

# Permeable pavement study

**A new type of road surface gaining popularity overseas because of its environmental benefits has been successfully trialled in Auckland.**

Researchers from The University of Auckland's Faculty of Engineering completed a study of the surface on a 200 m<sup>2</sup> section of Birkdale Road on the North Shore. Called 'permeable pavement', it is made up of interlocking concrete blocks designed to soak up stormwater and reduce contaminants in water that flows to streams and eventually to the harbour.



The 200 m<sup>2</sup> section of permeable pavement on Birkdale Road on the North Shore.

## Reduced run-off

Dr Elizabeth Fassman and ME student Samuel Blackburn from the university's Department of Civil and Environmental Engineering monitored the effectiveness of the surface over 2 years. Results show it decreased stormwater run-off at peak flow by an average of 75% during most storms and reduced the volume of total run-off by about 40% when compared to run-off from asphalt on the same road.

'The water quality was as good as water treated by detention basins or constructed wetlands, which are commonly used to control stormwater but can take up a lot of space,' said Dr Fassman. 'We set out to prove this technology works under local

conditions, and compared to international studies, it performed well, despite the challenging conditions.

'There are miles of roads and car parks in Auckland, and if they were converted to this surface, it would make a huge impact on protecting our waterways and streams and preventing stream erosion.'

The trial also confirmed the best installation techniques for the system, how susceptible it is to clogging and how it responds under the weight of heavy traffic.

The trial was supported by the Auckland Regional Council and North Shore City Council.

*Guidelines on how to design and install the system are being updated by the North Shore City Council. ◀*