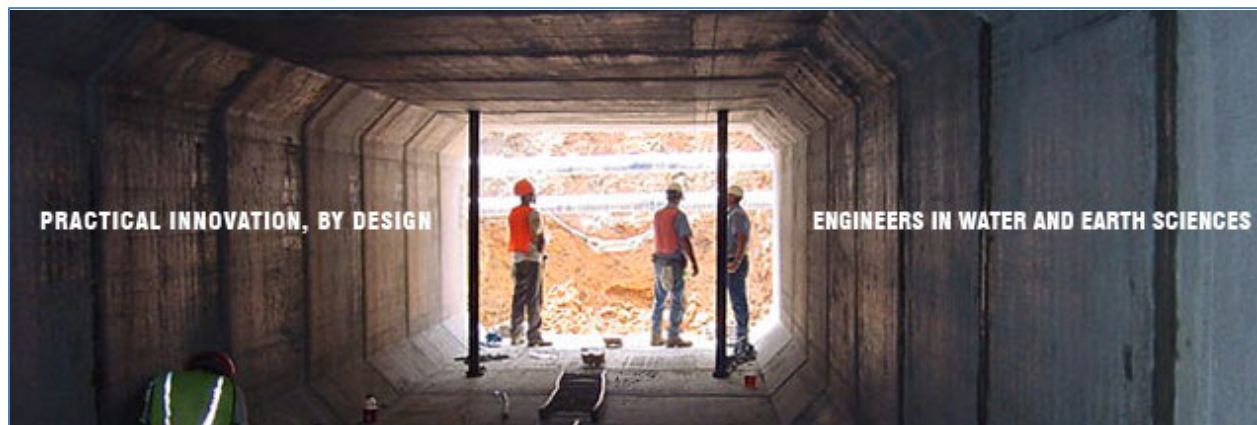


Client: CTI Engineers, Inc.

Industry: Architecture, Engineering, Construction (AEC)

Document Archiving Needs Content Management

CTI Engineers, Inc. uses document imaging for old hardcopies, but had a hard time finding the correct version later.



Thousands of companies are now archiving their past digitally. With document scanners available for even large architectural and engineering plans, there seems no reason why firms should fill their office storage with rolls of paper from years ago. While it's relatively easy to save scans on a server, the problem is that for many engineering organizations, the past often creeps back to the present. Engineers often have to refer to old projects and work on them again. The organization of the new digital archive quickly becomes convoluted.

This was the situation at CTI Engineers, Inc., a civil engineering firm with a staff of 70 distributed through six offices in Tennessee, Ohio, and Georgia. CTI takes on civil engineering projects from local municipalities and utility companies, generating stacks of hardcopy infrastructure plans with every new project. Over the years, these paper drawings piled up in rolls and in drawers; at the same time CTI's own AutoCAD, MicroStation, and ArcGIS mapping output accumulated in various network folders on their servers, not to mention reports, specifications, inspection logs, and other project-related files.

So CTI started optimistically with the straightforward strategy – use a document scanner to convert paper archives from each office to digital archives in Windows server folders. This electronic document

storage strategy moved CTI closer to the ideal of the paperless office, says CTI's Network Administrator Steven James, but it fell short when engineers needed to access the scans.

"We had been using standard Windows file servers. Because not all the branch offices could access each other's servers, it was difficult to predict which office held the archived file when you needed it," James explains. "The clerical staff had access to all the servers and they could hunt down the file and email it to you, but after a while, this created serious version control problems. It was extremely difficult to know where to find the latest version of a file. People would work on the emailed versions, save them in the shared folders in new folder structures and send them back to the archive that way. After many years of working this way, everything was kind of a mess."

James realized that electronic document archiving is not complete without some measure of content control. He began to research document management systems on the Internet for a simple content control software that addressed CTI's current situation. "We wanted to store everything in one place and access it from any of the branch offices or on the web – from any computer, basically," he says. "We needed a digital archive that was quickly searchable and easily usable by all of our employees."

Three criteria: web access, version control, and Windows integration



CTI's searches for CAD-related document management systems (DMS) brought up Motive Systems' CAD plotting application called M-Color, as well as another innovative software product, M-Files. M-Files document control software has a flexible web interface that provides accessibility to all Windows documents online from anywhere. But the most attractive feature to James was the fact that M-Files integrates its interface directly into Windows Explorer and the save/open boxes of every Windows application – places where employees instinctively go to search for files.

"We wanted the document management software to easily adapt into our current workflow because – I don't know how to say this politely – but engineers are somewhat stuck in their ways," laughs James. "We are a company of engineers so the Windows Explorer integration was important. M-Files had the three main criteria we were looking for: Explorer integration, version control, and web access. The other systems did not have Explorer integration. That was the main thing that allowed us to move forward quickly with implementation. M-Files integrated with our current workflow using the familiar Windows Explorer to find our files."

Custom database searches for content management

When CTI's engineers save DWG files from AutoCAD, they can save to M-Files through the same dialogue box they normally use. The difference is that users no longer have to choose a server; everyone saves to one place, the M-Files Vault. And instead of choosing among appropriate folders or making new ones, CTI engineers identify the file more precisely. They attach a few key terms -- information like client name, project number, or location of infrastructure. This data, along with author, date, and time, are stored in the M-Files database. Office managers and network administrators can easily set up which properties are required for a particular document type. The same rules apply for

scans of paper infrastructure plans sent from a municipality or utility company. No matter what the document or from which branch office, every new file is saved into a single location: M-Files.

The result of M-Files database-driven content management software is instant retrieval of the right document without worrying that there might be a more up-to-date version floating around somewhere. Employees simply type in a few of the attributes in the search box, and the M-Files interface displays all relevant documents company-wide. The database enforces comprehensive version control over both archived projects and new projects. From the M-Files search, engineers can see not only the original file they want, they can see if any new work has been performed in the meantime.

“M-files gives us different ways to look at our projects. Before, we’d have documents arranged in folders by year or month, or maybe by client,” says James. “With M-Files, where the file is doesn’t matter; we can search by client or by type of information, or by date; it’s much more efficient. Employees using M-Files’ search have definitely increased their speed in finding files. With the old server system, it might have taken five or ten minutes to pull up an archived file, now with M-Files it is much faster.”

Records management within a distributed digital archive

From an IT perspective, CTI’s Network Administrator is happy about the solution. “Absolutely, M-Files document management has been successful for us,” says James. “It is very easy to maintain, backing up is easy, and it runs only on one server, so keeping it up is simple. It interacts with our Active Directory for users and groups, so we didn’t have to change anything there. We started up the entire document control system without any implementation help from Motive Systems; we did everything in-house. Setting up the metadata was straightforward since it is similar in that respect to essentially any other database system.”

With M-Files’ simple file management software, CTI created a long-term digital archive that is smarter than just folders on a Windows server. Projects from years past were now retrievable from any branch office, or even from home or on location. The M-Files DMS cross-references old projects with recent updates, ensuring engineers are always working with the latest, most accurate version. And best of all, with integration into Windows, they do not have to change their normal routine.

About CTI Engineers, Inc.

CTI Engineers, Inc., is an employee-owned consulting engineering firm specializing in water and earth sciences. CTI offers a wide range of engineering and consulting services for both public and private sectors. With offices in Tennessee, Ohio, and Georgia, CTI provides complete planning, design, and management services from the initial conceptual stages of a project, through design and financing, to construction management and start-up assistance. For more information, please visit: www.ctiengr.com.