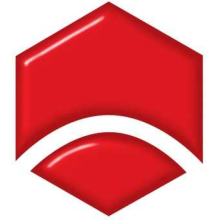


AUSTRALIAN RAINFALL AND RUNOFF SEMINAR



ENGINEERS
AUSTRALIA
Tasmania Division

DATE: Tuesday, 13 March 2012
TIME: 12.15pm (light lunch provided)
12.30pm to 2.00pm Seminar
PLACE: Old Woolstore Theatrette
1 Macquarie Street, Hobart

SPEAKER: **Grantley Smith, UNSW Water Research Laboratory (WRL)**

Grantley Smith is a Senior Engineer at the University of New South Wales Water Research Laboratory. He has over 20 years' experience in hydrological processes as they relate to flow forecasting floodplain hydraulics, and floodplain management. Prior to joining the WRL in 2009, Grantley was NSW State Manager for DHI Water and Environment where he helped pioneer the use of 2D hydrodynamic models for floodplain inundation. He is currently Chair of the Water Panel for the Sydney Division of Engineers Australia.



Australian Rainfall and Runoff
Project 15

People and Vehicle Stability in Floods

Abstract:

The safety of people in floodways or on flooded streets is of major concern in urban stormwater design and floodplain management. Human activity in floodways is inevitable with much development already in flood prone areas. The safety of people can be compromised when exposed to flows which exceed their ability to remain standing or traverse a waterway or cause vehicles in which they are travelling in to lose traction.

Over the last four decades, a number of numerical and laboratory-based experimental studies have been undertaken within Australia and internationally to define the limits of human and vehicle stability within differing flow regimes. Human stability has been found to be influenced by numerous factors, however, the two most important parameters are flow depth and velocity, with depth dictating whether loss of stability is by sliding (friction) or tumbling (moment) failure. Vehicle stability depends on similar flow depth and velocity parameters, though is simplified by the lack of 'training' and body positioning parameters which affect human stability.

This presentation reviews the early work, collates and discusses subsequent experimental testing, empirical expressions and safety guidelines derived from these studies. The entire data-set of relevant experimental results is re-analysed and tolerable flow conditions related to human and vehicle safety and safe working conditions are presented.



Australian Rainfall and Runoff
Project 15

2D Modelling in Urban Areas

Abstract:

Flood events in Newcastle in June 2007 and most recently in South East Queensland's Lockyer Valley in January 2011 have highlighted the importance of robust planning guidelines and building stability criteria for floodplains. These floods have also highlighted a requirement for accurate representation of flood hazard behaviour to support land use and flood evacuation planning documentation.

Currently, two-dimensional (2D) hydrodynamic (numerical) models have become the de-facto standard for baseline flood planning and management, especially in urban areas. Investigations addressing flood behaviour definition have typically followed a scope devised and refined over many years by government agencies to meet statutory requirements. However, the development, application and calibration of numerical models is open to considerable interpretation.

Individual agencies and the specialist consultants servicing these agencies have developed various techniques and methods to address overland flooding using 2D numerical models. However, in many instances, these methods are quite different and produce significantly different outcomes in terms of the generated flood behaviour characteristics.

The presentation will provide an overview of recent research undertaken as part of Project 15 of the Australian Rainfall and Runoff Revision and funded by the Federal Department of Climate Change and Energy Efficiency and WRL. The research project investigated the application of 2D models in urban areas, with a particular focus on the representation of buildings and other floodplain flow obstacles in numerical models.

RSVP: To Catherine Reading 6234 2228 or creading@engineersaustralia.org.au by no later than Tuesday, 6 March 2012

Attendance at this seminar can be credited towards Engineers Australia's Continuing Professional Development requirements