Meeting the Environmental and Engineering Challenges of Climate Change Through the TSA's Bespoke Inland Hydrography Training Course.

Edwin Danson (United Kingdom)

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SUMMARY

The significant increase in regional flooding events and other consequences of climate change, prompted the TSA's Survey School to expand its syllabus with the addition of an inland hydrography module specifically designed to provide land surveyors (who undertake much of the inland water-related surveys) with a sound grasp of the principles for surveying inland water bodies.

The course, which includes aspects of the UK's Environment Agency and the MCA's Civil Hydrographic Program specifications, has been carefully devised to build on the existing skills and knowledge of the principles familiar to land surveyors.

The paper will discuss the rationale and structure behind the short course and the various modifications and changes implemented in light of practical student delivery. In particular, the focus on the individual modules, their order of delivery, and how they are linked together in such a way as to build on familiar land surveying techniques through the necessary development of an awareness and elementation of the hydrographic principles. Traditional hydrographic surveying principles are compared and contrasted with the requirements for inland waters surveys with their specific need for data acquisition and presentation to meet the civil engineering tasks so crucial for flood mitigation and similar measures.

Whereas processed GNSS is the prime surface positioning solution for coastal and offshore hydrographic projects, in the presence of masking structures (buildings, bridges, tunnels etc), and the proliferation of vegetation, the Total Station (robotic or otherwise) is more often the best instrument of choice. In a similar vein, the accuracy and precision of through-water measurements are in the main less than that achievable on dry land. This has often been misconstrued as meaning hydrographic surveying is "less accurate" or less demanding than regular land survey, therefore the

course addresses this misunderstanding by focusing the students' attention on the reality of maximising the achievable.

The presentation of inland hydrographic data has, to some extent, been obliged to follow the often dated modelling techniques used by hydraulic engineers. The paper will advocate a radical overhaul of modelling techniques in order to exploit the full range of data capture to deliver an advanced representative and reactive solution for more informed engineering solutions.

The UK Land & Hydrographic Survey Association's Survey School in Worcester is the only commercial training centre in the UK accredited by the Chartered Institution of Civil Engineering Surveyors for providing courses to the land survey profession.