	100%	
3.5 Internal Lighting - Houses and Townhouses	100%	
4.4 Renewable Energy Systems - Other	N/A	✣ Scoped Out
No other (non-solar PV) renewable energy is in use.		
4.5 Solar PV - Houses and Townhouses	0%	⊘ Disabled
No solar PV renewable energy is in use.		

IEQ Overall contribution 16.5%

Minimum required 50%	60%	✔ Pass
2.2 Cross Flow Ventilation	100%	
3.1 Thermal comfort - Double Glazing	100%	
3.2 Thermal Comfort - External Shading	0%	
3.3 Thermal Comfort - Orientation	0%	

Transport Overall contribution 9.0%

66%

1.1 Bicycle Parking - Residential		100%
1.2 Bicycle Parking - Residential Visitor		100%
2.1 Electric Vehicle Infrastructure		0%

Waste & Resource Recovery Overall contribution 5.5%

0%

1.1 Construction Waste - Building Re-Use		0%
2.1 Operational Waste - Food & Garden Waste		0%

Urban Ecology Overall contribution 5.5%

62%

2.1 Vegetation		100%
2.2 Green Roofs		0%
2.3 Green Walls and Facades		0%
2.4 Balconies, Courtyards & Roof terraces		100%
3.1 Food Production - Residential		0%

Innovation Overall contribution 9.0%

0%

1.1 Innovation		0% ⊘ Disabled
	Achieve a project score of 50% or above to enable this credit.	

Credit breakdown

Management Overall contribution 4.5%

	0%

1.1 Pre-Application Meeting		0%
Score Contribution	This credit contributes 50% towards the category score.	
Criteria	Has an ESD professional been engaged to provide sustainability advice from schematic design to construction? AND Has the ESD professional been involved in a pre-application meeting with Council?	
Question	Criteria Achieved ?	
Project	No	
2.2 Thermal Performance Modelling - Multi-Dwelling Residential		0%
Score Contribution	This credit contributes 33.3% towards the category score.	
Criteria	Have preliminary NatHERS ratings been undertaken for all thermally unique dwellings?	
Question	Criteria Achieved ?	
Townhouse	No	
4.1 Building Users Guide		0%
Score Contribution	This credit contributes 16.7% towards the category score.	
Criteria	Will a building users guide be produced and issued to occupants?	
Question	Criteria Achieved ?	
Project	No	

IWM Overall contribution 22.5%

82% ✔ Pass

Do you have a reticulated third pipe or an on-site water recycling system?:	No
Are you installing a swimming pool?:	No
Stormwater profile	
Which stormwater modelling software are you using?:	Melbourne Water STORM tool
STORM score achieved:	116
Flow:	-
Total Suspended Solids:	-
Total Phosphorus:	-
Total Nitrogen:	-
Rainwater tank profile	
What is the total roof area connected to the rainwater tank?: Rainwater Tanks 1-10	861 m²
Tank Size: Rainwater Tanks 1-10	27,000 Litres
Irrigation area connected to tank: Rainwater Tanks 1-10	460 m²
Is connected irrigation area a water efficient garden?: Rainwater Tanks 1-10	Yes
Other external water demand connected to tank?: Rainwater Tanks 1-10	0.0 Litres/Day
Fixtures, fittings & connections profile	
Showerhead: All	4 Star WELS (>= 6.0 but <= 7.5)
Bath: All	Scope out
Kitchen Taps: All	>= 5 Star WELS rating
Bathroom Taps: All	>= 5 Star WELS rating
Dishwashers: All	>= 3 Star WELS rating
WC: All	>= 4 Star WELS rating
Urinals: All	Scope out
Washing Machine Water Efficiency: All	Occupant to Install
Which non-potable water source is the dwelling/space connected to?: All	236235
Non-potable water source connected to Toilets: All	Yes
Non-potable water source connected to Laundry (washing machine): All	No
Non-potable water source connected to Hot Water System: All	No
1.1 Potable Water Use	47% ✔ Achieved

Score Contribution	This credit contributes 33.3% towards the category score.
Criteria	What is the reduction in total potable water use due to efficient fixtures, appliances, rainwater use and recycled water use? To achieve points in this credit there must be >25% potable water reduction.
Output	Reference
Project	2659 kL
Output	Proposed (excluding rainwater and recycled water use)
Project	2205 kL
Output	Proposed (including rainwater and recycled water use)
Project	1849 kL
Output	% Reduction in Potable Water Consumption
Project	30 %
Output	% of connected demand met by rainwater
Project	79 %
Output	How often does the tank overflow?
Project	Sometimes
Output	Opportunity for additional rainwater connection
Project	932 kL

2.1 Stormwater Treatment 100% ✔ Achieved

Score Contribution	This credit contributes 60% towards the category score.
Criteria	Has best practice stormwater management been demonstrated?
Output	Min STORM Score
Project	100
Output	STORM Score
Project	116

3.1 Water Efficient Landscaping 100%

Score Contribution	This credit contributes 6.7% towards the category score.
Criteria	Will water efficient landscaping be installed?
Question	Criteria Achieved ?
Project	Yes

Operational Energy Overall contribution 27.5%

		Minimum required 50%	52%	✔ Pass

Are you installing any renewable energy system(s) (other than solar photovoltaic)?:	No
Energy Supply:	All-electric

Dwellings profile

Below the floor is: All	Ground or Carpark
Above the ceiling is: All	Outside
Exposed sides:	
Units 1 & 10 Units 5 & 6	3
Units 2-4 & 7-9	2
NatHERS Annual Energy Loads - Heat: All	126 MJ/sqm
NatHERS Annual Energy Loads - Cool: All	31.4 MJ/sqm
NatHERS star rating: All	7.0
Type of Heating System: All	Reverse cycle space
Heating System Efficiency: All	4 Stars (2011 MEPS)
Type of Cooling System: All	Refrigerative space
Cooling System Efficiency: All	4 Stars (2011 MEPS)
Type of Hot Water System: All	Electric Heat Pump Band 1
% Contribution from solar hot water system: All	0 %
Clothes Line: All	Private outdoor clothesline
Clothes Dryer: All	No clothes dryer

