

AutoCAD Civil 3D 2014

Best Practice 3 – Project Management

Project management is a “big picture” issue that affects everyone on the team. Decisions about your project management system can have extensive, long-term consequences. The first challenge is to gain a clear understanding of the planning decisions required and the information you need to make these decisions.

Visualize how a particular project management system will work when it is fully loaded with design objects, drawings, and staff members sharing files. How do you keep the system flexible and efficient while still protecting the data? A strategy that works fine with a set of 20 drawings in a month-long project can break down in a long-term project with 400 drawings. Fortunately, with AutoCAD Civil 3D, you can start with a simple system and either build it up or trim it down as project requirements change.

Organising your data

Create a structure of project folders and files so every member of the team can readily find the data files they need, and save all drawings in the right place.

Apply meaningful, specific names to all files and objects that are shared within a project environment. Default names such as “Alignment – (1)” can be especially confusing, because they can appear in multiple drawings, and have no reference to a real-world object.

Establish written procedures for team members who will regularly access project files. This is particularly important if you are not using Autodesk Vault. Procedures can include the use of templates, naming conventions for files and folders, and notices when drawings are being modified. Encourage team members to communicate anything that might affect others.

For basic design objects such as surfaces and alignments, consider saving one object per drawing for maximum flexibility. This drawing structure enables one team member to open a drawing for edit while other members can operate with read-only copies. However, there are exceptions to this structure. On a small project, you may decide to store several objects in the same drawing if they will always be edited by the same person. For example, it often makes sense to keep a set of related alignments in a single drawing.

Data storage to Vault or not

With AutoCAD Civil 3D, you have a choice of data storage mechanisms. Autodesk Vault provides a secure and comprehensive data management solution, but requires formal database management and usage procedures. In most cases, it also requires a dedicated server.

You may want a simpler system. If so, you can store your projects in folders, and manage them in your own way. You must also establish procedures to ensure that data is not unintentionally deleted or changed. These procedures can be quite easy and safe for a small design team in which people have no need for shared access to many drawings and in which they keep in touch with each other’s activities.



For larger teams with a lot of design objects shared across many drawings, Vault may provide a better solution. To really settle this question, you need to understand your data referencing strategy and object relationships within a typical project.

To get acquainted with Vault, you can install it on a networked server or your own computer, experiment with using it, and review the documentation. You probably want to use Vault if you are interested in any of these features:

- Secure document locks and version control
- Assignment of user roles and file access permissions down to the level of folders within projects
- Automated data backup and restore operations
- Project labelling and archiving mechanism
- Management of data at multiple geographic sites within a single database structure

Drawing and object relationships

For all but the smallest projects, it is a best practice to maintain master drawings of common design objects, such as existing ground surfaces and alignments. These objects can then be referenced into other drawings as lightweight copies of the original, requiring very little space. The practice of referencing also protects the source data from unintentional changes, because the referenced objects are read-only copies. The source data cannot be changed in the host drawing.

The use of references leverages the dynamic relationships between objects. When a source object is edited, these changes automatically flow through all referenced copies in other drawings. You can use three types of referencing with AutoCAD Civil 3D:

Autodesk Vault

Data shortcuts

AutoCAD external references (xrefs)

As you create data references between project drawings, you construct a network of drawings. If you are working on a large project with many people, this network can become confusing and difficult to manage. To reap the benefits of data references, it is important to plan the drawing relationships in advance, and actually create a diagram for the project team to reference.

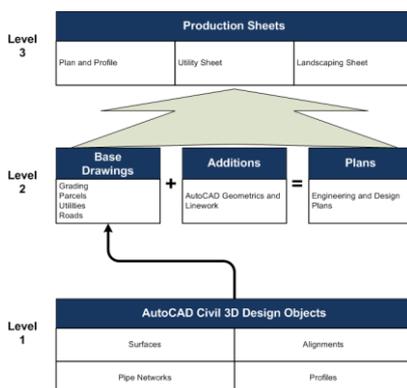


Figure 1: Three-level project drawing structure

