Government of Western Australia
Department of Water

Looking after all our water needs

Water sensitive urban design

Pervious paving

Summary

Pervious paving can be used as an alternative to traditional impervious hard surfaces used in roads, carparks, footpaths and public squares or plazas. Pervious pavement reduces runoff as some of the rainfall infiltrates into the soil below. Pervious pavement can also provide an additional water storage system. There is a variety of pervious pavements such as porous asphalt, porous turf, porous concrete and permeable paving blocks.

This brochure is part of a series that explain various aspects of water sensitive urban design. Please see *Water sensitive urban design in Western Australia* for background information on water sensitive urban design.

Main benefits

- They reduce the amount of directly connected impervious areas.
- Pervious paving reduces runoff rates and volumes.
- It allows runoff to soak into the ground in the same area it would have prior to urban development, rather than being conveyed away.
- It prevents pollutants being transported into other areas.

Design factors

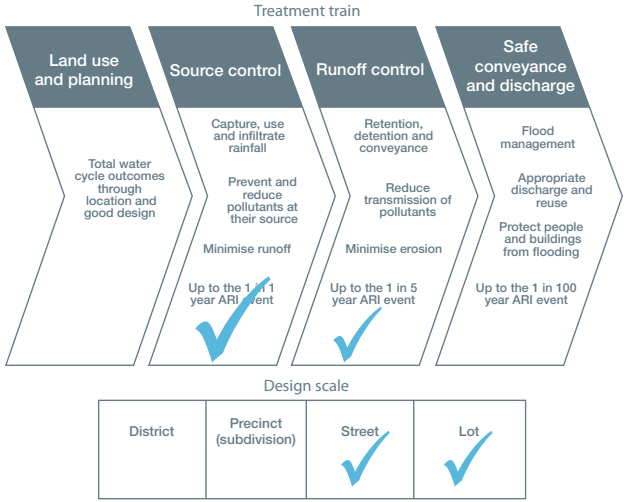
- It requires a slope not steeper than 5%.
- Subsoil drainage may be required in low permeability soils.
- It is not suitable in sites with rising watertables, saline conditions or dispersive clays.

Target pollutants

- coarse sediment
- suspended solids
- heavy metals
- hydrocarbons such as oil and grease

Pervious paving carpark retrofit, Mandurah

Where they can be used in the water sensitive urban design process



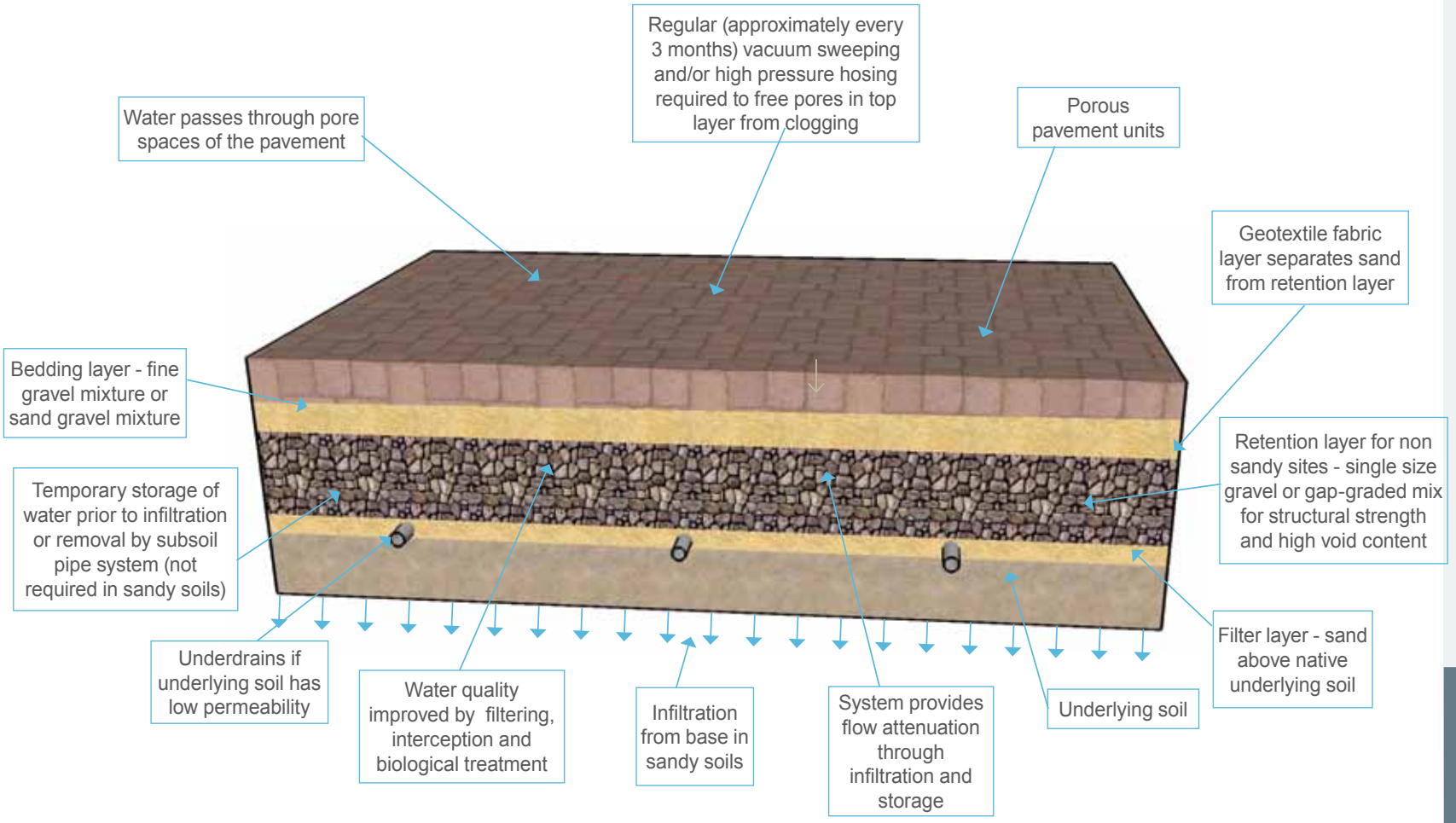
Pervious aggregate placed around impervious pavers

Grass paver system

Point Fraser turf car park

Water sensitive urban design

Pervious paving



(Source: Thompson McRobert Edgeloe Group 2008)

Required reading

Australian runoff quality: a guide to water sensitive urban design, 2006, Engineers Australia, available at <www.arq.org.au>.

Stormwater management manual for Western Australia, 2004–07, Department of Water, available at <www.water.wa.gov.au>. See Section 3.3 of Chapter 9 – Structural controls.

Water sensitive urban design: basic procedures for 'source control' of stormwater – a handbook for Australian practice, 2004, Argue, JR (Editor), University of South Australia.

The department acknowledges the past project contributions of the Leschenault Catchment Council.

Department of **Water**
168 St Georges Terrace
Perth Western Australia
PO Box K822 Perth
Western Australia 6842
Ph: 08 6364 7600 • Fax: 08 6364 7601
www.water.wa.gov.au

June 2011
21592_100_06/11