1.2 Thermal Performance Rating - Residential		0%	✔ Achieved

Score Contribution	This credit contributes 17.6% towards the category score.
Criteria	What is the average NatHERS rating?
Output	Average NATHERS Rating (Weighted)
Townhouse	7.0 Stars

2.1 Greenhouse Gas Emissions		0%

Score Contribution	This credit contributes 17.6% towards the category score.
Criteria	What is the % reduction in annual greenhouse gas emissions against the benchmark?
Output	Reference Building with Reference Services (BCA only)
Townhouse	47,273 kg CO2
Output	Proposed Building with Proposed Services (Actual Building)
Townhouse	44,265 kg CO2
Output	% Reduction in GHG Emissions
Townhouse	6 %

2.6 Electrification		100%

Score Contribution	This credit contributes 17.6% towards the category score.
Criteria	Is the development all-electric?
Question	Criteria Achieved?
Project	Yes

2.7 Energy consumption 100%

Score Contribution	This credit contributes 23.5% towards the category score.
Criteria	What is the % reduction in annual energy consumption against the benchmark?
Output	Reference Building with Reference Services (BCA only)
Townhouse	376,053 MJ
Output	Proposed Building with Proposed Services (Actual Building)
Townhouse	201,715 MJ
Output	% Reduction in total energy
Townhouse	46 %

3.3 External Lighting 100%

Score Contribution	This credit contributes 2.9% towards the category score.
Criteria	Is the external lighting controlled by a motion detector?
Question	Criteria Achieved ?
Townhouse	Yes

3.4 Clothes Drying 100%

Score Contribution	This credit contributes 5.9% towards the category score.
Criteria	What is the % reduction in annual energy consumption (gas and electricity) from a combination of clothes lines and efficient driers against the benchmark?
Output	Reference
Townhouse	7,535 kWh
Output	Proposed
Townhouse	1,507 kWh
Output	Improvement
Townhouse	80 %

3.5 Internal Lighting - Houses and Townhouses 100%

Score Contribution	This credit contributes 2.9% towards the category score.
Criteria	Does the development achieve a maximum illumination power density of 4W/sqm or less?
Question	Criteria Achieved?
Townhouse	Yes

4.4 Renewable Energy Systems - Other N/A ⌖ Scoped Out

No other (non-solar PV) renewable energy is in use.

This credit was scoped out	No other (non-solar PV) renewable energy is in use.

4.5 Solar PV - Houses and Townhouses 0% ⊘ Disabled

No solar PV renewable energy is in use.

This credit is disabled	No solar PV renewable energy is in use.

IEQ Overall contribution 16.5%

	Minimum required 50%	**60%**	✔ **Pass**

2.2 Cross Flow Ventilation		100%
Score Contribution	This credit contributes 20% towards the category score.	
Criteria	Are all habitable rooms designed to achieve natural cross flow ventilation?	
Question	Criteria Achieved ?	
Townhouse	Yes	
3.1 Thermal comfort - Double Glazing		100%
Score Contribution	This credit contributes 40% towards the category score.	
Criteria	Is double glazing (or better) used to all habitable areas?	
Question	Criteria Achieved ?	
Townhouse	Yes	
3.2 Thermal Comfort - External Shading		0%
Score Contribution	This credit contributes 20% towards the category score.	
Criteria	Is appropriate external shading provided to east, west and north facing glazing?	
Question	Criteria Achieved ?	
Townhouse	No	
3.3 Thermal Comfort - Orientation		0%
Score Contribution	This credit contributes 20% towards the category score.	
Criteria	Are at least 50% of main living areas orientated to the north?	
Question	Criteria Achieved ?	
Townhouse	No	

Transport Overall contribution 9.0%

	66%

1.1 Bicycle Parking - Residential	100%
Score Contribution	This credit contributes 33.3% towards the category score.
Criteria	How many secure and undercover bicycle spaces are there for residents?
Question	Bicycle Spaces Provided ?
Townhouse	10
Output	Min Bicycle Spaces Required
Townhouse	10

1.2 Bicycle Parking - Residential Visitor	100%
Score Contribution	This credit contributes 33.3% towards the category score.
Criteria	How many secure bicycle spaces are there for visitors?
Question	Visitor Bicycle Spaces Provided ?
Townhouse	2
Output	Min Visitor Bicycle Spaces Required
Townhouse	2

2.1 Electric Vehicle Infrastructure	0%
Score Contribution	This credit contributes 33.3% towards the category score.
Criteria	Are facilities provided for the charging of electric vehicles?
Question	Criteria Achieved ?
Project	No

Waste & Resource Recovery Overall contribution 5.5%

	0%

1.1 Construction Waste - Building Re-Use	0%
Score Contribution	This credit contributes 50% towards the category score.
Criteria	If the development is on a site that has been previously developed, has at least 30% of the existing building been re-used?
Question	Criteria Achieved ?
Project	No

2.1 Operational Waste - Food & Garden Waste	0%
Score Contribution	This credit contributes 50% towards the category score.
Criteria	Are facilities provided for on-site management of food and garden waste?
Question	Criteria Achieved ?
Project	No

Urban Ecology Overall contribution 5.5%

	62%

2.1 Vegetation		100%
Score Contribution	This credit contributes 50% towards the category score.	
Criteria	How much of the site is covered with vegetation, expressed as a percentage of the total site area?	
Question	Percentage Achieved ?	
Project	32 %	
2.2 Green Roofs		0%
Score Contribution	This credit contributes 12.5% towards the category score.	
Criteria	Does the development incorporate a green roof?	
Question	Criteria Achieved ?	
Project	No	
2.3 Green Walls and Facades		0%
Score Contribution	This credit contributes 12.5% towards the category score.	
Criteria	Does the development incorporate a green wall or green façade?	
Question	Criteria Achieved ?	
Project	No	
2.4 Balconies, Courtyards & Roof terraces		100%
Score Contribution	This credit contributes 12.5% towards the category score.	
Criteria	Is there a tap and floor waste on every balcony and courtyard (including any roof terraces)?	
Question	Criteria Achieved ?	
Townhouse	Yes	
3.1 Food Production - Residential		0%
Score Contribution	This credit contributes 12.5% towards the category score.	
Criteria	What area of space per resident is dedicated to food production?	
Question	Food Production Area	
Townhouse	-	
Output	Min Food Production Area	
Townhouse	11 m^2	

Innovation Overall contribution 9.0%

	0%

1.1 Innovation		0% ⊘ Disabled
		Achieve a project score of 50% or above to enable this credit.
This credit is disabled	Achieve a project score of 50% or above to enable this credit.	

