

Introduction to Workspaces

Prepared for:

2007 MC²
Mid Continent
MicroStation Community
August 16, 2007
Overland Park, KS

Speaker: Mark Mates, ProSoft

The development of workspaces is the most critical part to effective management of a multi-user MicroStation® installation. The workspace can be considered the cornerstone around which all MicroStation customization is build. This session is Part 1 of a two-part series and is based on excerpts from the **MicroStation V8 CAD Manager** manual by ProSoft.



ProSoft

1776 North State, Suite 200
Orem, Utah 84057
(888) 263-0393

www.prosoftnet.com
info@prosoftnet.com

MicroStation is a registered trademark of Bentley Systems, Inc.

Introduction to Workspaces

The development of **workspaces** is the most critical part to effective management of a multi-user MicroStation installation. In essence, the workspace can be considered the cornerstone around which all MicroStation customization is built. A workspace is most commonly defined as a custom “environment” or “configuration.” Data resource files, interface customization and configuration variables can be brought together under the workspace umbrella to facilitate efficient use of MicroStation throughout the organization.

Specialized workspaces can be created on a **corporate, discipline, project, client** or **individual** level. For example, a retail chain using MicroStation for facilities and store design may use individual workspaces for each design project. A large multi-discipline A/E firm may be more concerned with developing workspaces tailored to the individual disciplines within the firm. A civil engineering firm doing projects for various state transportation departments may develop customized workspaces to help conform to the standards of each department.

Why Build Custom Workspaces?

Custom workspaces can provide many immediate and measurable benefits. Not only do they promote more efficient use of MicroStation, but they also provide a mechanism to help users conform to corporate or project CAD standards.

Custom workspaces...

- Promote portability
- Make the installation easy to update and maintain
- Provide segregation of data in multi-user environments
- Simplify network administration
- Reduce demands on internal support and administration
- Reduce operator error
- Help automate many software processes
- Create a flexible interface to support many disciplines and projects
- Provide integrated CAD standards while maximizing ease of compliance

Types of Workspaces

Workspaces can take on many different forms and functions. As you begin building workspaces, it is important to consider the purpose of the workspace, the context in which it will be used and the audience for which it is intended. The following is an introduction to some of the more common types of workspaces.

Corporate Workspace

A corporate workspace can be used to set pointers to corporate standard libraries and resource files. It can also help users to conform to company standards and specifications.

Discipline Workspace

If your company supports multiple engineering or design disciplines, it may be beneficial to create discipline-specific workspaces. This type of workspace can be tailored specifically to address the needs related to data organization and standards for each discipline within the firm.

Project Workspace

Projects will likely be set up with their own directory structures, seed files, libraries and resource files. A project workspace can be used to set project-specific variables and pointers.

Client Workspace

It is not unusual for clients to request that work be delivered using their standards and specifications. A client workspace can be set up to help ensure conformity to such standards.

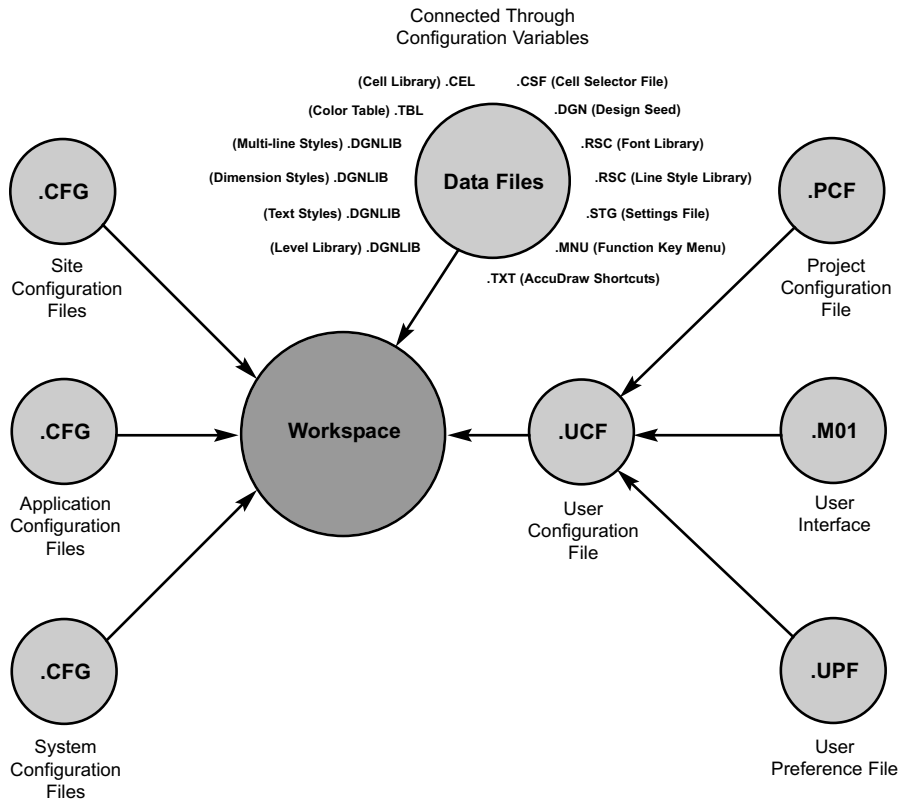
Third-Party Software Workspace

Many third-party software programs create their own workspaces that will also have to be organized and managed within the framework of the corporate system.

