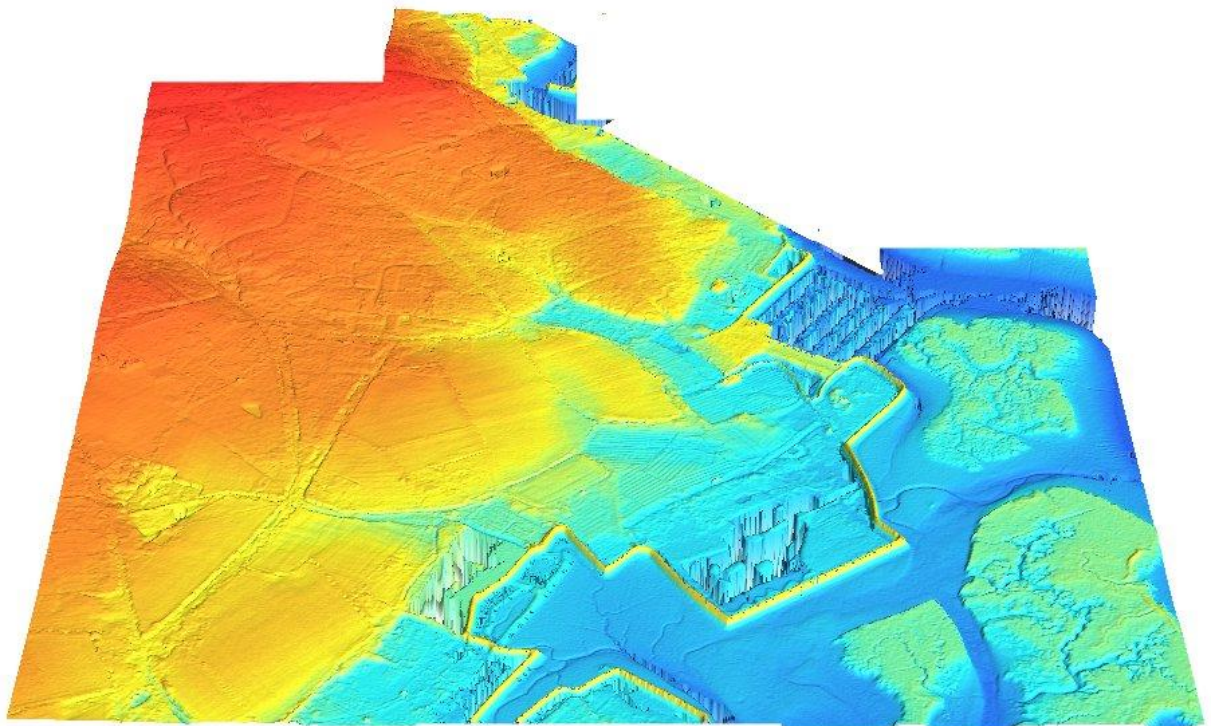




## Training Courses

### ISIS, TUFLOW and ISIS-TUFLOW



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## EDENVALE YOUNG ASSOCIATES LTD

Edenvale Young Associates Ltd. is a civil engineering and scientific consultancy specialising in the fluvial and maritime environment. Our work covers river and coastal engineering including hydraulic modelling, project appraisal studies, flood alleviation, flood forecasting, shoreline engineering, flood risk assessments, river restoration and the preparation of detailed civil engineering designs and specifications for a broad range of projects. Based in Bristol, the team includes civil engineers, hydrologists, environmental scientists and hydraulic modellers.

Edenvale Young maintains a Memorandum of understanding with BMT WBM Consultants of Australia who were responsible for the development of TUFLOW and the ISIS TUFLOW link. For the last 4 years we have jointly hosted the TUFLOW UK User Group in conjunction with Arup. In addition we also chair and organise the ISIS User Group in association with Halcrow.

Edenvale Young has provided ISIS, TUFLOW and ISIS-TUFLOW training to a number of consultants including:

- |                           |                              |
|---------------------------|------------------------------|
| • AMEC                    | ISIS, TUFLOW and ISIS-TUFLOW |
| • Atkins                  | ISIS                         |
| • Arup                    | TUFLOW and ISIS-TUFLOW       |
| • BWB Consultants         | TUFLOW and ISIS-TUFLOW       |
| • Create Consulting       | ISIS and TUFLOW              |
| • Environment Agency      |                              |
| ○ Wales Region            | TUFLOW and ISIS-TUFLOW       |
| ○ Midlands Region         | TUFLOW and ISIS-TUFLOW       |
| ○ North-West Region       | ISIS                         |
| • Faber Maunsell          | TUFLOW and ISIS-TUFLOW       |
| • Hyder Consulting        | ISIS, TUFLOW and ISIS-TUFLOW |
| • Independent Consultants | ISIS, TUFLOW and ISIS-TUFLOW |
| • JBA                     | ISIS                         |
| • Mouchell Parkman        | TUFLOW and ISIS-TUFLOW       |
| • Royal Haskoning         | TUFLOW and ISIS-TUFLOW       |
| • Scott Wilson            | TUFLOW and ISIS-TUFLOW       |

## INTRODUCTION

Our courses are not feature driven; “here is this tool and an example of how to use it”, but purpose and understanding driven. We will equip you with an understanding of how to carry out regular every day modelling tasks, as well as how to adapt them and use more advanced features. There will be a lot of information to take in, but in our experience, you will leave equipped to carry out a wide variety of projects.

