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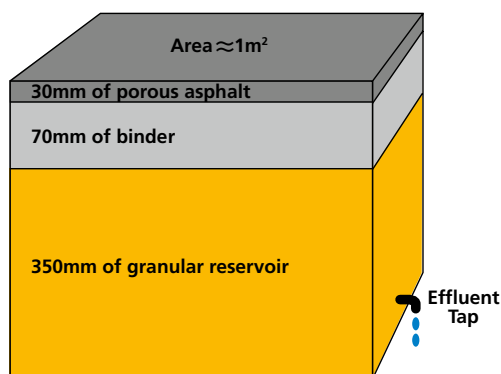
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### Introduction

The SuDS Applied Research Group at Coventry University was asked by Tarmac to investigate the effects of surface gradient on the amount of surface run-off water from TarmacDry porous asphalt under heavy rainfall conditions. The main findings from the study are summarised here.

### Methodology

The test porous asphalt surface used was part of 1m<sup>2</sup> test rig, the basic structure of which is shown in the adjacent figure. The surface gradient was set by raising one side of the rig using a hydraulic jack. The gradients tested were approximately 0, 1 in 80, 1 in 40, 1 in 20 and 1 in 10.



Areas of 0.2 x 0.5 m (0.1 m<sup>2</sup>) were marked off on the porous asphalt surface and isolated so that any run-off water could be



collected and measured. Tap water was supplied at rates of between 100 and 250 ml/minute from a perforated tube feed at the upper end of each slope. On the basis of the area tested these flow rates are equivalent to rainfalls of between 60 and 150 mm/hour. At each gradient the water was first fed on at a rate of 100 ml/minute for 10 minutes, then 150 ml/minute for 10 minutes, 200 ml/minute for 10 minutes and finally 250ml/minute for 30 minutes. Prior to all run-off experiments each of the areas were wetted with 500 ml of water in order to provide consistent starting conditions.

### Results and Discussion

It was found that no surface run-off was generated at any of the flow rates or gradients tested. In fact even at the highest rate of water delivery, 250 ml/min, it was observed that all the feed water soaked in to the porous asphalt surface within 10 cm of the origin. On the basis of area (0.02 m<sup>2</sup>) this is equivalent to a rainfall rate of 750 mm/hour.