

David Evans and Associates, Inc.

Customer Success Story

AutoCAD® Civil 3D®

With Civil 3D we saw a significant time savings—upwards of 27 percent in production plan development. We foresee that number increasing to upwards of 40 percent once we're past the learning curve.

—J. C. Davis
Civil 3D Project Manager
David Evans and Associates, Inc.

Do more—faster.

David Evans and Associates reduces costs and finishes production plan development up to 27 percent faster with AutoCAD® Civil 3D® software.



The Firm

Founded in 1976, David Evans and Associates, Inc. (DEA), has grown to become a leading provider of design and management solutions for complex transportation, land development, energy, and water resource projects. Its clients include a variety of federal, state, and local agencies, as well as numerous private-sector enterprises. They currently have over 1,000 employees working in more than 20 offices throughout the western United States and New York, with a staff that includes professional engineers, surveyors, planners, landscape architects, and natural resources scientists.

Recently, DEA chose to migrate from AutoCAD® Land Desktop to AutoCAD Civil 3D software, a comprehensive civil engineering product that dynamically connects design and documentation. “We believed that Civil 3D would not only save us time, but also make us more profitable,” says Nick Harper, corporate information systems AutoCAD® support

specialist and AutoCAD Civil 3D software production lead for the firm’s Phoenix branch. Working under that premise, DEA expects to produce higher-quality designs, increase efficiency, and become more profitable.

New Workflows

Appreciating how fundamentally different AutoCAD Civil 3D software is from AutoCAD Land Desktop software, the firm realized that its implementation required much more than just simple update training. “With Civil 3D, everything—setting up drawings, interacting with them—works differently. We have over 30 years of workflow history, so we knew that the transition to Civil 3D would require a major review and overhaul of our current workflow, which in turn required a complete organizational commitment for the transition to this new way of working,” recalls J. C. Davis, a corporate information systems AutoCAD support specialist and AutoCAD Civil 3D software project manager for the DEA corporate headquarters located in Portland, Oregon.

Autodesk®

“Civil 3D’s dynamic model presented us a completely new design approach, and that meant completely training our users, reviewing our CAD standards, and examining our workflows to determine whether to leverage Autodesk Vault for data management or rely on data shortcuts,” says Harper. But it also presented DEA the opportunity to increase their competitive advantage and provide enhanced levels of service to their clients. “DEA is always investigating new field-to-finish strategies, including technology advances like dynamic modeling,” remarks Harper.

Implementation Methodology

DEA is taking a phased approach to their implementation of AutoCAD Civil 3D software. “We started with a manageable team of user—10 people from various offices to represent our disciplines—and trained them as Civil 3D ‘gurus’ who can provide expertise and support services to their regions,” explains Davis.

Training was critical for a successful implementation so they relied on outside training specialists from CADapult, an Autodesk certified trainer. “CAD Masters, our reseller, provided us external technical support,” says Davis, “and they’ve been second to none.” Training is being completed in stages—the ‘guru’ group was first, and then regional training is delivered as the product is deployed throughout DEA’s offices.

They also picked a manageable job to tackle for their pilot project, one that included all of their major disciplines, so they could thoroughly examine AutoCAD Civil 3D software in production and identify the workflow changes that would be required.

During this pilot project, the team met frequently to document what went right, what went wrong, and what needed to be done before deployment to a wider audience. “The implementation of Civil 3D has been successful,” says Davis. “We recently completed our first project, and we’re planning on moving the majority of our Land Desktop users to the Civil 3D environment over the course of the next 18 months—team by team. By the time we’re done, we should have upwards of 300 users converted to Civil 3D.”

The Project

Since adopting AutoCAD Civil 3D software, DEA has completed two projects, the most recent being a large residential land development project near Phoenix, Arizona. This project consisted of 72 lots and seven residential streets. “We had to produce preliminary and final plots, as well as on- and off-site grading plans, paving plans, underground utilities, and profile sheets,” reports Davis. “Ultimately, we wanted to produce a single, complete sheet set from each of those plan sets.”