All our training has been developed in-house, with the intention of equipping the user with the necessary skills to produce models for projects of their own. We can offer our services in making a preliminary model of an area of interest to you, so that when you begin your first project you will have a working starting point to build upon. The training sessions will have time set aside to take you through this model and ensure that you are confident in how to use it and why it has been set up in a particular way, so that you are able to work on it with confidence when you return to your office. We also offer support after your training session so that you can ask any questions relating to your training in the weeks after the course.

Typically we offer training in three one day packages; covering ISIS, TUFLOW and ISIS-TUFLOW, which are covered in the following pages. However, these training sessions can be tailored to your specific requirements (should you have any) and there is no need to take all three courses. If you are already comfortable with TUFLOW, but would like to know more about ISIS and how it is linked with TUFLOW, then we will teach you accordingly.

When using TUFLOW, a reasonable level of competence in the use of GIS is necessary. We would always recommend MapInfo and VerticalMapper as the software of choice, and are able to give you a good grounding in its use for TUFLOW purposes if required.

If you need any further assistance after the training, whether related to any modelling covered with us or later work of your own, we are available to offer technical support and advice by either telephone or email.

## **TAILORED FOR YOUR CURRENT PROJECT NEEDS**

A large proportion of our ISIS, TUFLOW and ISIS-TUFLOW training is tailored on an individual basis. In most cases the training takes the form of developing a working model for a study or project supplied by the client. The aim of this approach is to produce a working model and to cover the features that this model requires so that you can continue to work with the model after the training has finished.

In order to facilitate a smooth training programme previous experience indicates that the most productive approach is for Edenvale Young to assemble a preliminary model at our office in Bristol before the formal training.

In this manner issues such as lack of information, repetitive tasks such as the truncation of ISIS cross sections or poorly schematised 1D models will not hinder the flow of the training. If this approach is adopted then the client will be required to supply the following information and data:-

- The existing survey data including geo-referencing of cross sections and structures.
- Any pertinent hydrological information which can be used for preliminary model runs.

However, if this is not possible then the training can be based upon our standard training courses outlined in the following pages.

## COURSE 1 – INTRODUCTION TO ISIS

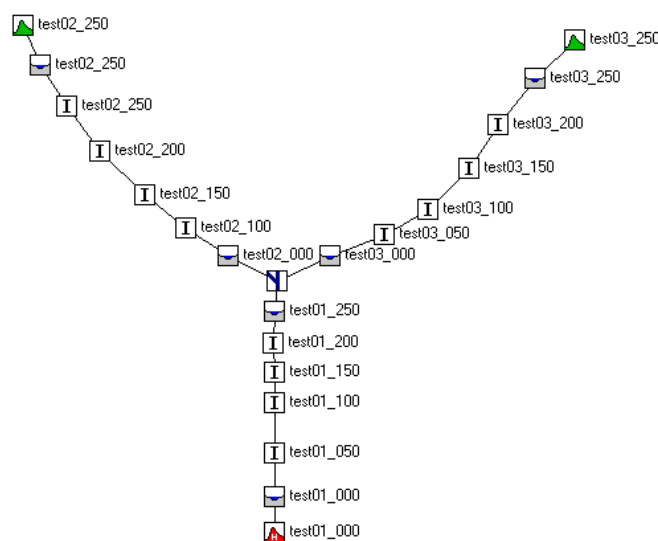
### Overview

Our ISIS training course was developed by Chris Whitlow; he has 25 years experience in ISIS modelling and has been actively involved in the development of the software. This one day course is based upon introducing the ISIS software and the development of an example model. The objectives of this course are to maximise closely supervised hands-on experience in using the software to solve pre-defined problems. Furthermore, a general introduction is provided to the different functions performed by the ISIS interface.

### Topics Covered

- Using the ISIS interface
- Modelling open channels
- Modelling hydraulic boundaries
- Modelling hydraulic structures
  - Bridges and Culverts
  - Weirs
  - Sluices
- Modelling Spills and Reservoirs
- Viewing and analysing results
- Identifying model problems
- Exporting outputs

We can tailor this course to suit your needs, should you wish to cover topics not listed above then please contact us to discuss your requirements.



