G H Patel College of Engineering & Technology, V. V. Nagar

Department of Civil Engineering

Report on

Three Days Webinar Series on "Water Management Modelling using DHI Software"

Thousands have lived without LOVE, not one without WATER. That's why water management is one of the biggest challenges today we're facing globally. With this motive, the Civil Engineering department and ISTE Student chapter at G H Patel College of Engineering & Technology (A Constituent College of CVM University) in collaboration with DHI India had organized Three Days webinar series on "Water Management Modelling using DHI Software" to understand how modelling can better support planners and managers in decision making and how unique software can play crucial role from 8th to 10th June, 2020. Total of 204 participants (Students, Faculties, Corporate people) have participated from across the various states.

Day – 1 (08/06/2020)

About the Speaker:

Mr. Manish Kumar did his M.Sc. in Water Resources Management from TERI University. He is working as a Hydraulic and Hydrological Modelling Specialist in DHI India. He is specialized in Flood forecasting, network design or water supply & sanitation, field data collection for river modelling & basin management. He has working experience on MIKE operation, MIKE Hydro River & Basin, ArcGIS, Map info, Infor works, ERDS Imagine, SEWE, Sewer Cad, AutoCAD, Loop & Branch etc.

About the Talk:

The day – 1 of webinar series started with greeting to all the participants and sharing information about the department and showing glimpse of CVM university by Ratansharan Panchal, *Assistant Professor, Civil Engineering Department* and *Coordinator* of the webinar series. Then Mr. Ajeet Singh, *Manager, DHI India* were invited to talk about DHI India. After that Dr. Khadeeja Priyan, *HOD, Civil Engineering Department* and *Convenor* of the webinar series have introduced the speaker of the day.

Mr. Manish Kumar started his session with the introduction of the software called MIKE Hydro Basin which is use for river basin management and planning. MIKE HYDRO Basin is a multipurpose, map-based decision support tool for integrated water resources analysis, planning and management of river basins. MIKE HYDRO Basin is designed for analysing water sharing issues at international, national or local river basin scale. It's a comprehensive yet simple product for investigating options and making reliable decisions. Then he explained about various benefits of the software and some of the key benefits such as MIKE HYDRO Basin provides an easy-to-

use, map-based modelling framework for water resources management and planning in river basins, Design model layouts using embedded GIS features and functionalities etc. After that sir has discussed and explained its various applications and showed a typical problem analysis in that same software as a demo to make participants understand about its various functions and use.

Day – 2 (09/06/2020)

About the Speaker:

Mr. Mark Falcon BRITTON did his bachelor of Civil Engineering from James Cook University. He is working as Director Sales, DHI Australia. He has experience of 25 years in water resources engineering, Hydrology & Hydraulics and has advanced knowledge of both 1D & 2D numerical models used to describe flood behavior in rural and urban environment including MIKE Urban.

About the Talk:

The webinar session commenced with the greetings and introduction of the expert of the day. Mr. Mark commenced his session with the discussion of DHI Australia and its work. He then began discussing about MIKE FLOOD software which is one of the general software uses for urban, coastal and riverine flooding. As per his discussion MIKE FLOOD is the unique toolbox for professional flood modellers. It includes a wide selection of specialized 1D and 2D flood simulation engines, enabling you to model any flood problem - whether it involves rivers, floodplains, flooding in streets, drainage networks, coastal areas, dams, levee and dike breaches, or any combination of these. The core elements in MIKE FLOOD are well-proven models, MIKE HYDRO River for rivers, MIKE URBAN for collection systems and MIKE 21 for 2D surface flow. These are coupled to form a unique and trend-setting three-way coupled modelling tool. He then discussed about the various benefits of MIKE FLOOD such as parallel 2D engines which provides a unique framework for coupling 1D and 2D models using graphics processing (GPU) for fast simulation execution etc. Sir has also explained about typical applications of this software along with a demo of suitable problem for better understanding of various functions in software.

Day – 2 (09/06/2020)

About the Speaker:

Mr. Morten Just Kjolby did his M.Sc. in Civil Engineering from Technical University of Denmark. He is Product Manager for Urban Water, DHI's Group Sales with particular responsibility for MIKE URBAN+. He is also WaterNet Advisor for MIKE VIEW. He has specialized knowledge of climate adaption and urban water consultancy projects in Denmark as well as in Europe, Australia, New Zealand, Middle East, Africa, Asia and United States. He has extensive training experience in MIKE URBAN and other relevant models within urban drainage, Water distribution and urban flooding worldwide.

About the Talk:

Mr. Morten started his lecture with introduction to MIKE URBAN+ and discussed in brief about it. As per his discussion MIKE URBAN+ is used to model all pipe networks withing a city using one modelling platform and is the go-to software for all urban water modelling needs. It's a powerful tool for the modelling water distribution, collection system, rivers and flooding. One can develop comprehensive master plans, plan maintenance work, optimize system performance and capacity, reduce leakages and so much more. He then discussed about how this software can better be used for plan, manage and optimize water distribution network. He showed that with MIKE URBAN+ one can perform hydraulic and water quality modelling of water distribution network to optimize performance, gain advanced control of pumps and valves as well as reduce non-revenue water and manage leakages. Other advantages of this software are modelling of stormwater drainage and sewage collection in storm drainage and wastewater collection systems. One can relay on MIKE URBAN+ to accurately simulate the functionality of separate or combined systems under a variety of operational and boundary conditions. Also, it is possible to perform integrated modelling of collection systems, river and 2D flooding. And he then discussed that with the use of it one can build a more resilient city with 2D dynamic flood modelling. He lastly demonstrated one the models to explain about its functions and its use.

All three webinar were brain storming session for all students and other participants. From this webinar series, participants got the information about importance of efficient software in water resources planning and modelling. Also, about the various software developed by MIKE powered by DHI and its applications.

AIM:

The main aim of the expert talk was to understand how modelling can better support planners and managers in decision making and how unique software can play crucial role.