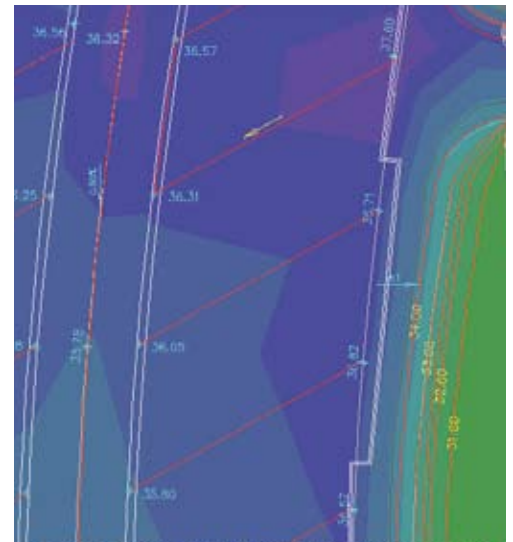
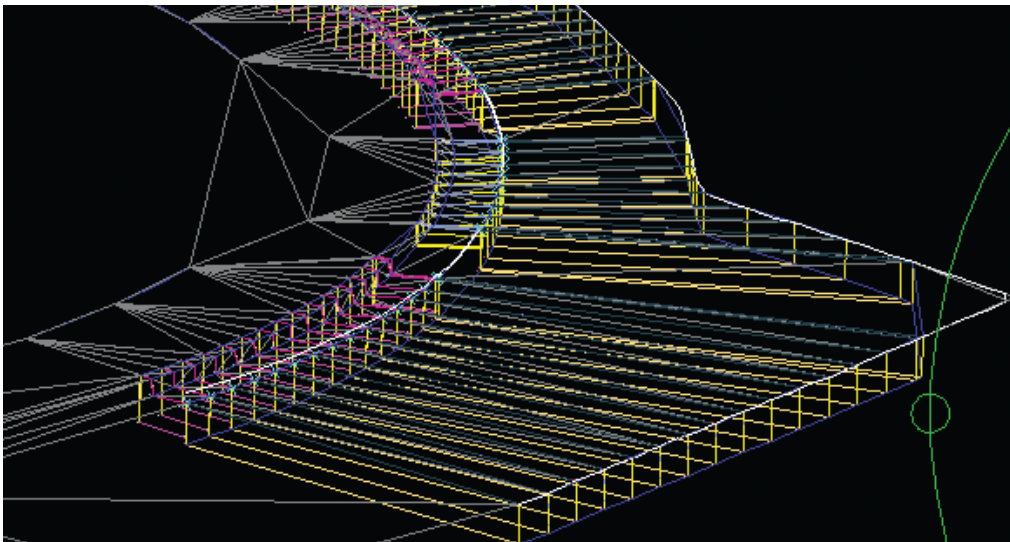
Gain Valuable Time

One challenging aspect of this project was the time constraint. To meet their deadlines they would have to start the design before all the survey information was available. That’s when they realized the time savings they could get from AutoCAD Civil 3D software. “Once we got into the project, we quickly realized what a huge advantage it was to be able to begin designing the project before we actually had all of the survey data for existing conditions,” says Harper. For example, they started the project

The Vault data management system allows an organization to leverage all its resources—which is definitely well worth the effort. Our ability to share resources across offices, and allocate work assignments regardless of location, is a huge advantage for us—maximizing our resources to the benefit of our clients and our projects.

