Waitakere City Council
Te Taiao o Waitakere

V E R S I O N 1 . 0

Stormwater Solutions for Residential Sites

Section 4 – Minimising Impervious Areas

Prepared for

EcoWater Solutions

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4.1 Introduction

Impervious surfaces (roads, roofs, and footpaths) prevent the passage of water through the surface into the ground. Water must then be transported across the surface to the point of discharge. Minimising impervious areas is the most effective way to preserve a site's predevelopment runoff characteristics.

4.2 Description

Techniques to minimise impervious surface areas include:

- The use of permeable paving materials (refer Section 7);
- Reducing the area/extent of roof area (two stories for additional space);
- Construction of Green Roof (refer to Section 9)
- The use of pervious surfaces around buildings (e.g. open slated decks rather than concrete);
- Clustering of structures (placing the house, garage and additional structures in close proximity) to reduce the impervious hardstand areas between structures; and
- Reducing impervious surface areas of access ways and driveways by the following methods: -
  - The use of pervious paving materials such as gobi blocks, enviroblocks or gravel;
  - The use of dual strip driveways with a grassed central strip;
  - Reducing drive and access way length (locating the house closer to the road); and,
  - Providing shared access ways to serve several houses.

The design of the driveway is the responsibility of the property owner. It is important that precast paving materials are used strictly in accordance with manufacturers specifications that take into account the bedding material and basecourse requirements applicable for the site conditions.

4.3 Benefits

Reducing the amount of impervious surface reduces the amount of stormwater generated. Non-structural and alternative approaches to stormwater management are more easily applied and successful when the amount of stormwater generated is reduced.

4.4 What to do?

Consider the amount of impervious area you realistically need to meet your requirements. Apply some or all of the methods listed above to minimise the area required. The stormwater effects generated by the area that you decide on will have to be managed by application of the stormwater management techniques that you choose to apply from the following pages.

In Waitakere City **the maximum imperviousness that can be applied to a residential lot is 60% of the property area or 15% if there is no drainage connection.** The total impervious surface area allowed is calculated from private driveways, paths and all roof areas (including garages). This impervious area must not be exceeded in the stormwater management technique calculations that follow on subsequent worksheets (Appendix A).