Workspace Components

A workspace is a collection of files, directories and variables that control the operation of the program. Key components of the workspace include the user configuration file (.UCF), the project configuration file (.PCF), the system, application and site level configuration files (.CFG), the user preference file (.UPF) and the user interface directory and file (.M01).

Figure 1
Components of a Workspace



User Configuration File (.UCF)

The **user configuration file** (.UCF) is one of the primary files of the workspace. It stores configuration variables that are most commonly set by the individual user. These are the highest level configuration variables, or in other words the variables with the highest processing priority.

Project Configuration File (.PCF)

The **project configuration file** is intended to store configuration variables that are specific to project standards and directory structures. If structured correctly, a user can simply change the active project configuration file when changing projects to update paths and default files to those used by the active project.

System, Application and Site Configuration Files (.CFG)

The **system, application and site configuration files** store lower level configuration variables that control the operation of the system, third-party application integration with MicroStation and site installation-specific settings.

User Preference Files (.UPF)

The **user preference file** stores many of the system settings related to the operation and look and feel of the system. These settings are changed in the User Preferences dialog box.

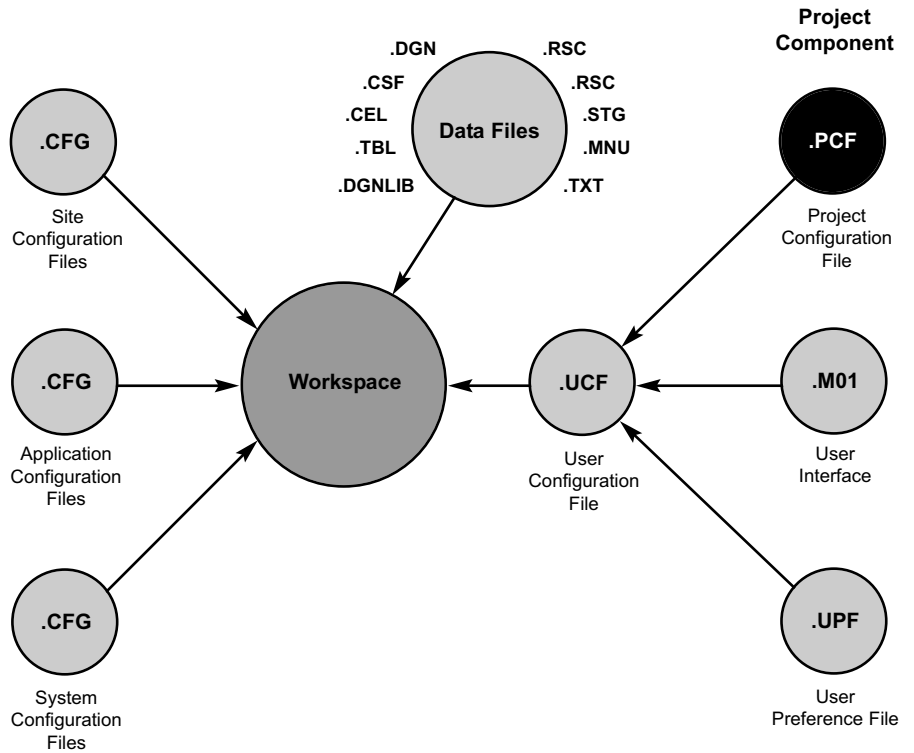
User Interface Files (.M01)

The **user interface file** stores interface customization. MicroStation creates a directory for each new interface and places an interface file (.M01) in the directory.

Creating a New Project Component (.PCF)

The **project component** stores configuration variables that point to project files and directories. Many project configuration files may be created, configured and maintained to assist users in transitioning from project to project. When a new project configuration component is selected, the pointers to default files and directory paths will change to those specified in the **project configuration file (.PCF)**. The project configuration file is an ASCII text file, which means that it can be edited in a text editor program.