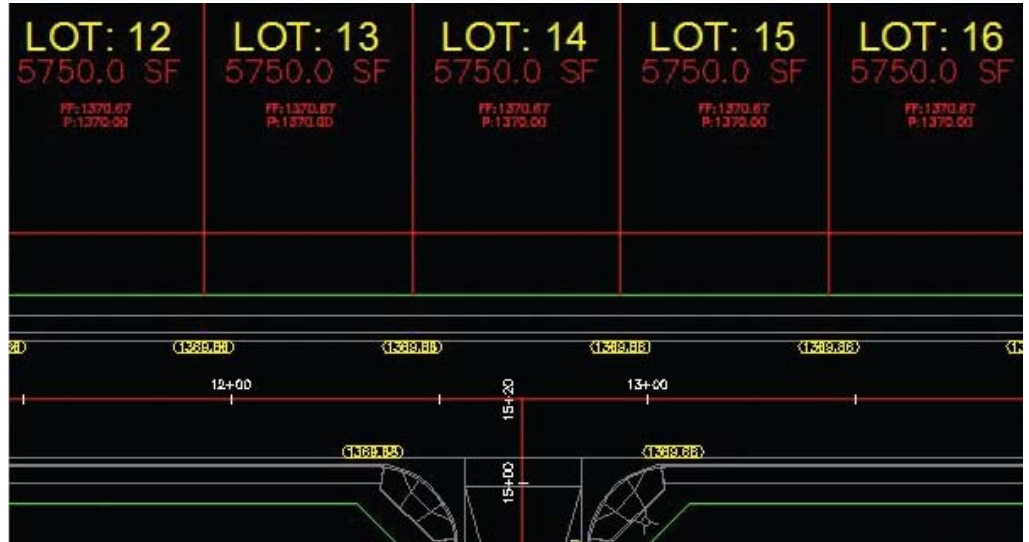
—J. C. Davis
Civil 3D Project Manager
David Evans and Associates, Inc

by working on the design of pipe networks and other underground utilities. Then after the survey information was processed, they simply made adjustments to the pipe networks, corridors, and alignments—and the design model dynamically updated to match the survey data. “That kind of functionality is particularly valuable on a project like this; one with extremely short deadlines,” remarks Davis.



The automated drafting in Civil 3D allows a parallel workflow between drafting and design. Sheets can be set up and then labels filled in on the fly, reducing errors and speeding up our final plan production.

—Nick Harper
Civil 3D Production Lead
David Evans and Associates, Inc

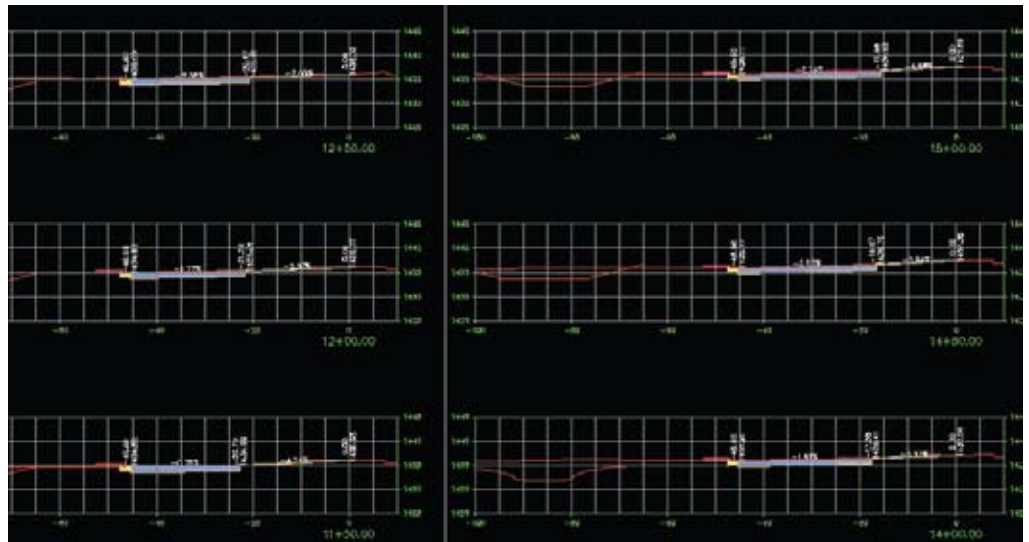
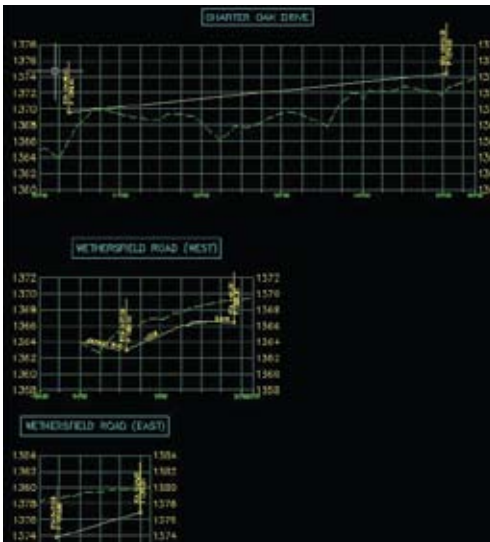


Focus on Design

The dynamic model in AutoCAD Civil 3D software automatically synchronizes design and drafting so you can immediately see the impact of proposed changes. “That allows us to focus more on design. We can explore and evaluate more design alternatives—especially in the preliminary stages—without a negative impact to the project schedule,” says Harper. “For example, on the Phoenix project our planner was able to produce several different lot layout scenarios in a very short amount of time—in less than 24 hours in fact. Without Civil 3D, it would have taken us several days.”

