Urban Stormwater Management Planning With Analytical Probabilistic Models
by Barry J. Adams & Fabian Papa
Published 2000 by John Wiley & Sons Ltd, Baffins Lane, Chichester, West Sussex PO19 1UD, UK; price £57.50; 358 + xviii pp.; ISBN 0-471-35641-7

This book was a fascinating read. Although written for the American market (appendices of rainfall characteristics for many locations across the United States), it has been produced for the international market using SI units and the content is applicable worldwide. The book is very well written and readable. It is up-to-date on all the current drainage issues.

The premise of the book is that using deterministic computer models of drainage systems for initial planning and screening of drainage solutions is computationally inefficient and can be done very rapidly another way. This recommended approach is based upon a statistical understanding and representation of the rainfall, hydrology and network performance which allow solutions to be evaluated.

In outline it starts as many urban drainage books, with a historical perspective of urban drainage development followed by a good summary of the impact and characteristics of drainage systems. Chapter 3 is spent arguing the case for using the probabilistic approach and points out the limitations of using design storms and strongly supports the use of time series rainfall (TSR) to obtain a true assessment of drainage system performance. The authors argue that, as TSR is virtually essential, the computational effort needed to run and evaluate TSR-based analysis of detailed models is so great, that a more refined approach using probabilistic methods is desirable. Detailed design analysis would then be targeted at provisional solutions.

The book goes on to discuss how meteorological data and runoff quality data are analysed and characterized. The chapters then go into overdrive in terms of derived probability distribution theory and how it is applied to rainfall and the network performance to arrive at methods for evaluating quantity and quality performance and to determine potential solutions.

Whether or not the book succeeds in moving engineers to using this "simplified" approach to arrive at an understanding of the system performance, I somewhat doubt. Academics will be able to follow the statistical detail and approve of the efficiency being promoted. I cannot see many engineers carrying out this type of study in practice; partly because detailed models will still be needed to determine solutions. It does however draw attention to the need to approach and evaluate data and problems in a rigorous manner. In one respect this book has been produced too late. Computing speed has continued to increase so quickly that crunching huge amounts of data (which are now often available entirely in digital format) and analysing the output, although perhaps an inefficient approach in terms of resources used, may not in practice cost a great deal more to do. In summary, an extremely worthwhile read, but the core of the book (the use of statistics and probability evaluation for drainage systems) is likely to appeal mostly to academics and engineers with strong skills in mathematics.

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Dispersion in Heterogeneous Geological Formations
edited by Brian Berkowitz

Many years of study leading to the prediction of contaminant migration in the natural environment have lead mainly to the presentation of this phenomenon as a relatively simple