Disclaimer

The Built Environment Sustainability Scorecard (BESS) has been provided for the purpose of information and communication. While we make every effort to ensure that material is accurate and up to date (except where denoted as 'archival'), this material does in no way constitute the provision of professional or specific advice. You should seek appropriate, independent, professional advice before acting on any of the areas covered by BESS.

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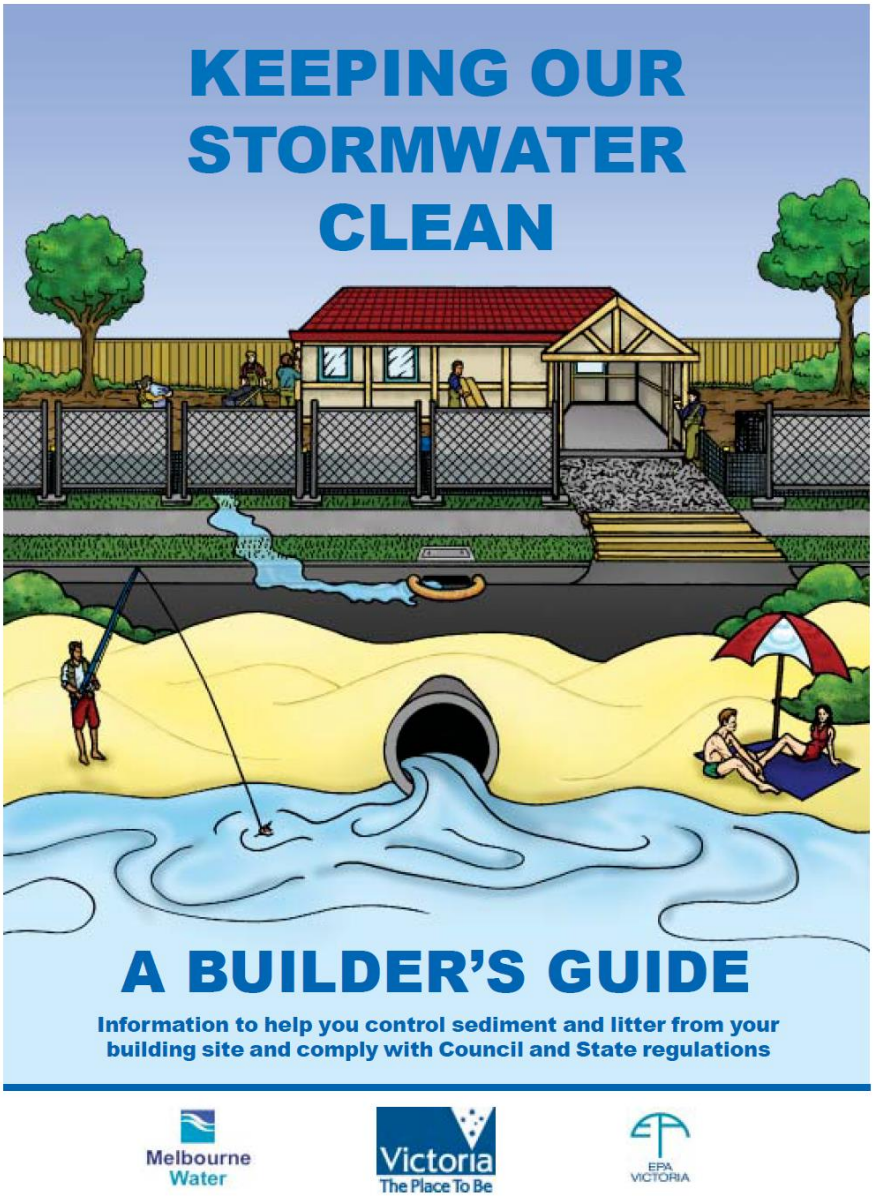
PO BOX 113, KEILOR VIC 3036
1300 678 279
Email: george@empirethermal.com.au

EMPIRE THERMAL GROUP

STORMWATER MANAGEMENT DURING CONSTRUCTION

In order to assist to control sediment and litter from the building site during construction and comply with Council and State regulations, the builder shall follow Melbourne Water's "Keeping Our Stormwater Clean: A Builder's Guide which can be downloaded at the following link:

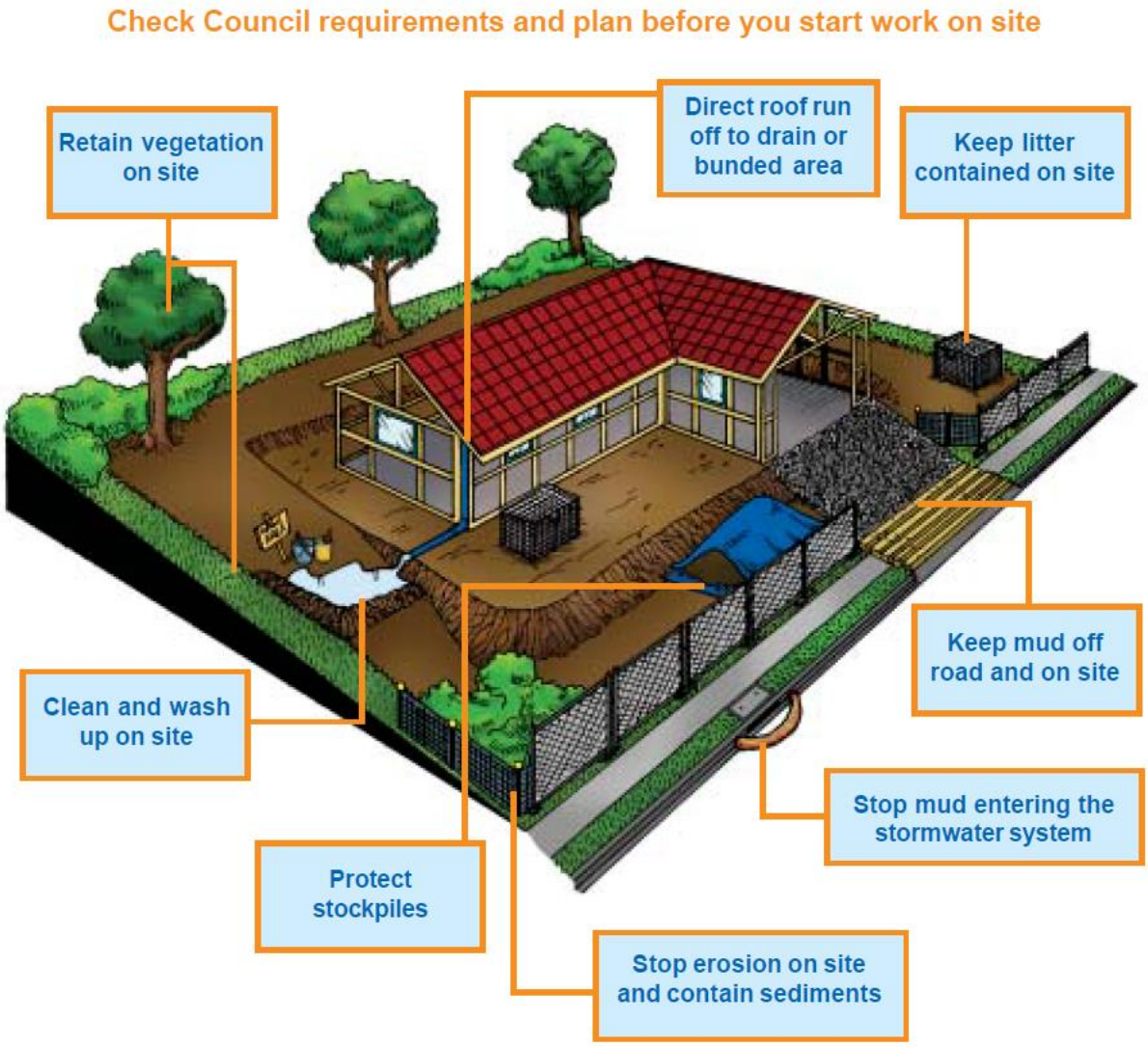
https://www.melbournewater.com.au/sites/default/files/Keeping-our-stormwater-clean-builders-guidelines.pdf



PO BOX 113, KEILOR VIC 3036
1300 678 279
Email: george@empirethermal.com.au

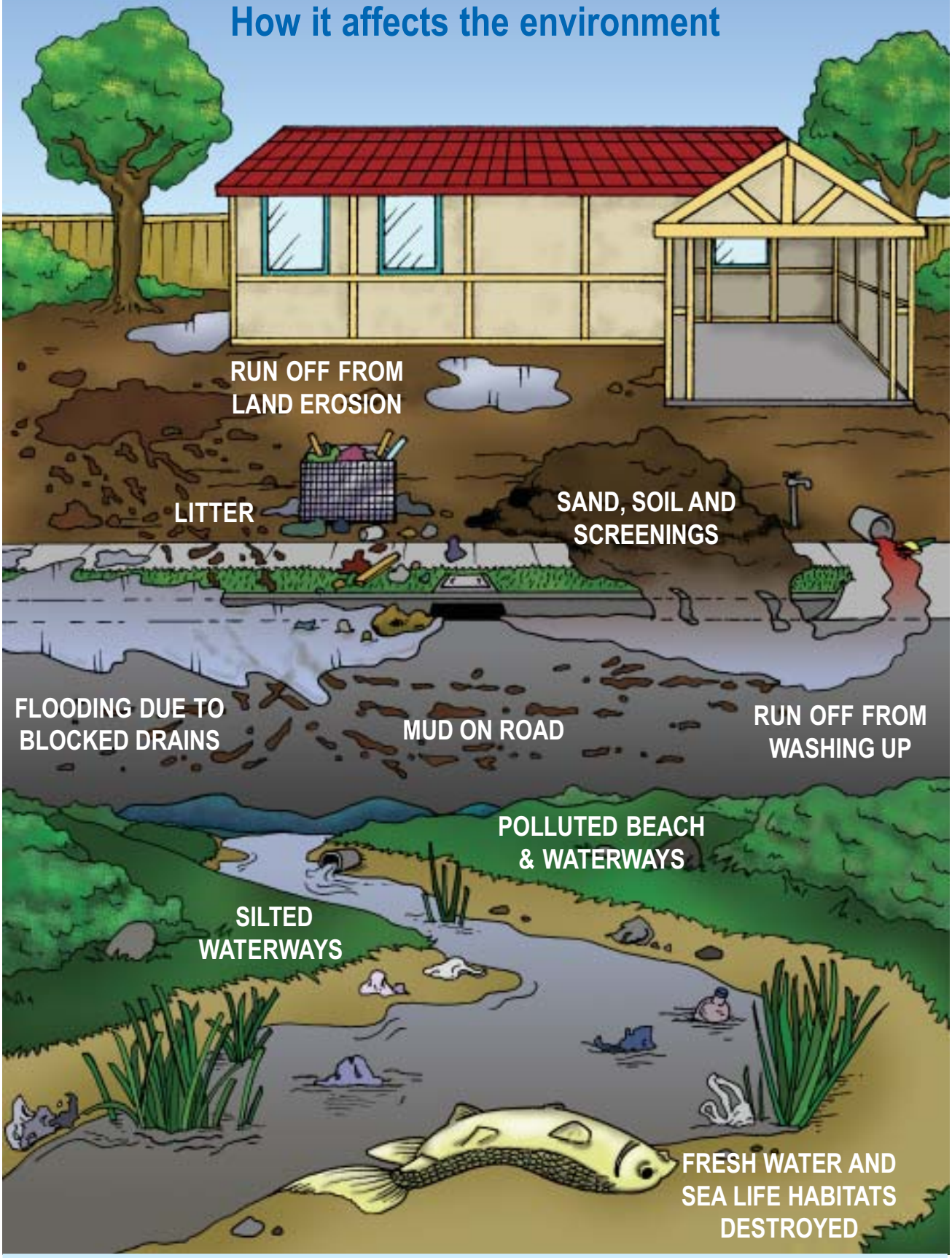
EMPIRE THERMAL GROUP

The following diagram out of the builder's guide will be implemented on site to ensure sediment & erosion control



PROBLEMS ON OUR BUILDING SITES

How it affects the environment



WHY DO I NEED TO PROTECT OUR ENVIRONMENT?

