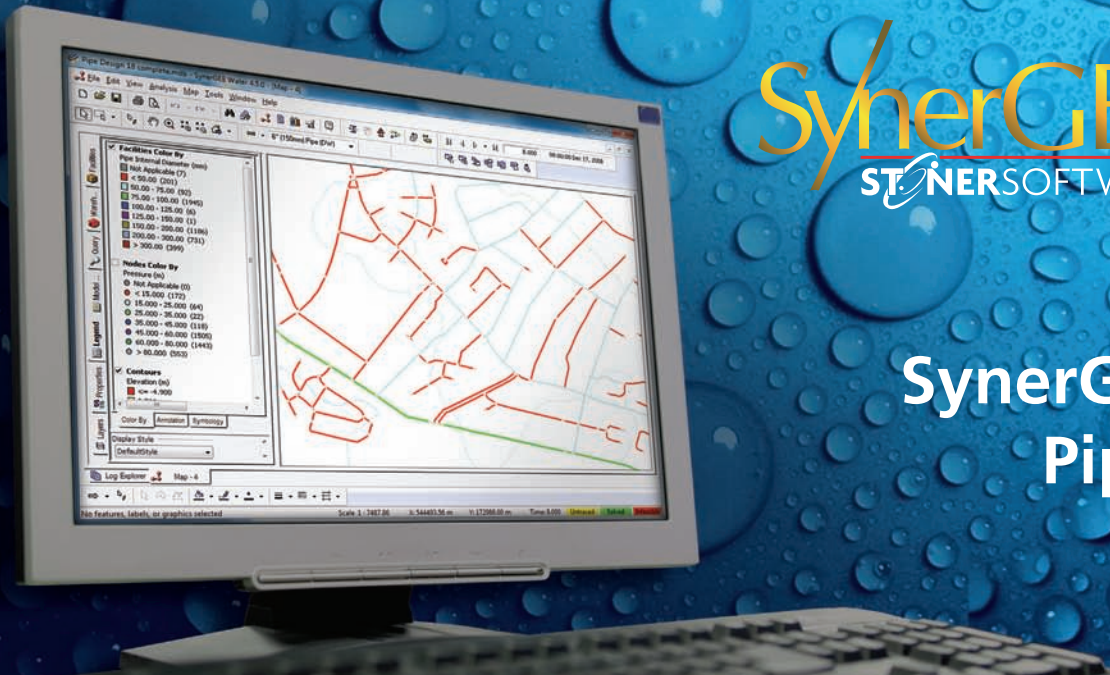


SynerGEE Water Pipe Design Module



Pipe Design

The SynerGEE® Pipe Design Module (PDM), enables you to provide least-cost designs for system expansion and rehabilitation. You simply enter a table of pipe cost vs. size, specify your targeted region and the design condition, note the constraints upon the design, and analyze. SynerGEE does the rest. Applying sophisticated optimization capabilities, SynerGEE automatically can compute a set of design choices. Compare costs and resulting network performance, and then choose the most appropriate configuration. Let SynerGEE suggest the options while you attend to other important matters.

How it works

SynerGEE Pipe Design Module uses genetic algorithm technology to solve the following objective problem: minimize cost of design subject to constraints upon delivery such as minimum pressure, maximum velocity, etc. The constraints are applied as penalties on the objective function, driving the algorithm to seek a different solution. To evaluate constraints, SynerGEE's tried and true hydraulic engine computes the hydraulics repetitively, allowing quick computation of the penalties.

Genetic algorithms are "blind" in that they propose solutions that an engineer logically would not accept. SynerGEE goes beyond the GA by providing options to place common-sense limitations upon designs, eliminating conditions such as random diameter changes and "telescoping" pipelines.

Benefits

- More efficient design process
- Lower cost designs
- Improved planning and decision making processes

Beyond just software

GL provides a range of engineering services to help you produce trustworthy, low-cost designs. Through our services team, we can go beyond just pipe sizing to recommend district meter area boundaries, trunk main routes, and pressure reduction targets. We also have advanced software and services to help determine which pipes are most likely to fail, and which techniques will produce the most economical rehabilitation plan. Trust GL to be your partner in new piping system design and old system rehabilitation.

