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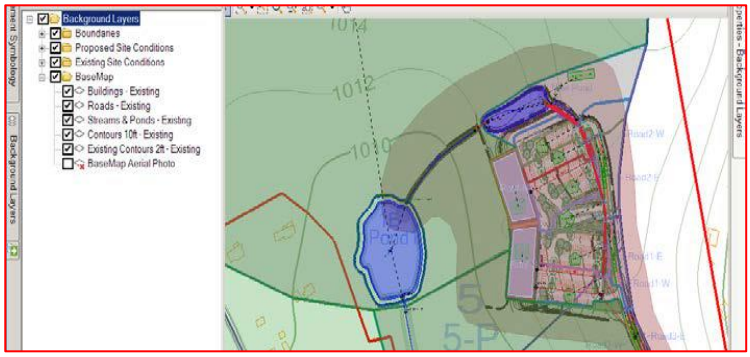
TRAINING: SEWER SYSTEM HYDRAULIC DESIGN AND MODELLING

LEVEL: FUNDAMENTALS AND ADVANCED
PLATFORM: SEWERGEMS/CAD CONNECT EDITION

COURSE TARGET: HYDRAULICS AND HYDROLOGY ANALYSIS & DESIGN ENGINEERS
PREREQUISITES: A CURSORY UNDERSTANDING OF SANITARY SEWER AND/OR STORM COLLECTION SYSTEMS IS RECOMMENDED
CERTIFICATIONS: THIS IS A BENTLEY INSTITUTE ACCREDITED COURSE AND THE PARTICIPANTS WILL BE ISSUED WITH A BI COMPLETION CERTIFICATE



This training begins with the fundamentals of hydraulics & wastewater engineering and then takes the participants through the advanced processes of sanitary sewer network modeling including automatic model development, multi-scenarios modeling, automatic designing tools, consideration of inflows/ infiltration, network augmentation strategies, demarcating sewer districts and lastly, generating reports. To gain insights on collection system hydraulics, new system design, and capacity analysis for wastewater collection systems

Participants complete hands-on exercises using SewerGEMS/CAD software, a dynamic analysis tool that can run directly within the GIS environment. Both steady-state and extended-period simulations (through time) are presented in this course, as well as gravity and pressure system components.

Participants learn to customize plan and profile sheets, tabular reports and sanitary and wet-weather loadings. Exercises apply SewerGEMS and SewerCAD tools to leverage existing GIS and database information to build models and populate loadings. Analyses of combined sewer systems are also covered in this course.

Upon successful completion of this course, the participant shall be able to:

- Apply the fundamental principles of sanitary sewer modeling;
- Gain essential knowledge for sewer design, operation, and troubleshooting;
- Apply SewerCAD/SewerGEMS models to solve common sewage collection system problems;
- Develop a deeper understanding of model creation and analysis using SewerCAD/SewerGEMS;
- Increase productivity by using automated approaches to complete common modeling tasks.

Bentley Institute
Product Training Partner
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Sewer agenda

Time	Day 1	Day2	Day 3	Day 4
8:30	**Sewer Modeling Theory** **Presentations:** 1. Sewer System Overview 2. Gravity Flow Hydraulic Principles	**Extended Period Simulations.** **Presentations:** 1. Extended Period Simulations 2. Unsteady Flow Hydraulics and Graphing.	**Designing a New System.** **Presentation:** 1. Design of Gravity Systems 2. Constraint based sewer design **Catchment Hydrology** **Presentation:** 1. Hydrology	**CSO Analysis** **Presentation:** 2. Model Calibration
10:30	**WORKSHOP**	**WORKSHOP**	**WORKSHOP**	**WORKSHOP**
12:00	LUNCH			
13:00	**Constructing Gravity and Pressure Networks.** **Presentations:** 1. Creating the Model 2. SewerCAD/GEMS (Demo) 3. Force Mains and Pumps	**Geospatial Data Tools:** **Presentations:** 1. Building Models from Geospatial Data 2. Load Builder – Trex Terrain Models	**Water Quality Analysis** **Presentations:** 1. Water Quality – Continuous Simulation (LID)	**Training Review.** **Presentations:** 1. Generating model reports 2. Q&A session 3. Follow through
15:00	**WORKSHOP**	**WORKSHOP**	**WORKSHOP**	**WORKSHOP**
17:00	DAY FINISH WITH Q&A			