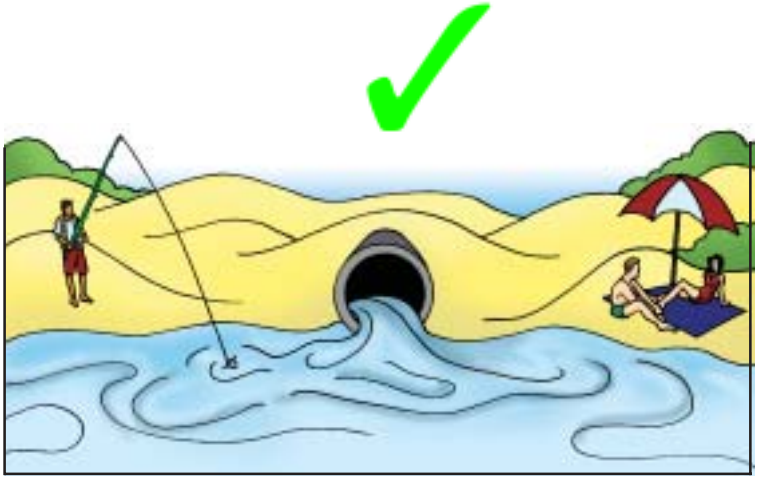
It's the law!

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
Products: silt fencing

Southern Geosynthetics Supplies
0419 478 238 www.geosynthetics.com.au
Products: Silt fences, Silt Sausages

Statewide River & Stream Management
03 9702 9757 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
Products:filter fence, silt worm, silt sock

Zerosion
0408 351 566 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
$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 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
HIA GreenSmart Program
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
See Publication 981 – Reducing stormwater pollution from construction sites
Melbourne Water
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.

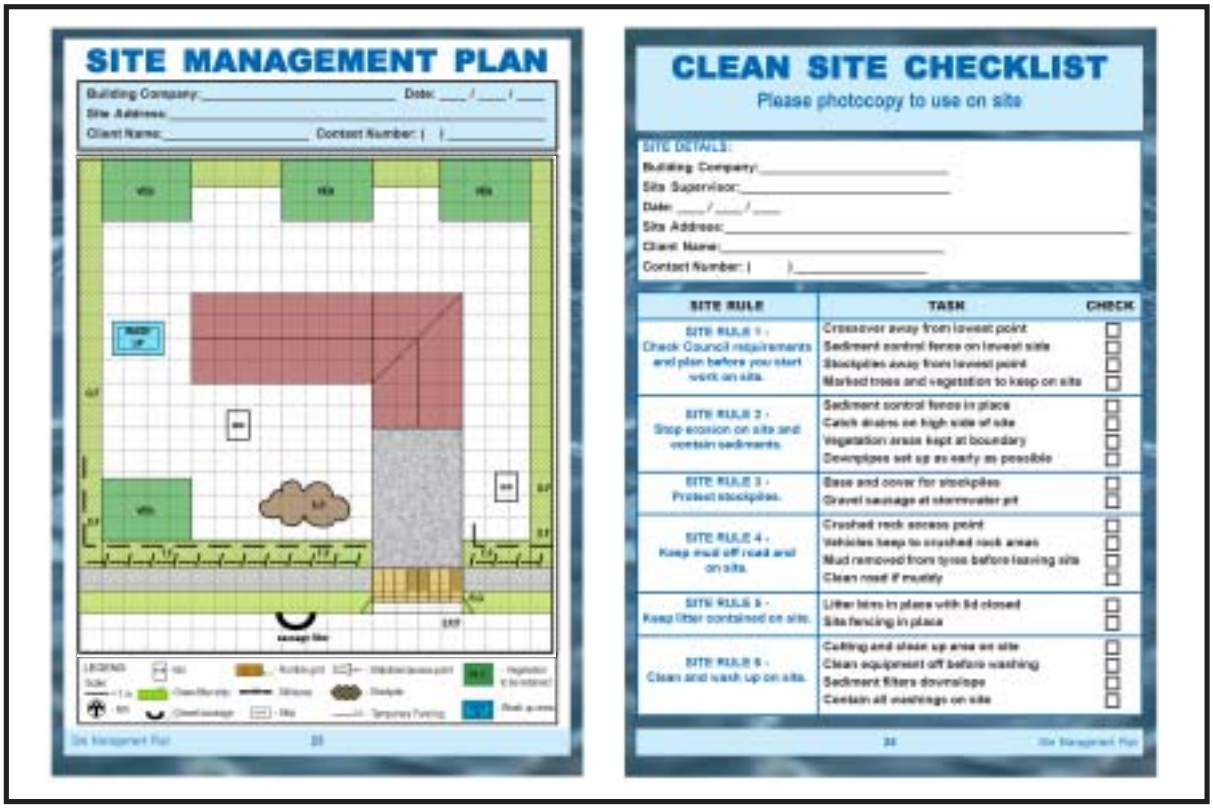
Which trees and vegetation will be kept on site?

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.]