*ISIS Model Schematic*

## COURSE 2 – INTRODUCTION TO TUFLOW

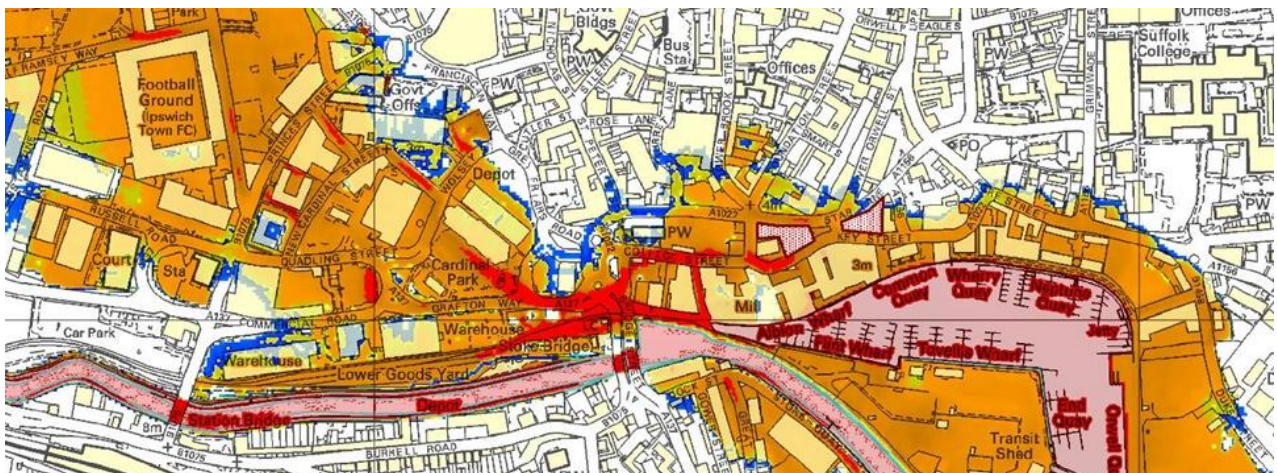
### Overview

This one-day TUFLOW training course was developed by our in-house team and is regularly updated to incorporate new features of the software. The objective of this training course is to take you through the practical development processes for a simple TUFLOW model, including how to insert an ESTRY culvert. The course is delivered in a work-shop format with the provision for assistance and questions throughout the day.

This course assumes a reasonable level of competency with the MapInfo, Vertical Mapper and SMS software packages, though assistance will be provided where necessary.

### Topics Covered

- An overview of the TUFLOW file structure
- An introduction to the TUFLOW manual
- A discussion of grid selection and trade offs between modelling approaches
- Construction of a basic TUFLOW model that simulates a coastal situation
  - Creating and editing terrain (Zpts and Z-shapes)
  - Defining hydraulic roughness
  - Introducing boundaries
  - Linking a simple ESTRY culvert to the 2D domain
- Setting simulation parameters
- Identifying and addressing instabilities
- Viewing and processing of results
  - Maxima and Minima
  - Time series
  - GIS Grids
  - Animations



*TUFLOW Model of Tidal Inundation for Cranfield Mill in Ipswich*

## COURSE 3 – INTRODUCTION TO ISIS-TUFLOW LINKING

### Overview

This one-day training course in linking ISIS and TUFLOW was developed by our in-house team. The objective of this training is to take you through the processes of joining a pre-existing TUFLOW model and a pre-existing ISIS model. The course is delivered in a work-shop format with the provision for assistance and questions throughout the day.

This course assumes a reasonable level of competency with the ISIS, TUFLOW, MapInfo, Vertical Mapper and SMS software packages, though assistance will be provided where necessary.

### Topics Covered

- An overview of the ISIS-TUFLOW file structure
- An introduction to the elements used in the preliminary ISIS and TUFLOW models
- A guided hands-on application of the 1D/2D linking including both HX and SX boundaries
- Setting simulation parameters
- Diagnosing and addressing problems
- Representation of a gauge structure
- How to extract and present model results including the production of flood outlines, hazard, depth and velocity grids.



*ISIS-TUFLOW Model of Lleden Brook in Welshpool*

## MEET YOUR TRAINING TEAM

**Chris Whitlow** Director, BSc, PhD



Chris Whitlow is a Director of Edenvale Young. Chris is responsible for multiple flood forecasting projects as well as rating curve extensions, flood risk mapping and other large scale projects. He has 25 years experience in ISIS modelling and has been actively involved in the development of the software.

**Peter Aylett** BSc



Peter has been using ISIS-TUFLOW since it started emerging into general practice in the UK in 2006, quickly establishing himself as an expert user. Following several requests for assistance with certain aspects of the program, and compiling short "how-to"s, it was felt it was time he wrote a full introductory training package for both TUFLOW and then ISIS-TUFLOW. He has been giving these training courses successfully for several years now. Peter is also the leading UK contributor to the TUFLOW forums, answering many and varied questions.

**Claire Wasiak** MEng



Claire has modelled exclusively using ISIS, TUFLOW and ISIS-TUFLOW on a wide variety of projects since joining Edenvale Young in 2009. She has undertaken a major revision of our TUFLOW and ISIS-TUFLOW training modules in conjunction with Peter, to incorporate new features, give them the format of real world application and include handy hints.