

## Announcement: Award-winning paper in 2009

Papers published in *Water Management* are eligible for awards from the Institution of Civil Engineers. Papers from any of the ICE journals can be nominated for several awards. In addition, each journal has awards dedicated to their specific subject area.

On Friday 8 October 2010, ICE president Paul Jowitt presented an award to the following paper published in *Water Management* in 2009. The editorial panel nominated their best papers and an awards committee chaired by Barry Clark allocated the awards.

The R A Carr prize was awarded to: Blake JR (2009) Soakage testing: modelling the effect of antecedent hydrology. *Proceedings of the Institution of Civil Engineers, Water Management* **162(5)**: 337–346, doi: 10.1680/wama.2009.162.5.337.

### Abstract

Current design methods for sustainable drainage system infiltration devices such as soakaways, permeable pavements and infiltration basins require knowledge of the empirical soil infiltration coefficient, which is determined using a soakage test procedure.

However, the control that seasonal antecedent hydrological conditions, specifically unsaturated zone soil moisture and water table position, have on the infiltration coefficient is uncertain. This paper uses exploratory numerical modelling to investigate this uncertainty. The results show that antecedent water table position has a significant effect on the infiltration coefficient, while for a properly conducted test the seasonal antecedent soil moisture is less important. To avoid overestimating the infiltration coefficient, soakage testing should ideally be performed under the most onerous hydrological conditions and three successive drain downs must be used. Model outputs such as those presented can be used to reduce the design infiltration coefficient to account for tests made during periods of lower groundwater level and higher design water table positions. Additionally, the current infiltration coefficient calculation is shown to be biased towards the initial, more rapid, infiltration rate. Therefore, an alternative full-depth infiltration coefficient calculation is proposed. Finally, a potential detrimental feedback is hypothesised between infiltration device performance and groundwater mounding. Significant design implications are discussed.