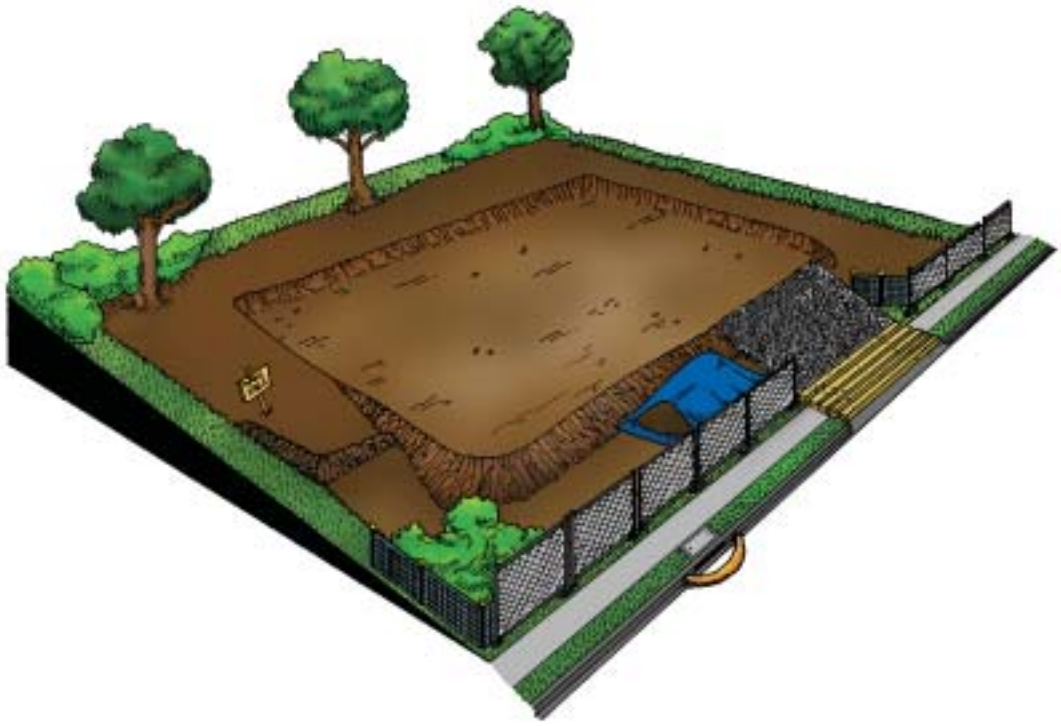
Why fence my site?

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.

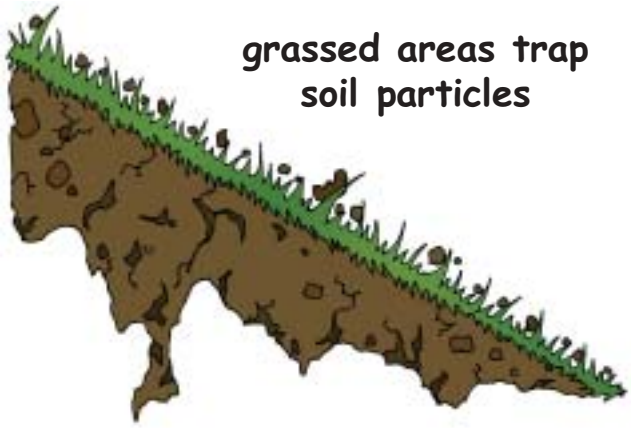
3. Cause blockages to the stormwater system including the side entry pit and pipes, increasing the chance of flooding and requiring regular cleaning.

4. Overload and clog local stormwater filtration systems such as raingardens 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.



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 bunded area.

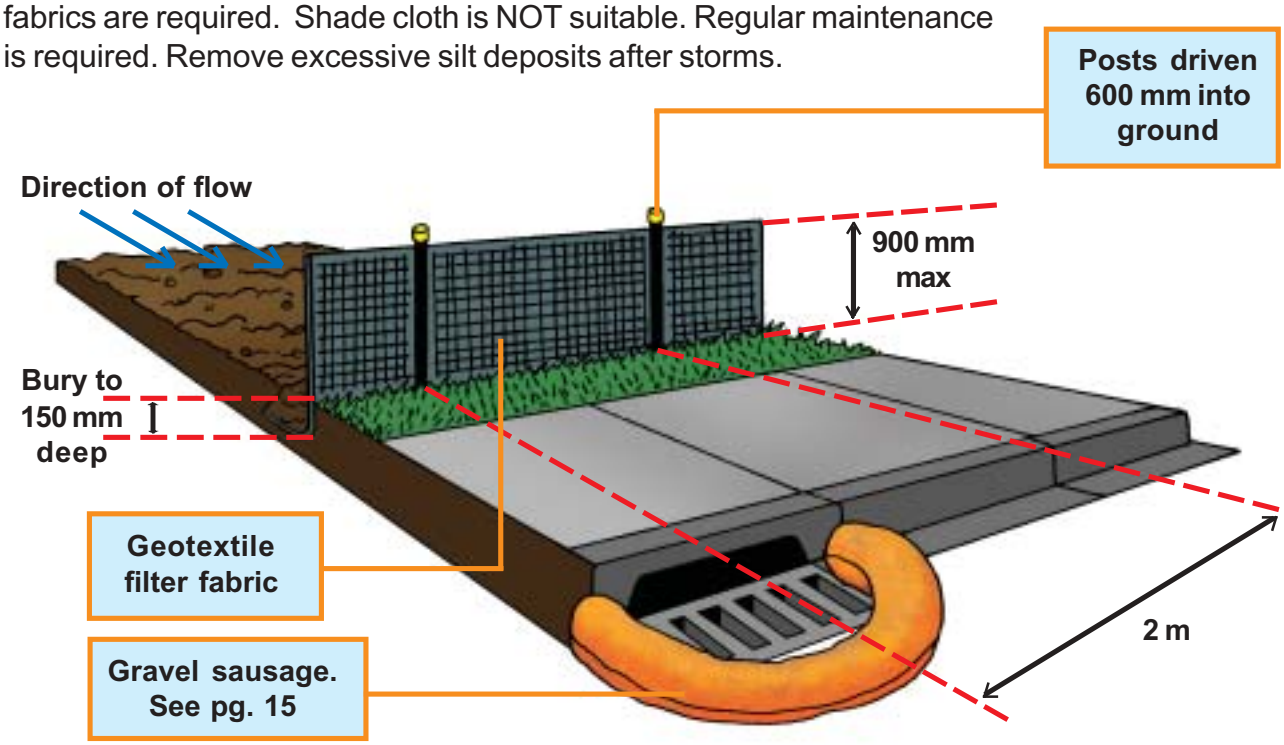
If you cannot connect to the stormwater system, pipe the water away from the building onto a vegetated area where there is good ground cover or to a bunded area.