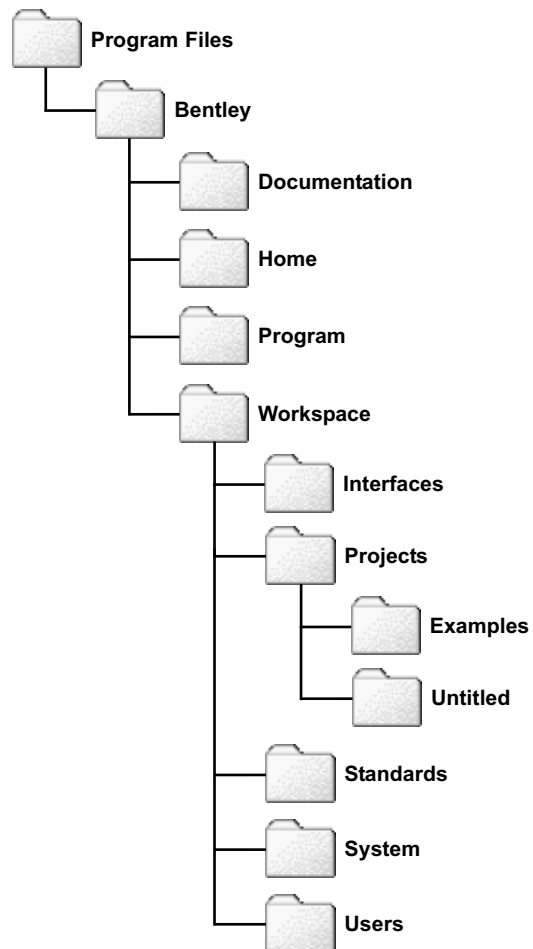
Figure 2
The Project Component



Location of Project Components

The MicroStation directory structure includes a **Workspace** directory under which all workspace customization is stored. Care must be used to ensure that the project configuration file and associated subdirectory structure is placed in the proper location. The diagram below shows a partially expanded MicroStation project component directory tree. Notice the **Projects** directory. New **project configuration files** (.PCF) are placed in this directory. If you create a new project in the MicroStation Manager dialog box, MicroStation builds a project data subdirectory structure that includes **cell**, **data**, **dgn**, **dgn-lib**, **out**, **seed**, and **symp** folders.

Figure 3
The MicroStation V8 Directory Tree



The **Examples** subdirectory in the **Projects** folder is used by an example workspace supplied with MicroStation. The **Untitled** subdirectory can be a part of a sample workspace used to assist in the creation of new workspaces.

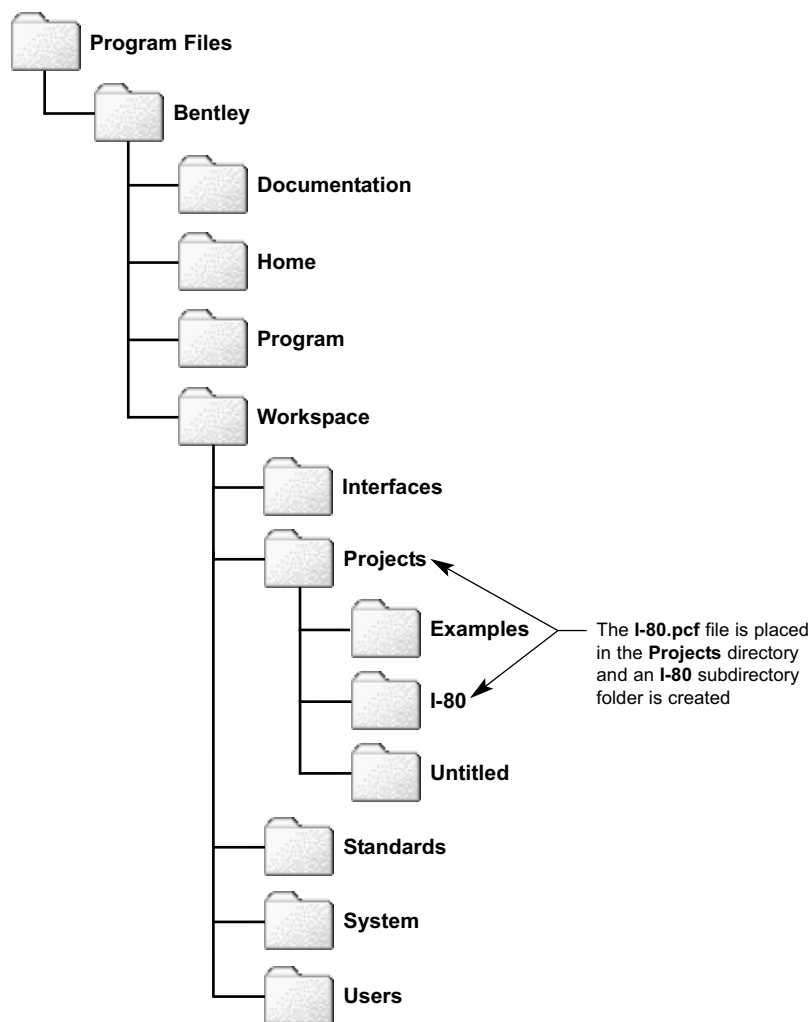
Example

Assume that you create a **project** workspace component called **I-80**. MicroStation would build a **project configuration file** called **I-80.pcf** in the **Projects** directory and would also create a subdirectory called **I-80** under the **Projects** subdirectory, as shown below.