Improve Documentation Quality

The dynamic link between design and production drafting allowed DEA to not only produce contract plans and documents more efficiently, but keep those drawings in sync with the design, without the overhead of manual drawing coordination—leading to a higher-quality documentation set. In addition, during the implementation phase they had used AutoCAD Civil 3D software styles to reflect their company’s design and production drafting standards—so even drafting elements such as linetype, increment of contours, or the labeling that appeared in profiles and cross sections were in sync with their corporate standards.



“The dynamic model allows us to see our design instantly—instead of continually rebuilding items after edits,” reports Harper. “The automated drafting in Civil 3D allows a parallel workflow between drafting and design. Sheets can be set up and then labels filled in on the fly, reducing errors and speeding up our final plan production.”

Improve Coordination

In addition to improving the quality of the design and documentation, AutoCAD Civil 3D software improves the coordination between the various offices and discipline areas within DEA. Using the integrated Autodesk® Vault data management system, DEA is able to precisely control access to designs, drawings, and data. Because everyone gets real-time project updates instead of having to trade files back and forth, DEA is able to keep its documents consistent across multiple offices and disciplines.

In their environment, DEA decided to use Vault over data shortcuts. Working with their IT department, they established a server, loaded SQL and Autodesk Vault software, and then set up user accounts, groups, and permissions. Once this process was completed, Vault was ready for use.

“Vault gives us one single control point at the desktop to find the status of different drawings and

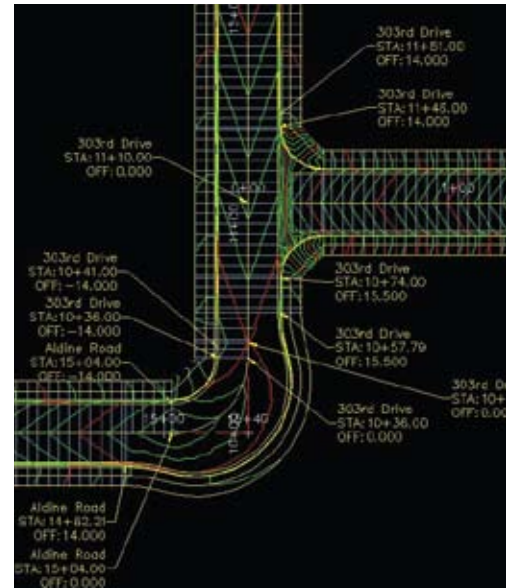
documents stored on various local servers,” says Davis. “It has definitely resulted in better team coordination.” Autodesk Vault software represents a continuously up-to-date source of information, so users always know they are working with current design data. “No more reimporting alignments or surfaces because we weren’t sure if the information was current,” explains Davis.

“The Vault data management system allows an organization to leverage all its resources—which is definitely well worth the effort,” remarks Davis. “Our ability to share resources across offices, and allocate work assignments regardless of location, is a huge advantage for us—maximizing our resources to the benefit of our clients and our projects.”

Achieve Big Savings

“The biggest benefit of Civil 3D for this project was the cost savings we realized by being able to provide contract plans and documents in a more efficient manner,” says Davis. “We also saw a significant time savings—upwards of 27 percent in production plan development. We foresee that number increasing to upwards of 40 percent once we’re past the learning curve.”

To learn more about AutoCAD Civil 3D, visit www.autodesk.com/civil3d.



On the Phoenix project our planner was able to produce several different lot layout scenarios in a very short amount of time—in less than 24 hours in fact. Without Civil 3D, it would have taken us several days.

—Nick Harper
Civil 3D Production Lead
David Evans and Associates, Inc