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

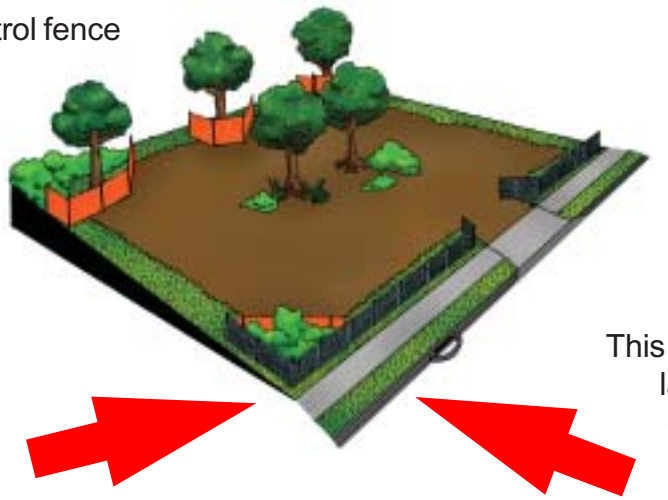
Sediment control fences stop sediment from being washed off site. The fence allows muddy water to pond behind it and for sediment to settle as the water slowly filters through. Geotextile fabrics are required. Shade cloth is NOT suitable. Regular maintenance is required. Remove excessive silt deposits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



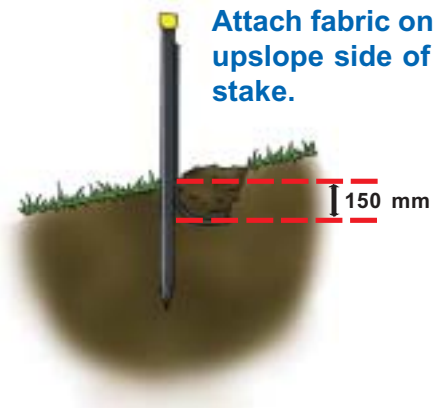
TO BUILD A SEDIMENT CONTROL FENCE:

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.

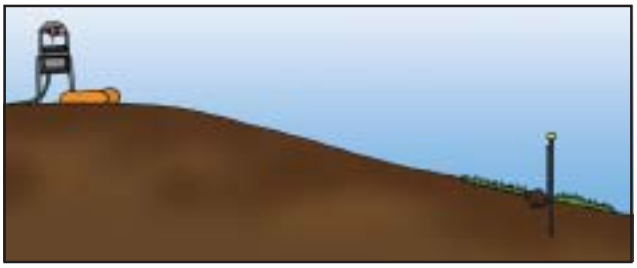
Method 2 - Control dust and slurry from cutting

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

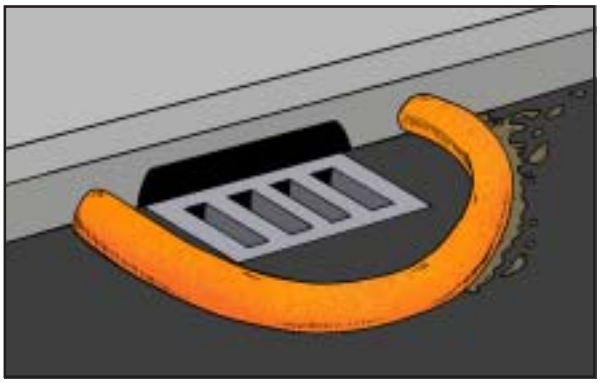
Choose a set area to do all your cutting. This area should be on the building site and away from all stormwater drains.

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

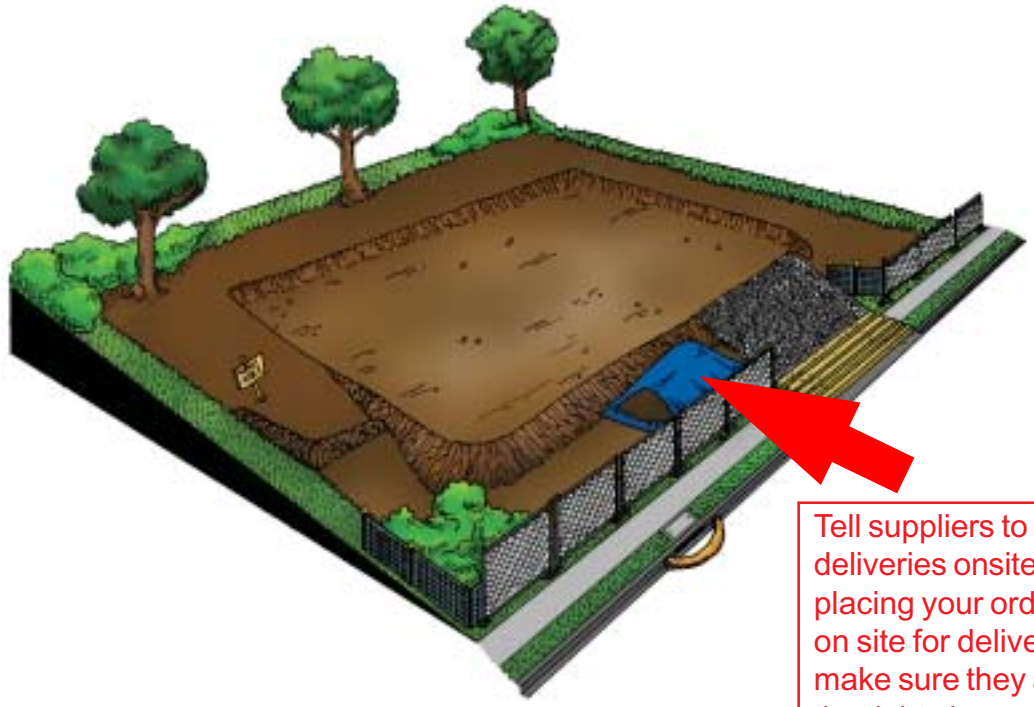
Why are sand, soil and screenings a problem?

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.

