



Waterman floods the UK

Waterman Civil & Transportation Group (WCT), one of the original UK users of 12d Model civil and surveying software from 4D Solutions, has finalised an initial study for a housing development of 3000 homes at Waterlooville on the South Coast of England.

This study involved a detailed assessment of flood risk in the area. The Environment Agency had created rough flood outlines based on a 50m grid using the Flood Studies Report, but a detailed assessment was required for planning to determine the existing flood plain and to compare this with another post-development flood study.

For cost and speed, aerial photogrammetry was ordered to cover the entire site and local surveyors were used to locate the property boundary using traditional means. The resultant photogrammetry (dgn format) and boundary (dxf format) were merged into a single 12d Model digital terrain model of several hundred thousand points.

To obtain finer detail of the river and to verify the model of the plain, further detailed river cross sections were then surveyed. In the office, work began on building the HEC RAS project inside 12d Model.

After ensuring concurrence on hydrological methodologies with the local Environment Agency office, WCT carried out the back water hydraulic study.

Graduate engineer and 12d Model user, Richard Russell, said; Using 12d Model with HEC RAS, I was able to devote more time to sensitivity tests in HEC RAS and in 12d Model. I had the luxury of time to try different roughness coefficients and to test if ground cover picked up with the photogrammetry had a significant impact on the results. This gave us better confidence in the final results.

In addition to creating the HEC RAS project, 12d Model was used to present the water level results. Detailed drawings were produced for submission to the Environment Agency. Internally, the visualisation abilities in 12d Model allowed quick checking at all stages including the final water levels.

12d Model cut the time taken for this type of study significantly, noted project director for WCT, Stuart Aldridge. This was the first time we had used 12d Model for flood modelling and we were very impressed.

Previously, significant resources were devoted to what I now view as laborious and unnecessary data entry. We also get to use survey data at a much earlier stage, which is proving useful on such a big development. We still propose a detailed survey for a later date but, for now, our client can defer the significant cost of the survey until much later.

While WCT and its client were benefiting from using 12d Model on this project, the two other parties involved also had the opportunity to see it in action on a live project. Although both have different interests and uses for 12d Model, surveyors Julian Brotherton & Partners and the Environment Agency were both impressed with 12d Models quick manipulation of data and 3D abilities. Within a few months, both parties became 12d Model users themselves.

About 4D Solutions:

12d Model (previously known as 4d Model) was developed by Australian specialist software house 4D Solutions Pty Ltd. It is currently in use at organisations in Australia, New Zealand, Asia, the United Kingdom, Canada and the United States.

4D Solutions Pty Ltd is a privately owned Australian company established in 1988. Based in Sydney, the company sells and supports 12d Model direct and through distributors.

For more information, please call: 4D Solutions Pty Ltd, ph: 02 9970 7117, fax: 02 9970 7118 or visit the 4D Solutions websites at [www.4dsolutions.com.au](#) and [www.4dsolutions.com](#).