

THREE WATERS MANAGEMENT PRACTICE NOTE

HCC 07A: Permeable Surfaces (PDP Rule)

1.1 Introduction

This practice note¹ has been developed to provide general information on how to meet the water sensitive technique relating to protecting permeable surfaces in Rule 25.13.4.5 of the Hamilton City Council Proposed District Plan.

1.2 The Water Efficiency Measures Rule

The Water Efficiency Measures Rule 25.13.4.5 states that:

“In addition to Low Flow Fixtures, at least one water sensitive technique for stormwater shall be incorporated, connected to, achieved or maintained as part of any new development...”

A water sensitive technique that complies with this rule is identified to be:

“Permeable surfaces protected to achieve at least 20% above the minimum standard of the zone.”

1.3 What are permeable surfaces?

Permeable surfaces are surfaces which absorb stormwater and reduce the amount of runoff that drains to stormwater infrastructure or watercourses. For this rule, permeable surfaces are considered to be natural surfaces which are grassed or planted in trees or shrubs and are capable of absorbing water.

The Proposed District Plan identifies minimum permeable surface areas for various zones. Refer to the Proposed District Plan for the relevant permeable surface requirements for the zone that your site is in.

In order for a site's permeable surface to satisfy the Water Efficiency Measure option, the measured site permeable area for the new development needs to exceed the minimum permeable surface area requirement by at least an additional 20% of the total site area.

1.4 Definitions

The following Proposed District Plan definitions² are relevant:

Impermeable surfaces: Means surfaces such as roads, roof tops, footpaths, paving, decking, swimming pools, patios or highly compacted soil that are not vegetated and do not infiltrate run-off.

Permeable surface: Means any part of a site which is grassed or planted in trees or shrubs and is capable of absorbing water. It does not include impermeable surfaces or any area which:

- Falls within the definition of building coverage.
- Is covered by decks which do not allow water to drain through to a permeable surface.
- Is occupied by swimming pools.
- Is paved, sealed or formed to create a solid surface.
- Is used for vehicle parking, maneuvering or access.

Note: A green or living roof may provide a suitable alternative to permeable surfaces requirements but will be assessed on a case by case basis. Rainwater tanks with a capacity of <10,500 litres are ignored when calculating the permeable surfaces³.

In addition to the definitions from the Proposed District Plan, the following definitions shall also be adopted for the purposes of calculating permeable surface areas in relation to the Water Efficiency Measures:

Roof area: The total roof area including eaves is to be measured – not just the building footprint. For existing roofs, measure the plan area of the roof at ground level below the edges of the roof (including eaves). For proposed buildings, the area can be calculated from the roof plan drawings (not the wall floor plan dimensions) as these include the additional area of the eaves.

Unpaved parking / metalled driveways: Unpaved parking areas with compacted ground, metal or shell (or similar) are considered impermeable and must be included in the impermeable area calculation.

Self-mitigating surfaces: Permeable paving and uncovered wooden slatted decks (that allow water to pass through) over natural ground are considered self-mitigating as they can be used to cover an area without adding to the impervious stormwater runoff quantities and will still achieve infiltration of rainfall that falls on this covered area to ground. Green roofs are also considered to be self-mitigating surfaces.

1.5 Application

The Proposed District Plan requires that a site's permeable surface area is to be provided by natural surfaces, including grass and planted areas.

This approach can be varied from if there is technical advice for your site provided in an approved Water Impact Assessment or Integrated Catchment Management Plan that states that permeable surfaces can be provided by a combination of natural and constructed permeable surfaces. Refer to Practice Note HCC07B for design information for permeable paving.

1.6 Example

The following example clarifies how to apply the minimum permeable area requirement in accordance with Rule 25.13.4.5 of the Proposed District Plan using a 500m² lot in the **General Residential Zone**⁴ with:

- 250m² house and garage
- 70m² driveway and hardstand area

Under the general standards for this Zone (see Figure 1):

- The house and garage takes up the maximum building site coverage (50% of entire site).
- A minimum of 150m² (30% of entire site) must be permeable surfaces.
- All the land forward of the house and garage must be permeable except for the area needed for access and manoeuvring.