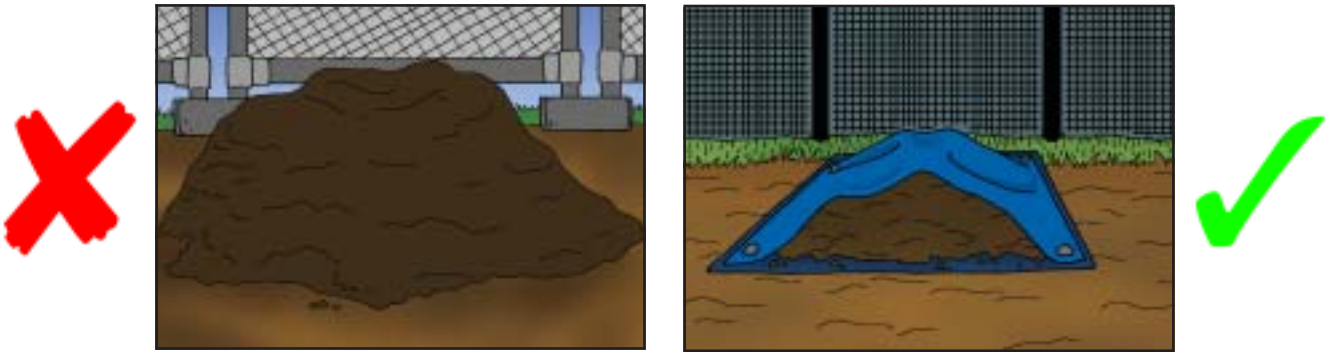


Tell suppliers to place deliveries onsite when placing your order or be on site for deliveries to make sure they are put in the right place.

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

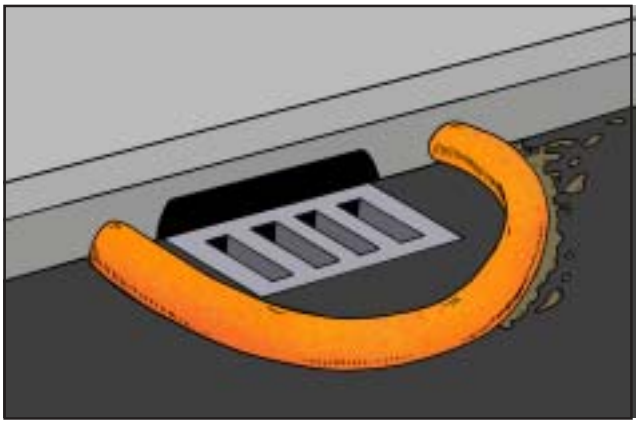
a) Place a tarp, plastic or bunded pallet under the area where the stockpile will be placed.

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.

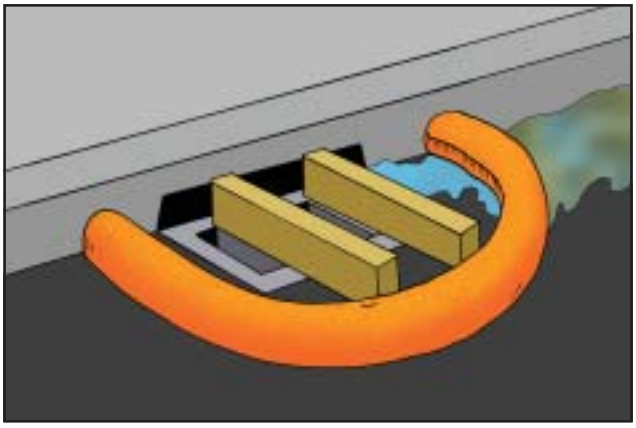


TO BUILD A GRAVEL SAUSAGE:

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?

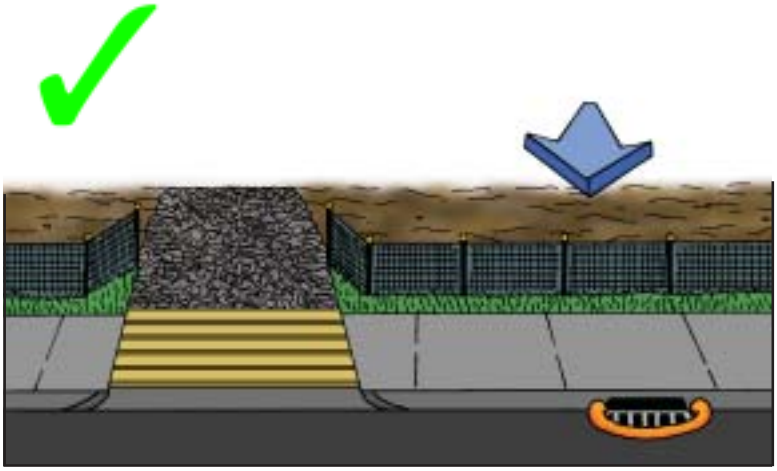
Two things happen when vehicles go on and off the site:

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

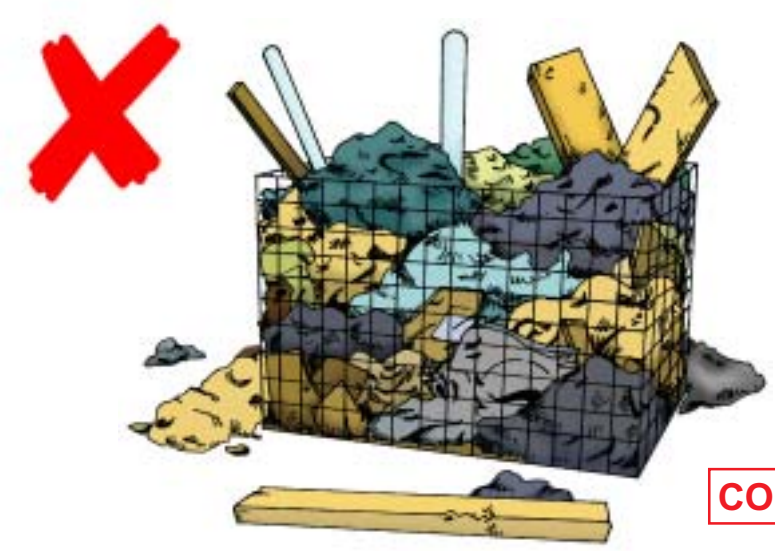
The following simple methods will help you to stop litter leaving your site or being a hazard on site.

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.

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.

Melbourne Water

Victoria The Place To Be

EPA VICTORIA

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Melbourne Water on 131 722
or email enquiry@melbournewater.com

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