Streetscape Development

1. Application

This development type applies to Streetscape development.

High density industrial street in Melbourne with bioretention planters treating road runoff at regular intervals along the full length of road.

2. Objectives

- Integrate natural and/or existing site topographical features into the development design.
- Maximise use of natural and/or existing features for multiple use.
- Minimise capital and maintenance costs for infrastructure.
- Maximise amount of public open space.
- Maximise opportunity to direct stormwater runoff into the ground or waterbody (where safe, compatible and appropriate to the function of the area or waterbody).
- Maintain availability of water during restrictions.
- Make more efficient use of water.
- Assist maintenance of garden / landscaping.
- Reduce flood risk.
- Prevent erosion.
- Improve water quality.
- Improve amenity.

3. Common Techniques

The following techniques are commonly used in water sensitive design strategies for streetscape development. They are described in more detail in the relevant practice note.

Technique	*Practice Note Reference*
Infiltration Devices	Practice Note No.2
Paving	Practice Note No.3
Landscaping	Practice Note No.4
Drainage Design	Practice Note No.5
Rain gardens and Bioretention systems	Practice Note No.7
Vegetated swales and buffers	Practice Note No.8

4. Site strategy

A water sensitive design streetscape integrates road layout, vehicular and pedestrian requirements with water management needs. It uses design measures such as maximizing permeable areas, local stormwater detention in road reserves, managed landscaping, and so on.

Any combination of the techniques (i.e., porous paving, filtration/ infiltration devices, landscape practices) listed above can be very effective at achieving the objectives mentioned above. For maximum effectiveness, these measures need to be carefully designed as part of an overall strategy that considers local site conditions.

The figure below shows a possible overall strategy for industrial / commercial development. In addition to the features shown, water sensitive streetscapes offer opportunities for:

- Narrowing roads to reduce impervious paved areas.
- Integrating design of driveways and crossovers to maximise scope for retention of existing vegetation and for new plantings.
- Varying road and road reserve widths to facilitate integrated stormwater management, maximise and enhance open space and landscaping possibilities and streetscape amenity.
- Integrating footpaths within road reserves to respond to natural features and stormwater management to create spaces that are easy to maintain and efficient to irrigate.
- Incorporating porous paving in, driveways and parking areas.
- Incorporating water absorbing drainage facilities (eg, grass swales) into the streetscape, using surface exposed systems, rather the underground piping systems.
- Incorporating local filtration by using rock/gravel filter beds with drainage channels.
- Common trenching and closer alignment of services to improve scope for reduced disturbance and trenching to retain existing vegetation and plant new vegetation.
- Installing aesthetically appealing features, with emphasis on verge treatment via natural elements such as locally occurring rock, vegetation, etc., rather than via concrete or bitumen pavement.
- Appropriate landscape practices that include the selection of species to reduce water demand.

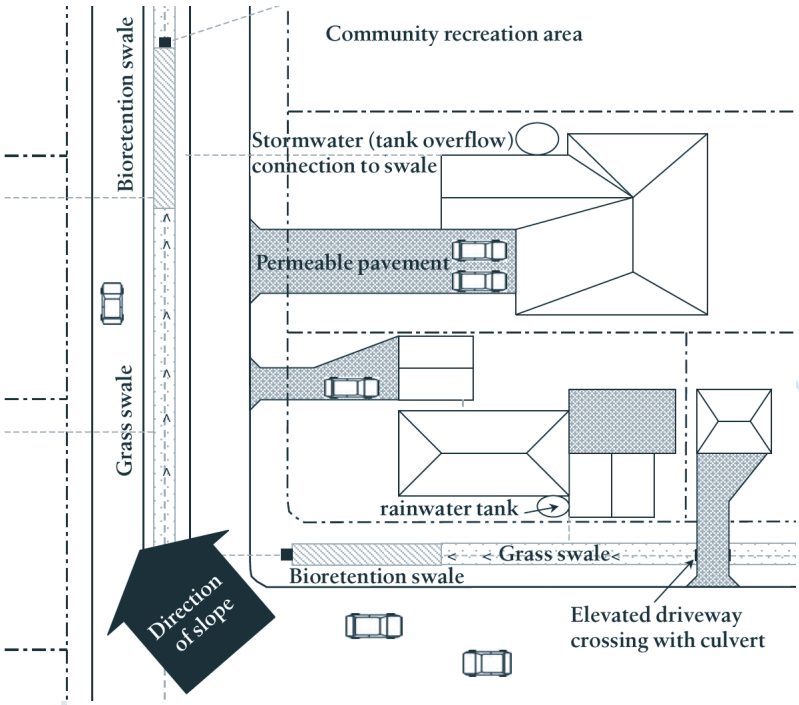

Diagram of water sensitive residential streetscape showing biofiltration swale street drainage. Lower street contains nature strip swale with culvert driveway crossovers whilst other (shown vertical in diagram) has street drainage directed to a biofiltration medium strip.
[source: adapted from Derwent Estuary Program, 2004. WSUD Engineering Procedures for Southern Tasmania, Department of Primary Industries and Water, Hobart.]

Example of an overall stormwater strategy for streetscape development

Appendix A (Site Planning) provides more detail on how to prepare an integrated site plan that incorporates water sensitive design considerations.

water sensitive urban design

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