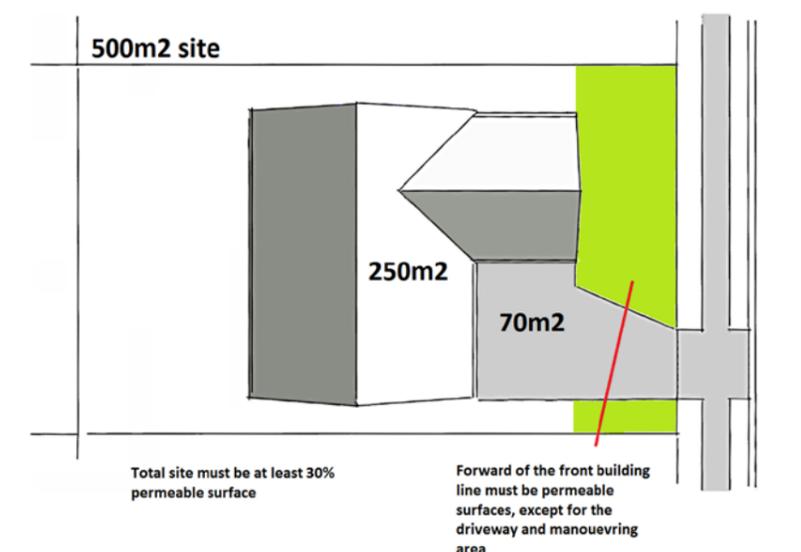


Figure 1: Permeable surface requirements for the General Residential Zone – General standard only

One water efficiency measure for stormwater management is to provide an additional 20% of permeable surface of the entire site, in this example an additional 100m² would be required (now 50% of the entire site). If this water efficiency measure was used then the total permeable surface required is 250m². As the house and garage already takes up 250m² of the 500m² site, the driveway and associated hardstand area will need to be made up of permeable pavers (see Figure 2). i.e. the additional 20% of site area could be made up of permeable surfaces as defined by the District Plan or permeable pavers, or a combination of the two.

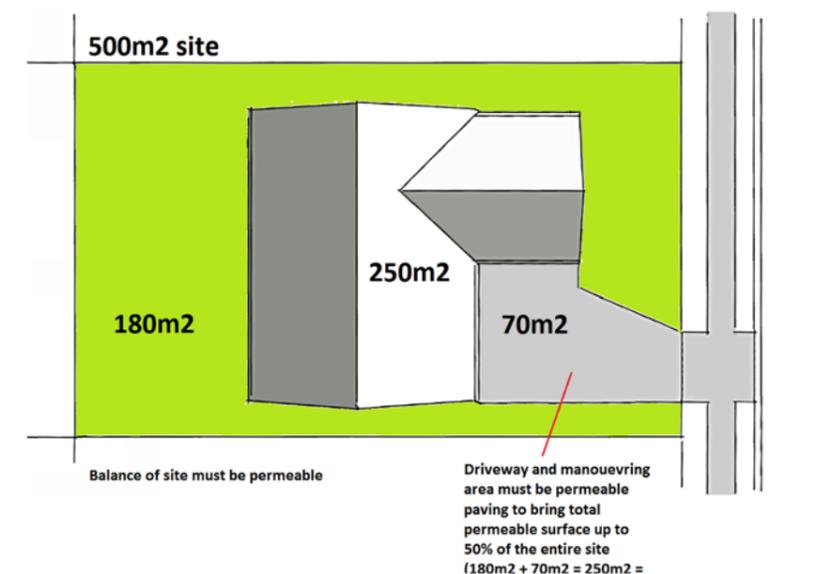


Figure 2: Permeable surface requirements for the General Residential Zone – General standard and Water Efficiency Measure option

¹ Three Waters Management Practice Notes are Hamilton City Council controlled documents and will be subject to ongoing review. The latest version can be downloaded from the Hamilton City Council website: <http://www.hamilton.govt.nz/our-council/council-publications/manuals/Pages/Three-Waters-Management-Practice-Notes.aspx>

² Refer Proposed District Plan (Decision Version 2014) – Appendix 1.1.2, Volume 2 07-1

³ Ibid, Rule 25.13.4.5 b)

⁴ Ibid, Chapter 4 Residential Zone, for zone rules relevant to this example.