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“Avatech has helped me to take our civil engineering to the next level. By helping me to implement Civil 3D, I can be more efficient and produce better engineering solutions while ensuring drawing accuracy and coordination for construction – ultimately saving taxpayer dollars.”

—Scott Latta, Engineering Technician  
City of Coppell

## CITY OF COPPELL ADDS NEW DIMENSION TO CIVIL ENGINEERING

### THE ORGANIZATION

Located in the heart of Dallas/Fort Worth, the City of Coppell is home to 40,000 Texans. The city’s Engineering Department provides a variety of services relating to the design and construction of the city’s capital improvement program projects and subdivision development. These include plan review, inspections services, and overall construction management for CIP projects constructed in the public right-of-way, and plan review and inspections services for subdivision development.

### THE CHALLENGE

Scott Latta, an Engineering Technician in the Engineering Department, undertakes several civil engineering design projects each year. Designs are sent out to construction companies which then build and complete the projects. Due to the complexities of city engineering, projects are often quite intricate and time consuming. Small changes can impact multiple systems which makes adjusting plans difficult. The prohibitive cost in time, energy, and money of revising plans means that problems often appear first in the field where alterations are more expensive and cause significant delays.

### THE SOLUTION

With the help of Avatech Solutions, the city recently made the transition from 2D AutoCAD to engineering modeling using AutoCAD Civil 3D. Civil 3D allows planners and engineers to see how even the smallest changes can impact the big picture. The three dimensional modeling program greatly improves ease and accuracy for planning city engineering projects but, as with all new technology, requires new skills.

“Civil 3D is not the same as the basic AutoCAD product, so the learning curve can be steep,” says Latta. “It takes a whole new way of thinking about drawing objects as models. I took four days of training with Avatech, which got me up and running. Now, because I work with it regularly, I learn more each day and am becoming proficient on the job.”

Latta’s goal for the near term is to redesign a sewer replacement and then a water line replacement, learning as he goes and teaching colleagues the features they’ll use most along the way. “We are starting out by taking baby-steps with a couple of pilot projects redesigning traffic lighting in two parts of the city,” said Latta. So far, they are really pleased with the results – and for the first time in years the contractor actually complimented Latta on his thoroughness and clarity of the detail in the lighting drawings.



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# Infrastructure design

## SIGNIFICANT REWARDS

### Better Communication = Better Expenditure of Tax Dollars

Civil 3D allows engineers to spot potential problems before workers encounter them in the field. Checking potential interferences right in the drawing minimizes costly field errors and improves planning and collaboration. This increases the willingness of the team to investigate design alternatives which encourages more feedback from the construction companies which in turn allows for better designs with fewer flaws, and less tax dollars spent on costly corrections and changes in the field.

### Measure Twice, Cut Once

Due to the improved coordination capabilities of Civil 3D, less time needs to be spent in the field, or on the road, as is the case with many city projects. This means projects are completed faster, decreasing disruption to citizens. It also means that the City of Coppell can entertain more complex projects while minimizing negative impact on citizens.

### Prepared for Emergencies

Using AutoCAD Map 3D, the City of Coppell creates three dimensional maps for emergency and security purposes. These maps show locations of fire hydrants, water and power mains, call boxes, gas lines, water treatments, and other vital sites which can save lives and prevent disaster in case of emergency. Emergency department telephones are linked to the maps, shortening response times for 911 teams because they know precisely where to locate key infrastructure.

## THE FUTURE

### 3D City Online

Through the use of Civil 3D software, the future is bright for improved communication and services for the citizens of Coppell. "Seeing the benefits of 3D map technologies in action, the city is now looking at providing more information online to residents using Map 3D, and the GIS department is determining how they can leverage it for city limits, creeks, parcel definition, zoning maps, transportation corridors, and parks," says Latta.

## ABOUT AVATECH

Avatech Solutions is a leading engineering systems integrator, with unique solutions that enable companies to more effectively design, develop, and manage projects, products, and facilities.

We get results with the unique capabilities of our team of industry-experienced professionals—application engineers, consultants and strategists, trainers, software developers, and project managers.

With offices nationwide, we specialize in process optimization, software implementation and integration, standards development and deployment, education, and technical support.

Our expertise is real. And so are the results that we bring to our clients. Avatech can help you succeed, with solutions that align your technology and processes to your organization's goals—for results the way you define them.



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