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Darwin DRAINS In-Person Workshops

PROGRAM

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Watercom

This comprehensive two-day training course is delivered in person and includes mandatory pre-work.

- ✓ Online Pre-Work is a 2.5-hour Introduction to ARR
- ✓ Learn or refresh the fundamentals of DRAINS
- ✓ Master and apply ARR guidelines to urban drainage
- ✓ Explore and build DRAINS models with hands-on examples, case studies, and troubleshooting
- ✓ Suitable for both new and experienced DRAINS users
- ✓ Covers advanced modelling techniques
- ✓ Includes 30-day access to a DRAINS 50-Link Subscription

Mandatory Pre-Work (Online, 3 hours)

Duration	Content
0.5 hours	**Getting Started:** Downloading resources and installing DRAINS
2.5 hours (split across 4 parts)	**Introduction to ARR** • Why do we have a new set of guidelines? • Overview of past editions of ARR, ARR Online & overview of each Book • Refresh: Hydrology, loss models and routing models • ARR Temporal Pattern Regions and Rural Loss Model Zones • New ARR Probability Terminology • Ensembles of Storms • Understanding ARR catchment terminology (TIA, DCIA, ICIA, EIA, RA) • Watercom DRAINS application of ARR catchment terminology using Effective Impervious Areas (EIA), Remaining Impervious Areas (RIA), Pervious Areas (PA) • ARR Data Hub • Initial Loss Continuing Loss Data • Understanding Rural Initial Loss vs Urban Initial Loss • NSW OEH Specific Requirements (Probability Neutral Burst Initial Loss) • Median Pre-burst Depths • Understanding Initial Loss Storm versus Initial Loss Burst • Modelling Climate Change • Bureau of Meteorology 2016 IFD Rainfall Data • Comparing ARR 87 IFD to 2016 IFD at the location of the workshop • Challenges with ARR • Demonstration of ARR Regional Flood Frequency Estimation (RFFE) Model • Overview of Design Objectives: Safe Widths, Hazard Classifications, Freeboards • Overview of applying ARR procedures using DRAINS software
0.5 hours	**Chapter 1: Introduction to DRAINS** Workshop materials and the DRAINS interface

DAY 1: DRAINS Fundamentals

Covers DRAINS and ARR introductory content, modelling piped drainage systems, assembling a DRAINS model and working on a DRAINS database.

9:00am	**Recap: Q&A of Pre-Work (Introduction to ARR)** **Chapter 1: The DRAINS Interface**
10:15am	*Morning Tea*
10:30am	**Chapter 2: Modelling Piped Drainage Systems** • Obtaining data from ARR Data Hub and BOM website • Configuring a Hydrological Model (IL-CL) • Import 2016 IFD Rainfall Data and Ensembles, Import Median Preburst / Transformational Burst Depths • Nominate Major and Minor Storms and Setting Project options • Quick Overview of DRAINS Databases (Pipe, Pit & Overflow Routes) Importing DXF, Entering Pits, Pipes and Catchments data
12:15pm	*Lunch*
1:15pm	**Chapter 2 (continued): Modelling Piped Drainage Systems** • DRAINS Overflow Routes • DRAINS design, analysis, and interpretation of results • Full Unsteady Hydraulic Modelling • Customise Text Dialog Box, Long-section, Survey and Services
3:00pm	*Afternoon Tea*
3:15pm	**Chapter 3: DRAINS Database** • Pipe data base • Creating on-grade pits using the HEC-22 Wizard • Creating sag pits using the Table Wizard • Creating new pits using the Generic Pits Spreadsheet • Overflow routes Database – obtaining cross-section data from QGIS or spreadsheet.
4:30pm	**Close of Workshop: Open for Questions & Answers**

DAY 2: DRAINS Fundamentals

Covers model design considerations, open channels & headwalls, Storage Network Routing Module (SNRM), introduction to On-Site Detention Systems and examples of infiltration systems.

9:00am	**Recap Day 1** **Chapter 2: Design Considerations – Extended Model** • Flood Mapping with the DRAINS Full Unsteady Hydraulic Model • Spreadsheet Outputs • Estimation of pit pressure change coefficients • Splitting Flows
10:15am	*Morning Tea*
10:30am	**Chapter 4: Open Channels and Headwalls**
11:15am	**Chapter 5: Storage Network Routing Module (SNRM)** • Using the RORB, RAFTS & WBNM Hydrological models in DRAINS • Horton ILSAX hydrology
12:15pm	*Lunch*
1:15pm	**Chapter 6: Introduction to On-Site Detention Systems** • Simple Examples of OSD systems • Small subdivision combined OSD and RWT • High Early Discharge systems
3:00pm	*Afternoon Tea*
3:15pm	**Chapter 6 (continued): Introduction to On-Site Detention Systems**
4:00pm	**Chapter 7: Exploring Infiltration Systems Examples** • Modelling infiltration basins • Modelling underground infiltration storages
4:30pm	**Close of Workshop: Open for Questions & Answers**

INSTRUCTORS

Hossein Ansari

Technical Manager & Principal Engineer

Hossein is a Civil Engineer with over 20 years of experience in both the public and private sectors, previously working as a Senior Design Engineer at Sutherland Shire Council and as a Drainage Investigation Engineer at City of Botany Bay Council.

In his capacity as a consultant, Hossein has been providing services as a Civil / Hydraulic Engineer to a number of consulting firms since 2007.

Hossein's experience covers roads, drainage, overland flow path studies, and Water Sensitive Urban Design (WSUD) projects, from inception to detailed design and construction.

His major interests include hydrological and hydraulic modelling and design utilising various computer software programs including DRAINS, HEC-RAS, ILSAX, Civil 3D, AutoCAD, Civil Site Design, MapInfo, QGIS, ArcMap and other GIS software.

Hossein actively contributes to the education of future engineers by delivering lectures at multiple universities, including the University of Technology Sydney (UTS) and Charles Darwin University (CDU).

MORE INFORMATION

Training

We offer a range of DRAINS Training options, including In-Person Workshops, Self-Paced Online Training, Custom/Private Workshops as well as Corporate Online packages.

Discover our **range of training options** here: https://watercom.com.au/training/overview/

For support on workshop content or other enquiries, email us at training@watercom.com.au or call our office on (02) 6649 8005.

Software Support

Please lodge a **software support ticket online**: https://watercom.com.au/support/

Or if you need more than just software support, we also **offer 1-on-1 DRAINS Model Consultations with a qualified specialist engineer**. You'll receive tailored advice and guidance for your specific project. Book now: https://watercom.com.au/support/drains-model-consultations/

DRAINS Quotes and Purchases are available by submitting a quote request on the Watercom Website: https://watercom.com.au/pricing/

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