Figure 4
The Directory Tree Structure After a New Project is Created



If you create the project configuration component with the examples user component active, MicroStation places the .PCF file and subdirectory structure for the new component in the **Projects\Examples** folder, which limits access to the project components unless the examples workspace is active. To cause the program to place the new project component in the root projects folder, make sure that the **Untitled** user configuration is selected before creating the new project.



A new project component can be created in the MicroStation Manager dialog box. The steps below outline the process to create the component.



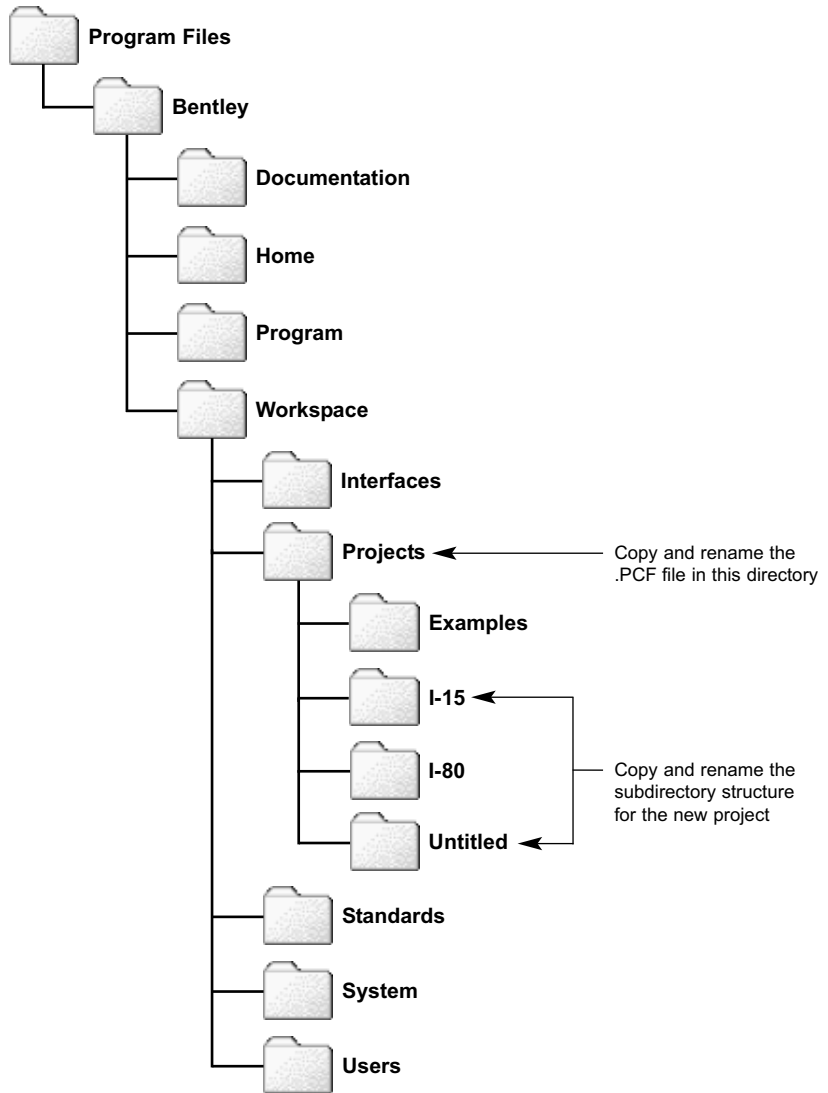
To create a project workspace component:

1. Start MicroStation. Change the **User** option menu in the **Workspace** section of the MicroStation Manager dialog box to **untitled**.
2. Select **New** from the **Project** option menu. Enter the name and description in the Create New Project dialog box, and then click the **OK** button.

Alternative Method for Creating Project Components

The project workspace component consists principally of the project configuration file (.PCF) and project subdirectory structure. If you prefer, you can create a new project component by copying and renaming the **untitled.pcf** file and associated subdirectory structure, as shown below. For example, suppose you want to create a new project called **I-15**. You could copy the **untitled.pcf** in the **\Projects** directory and name the copy **I-15.pcf**, and then copy the **Untitled** folder and rename it **I-15**. At this point, you could open the project configuration file and make any necessary configuration variable modifications.

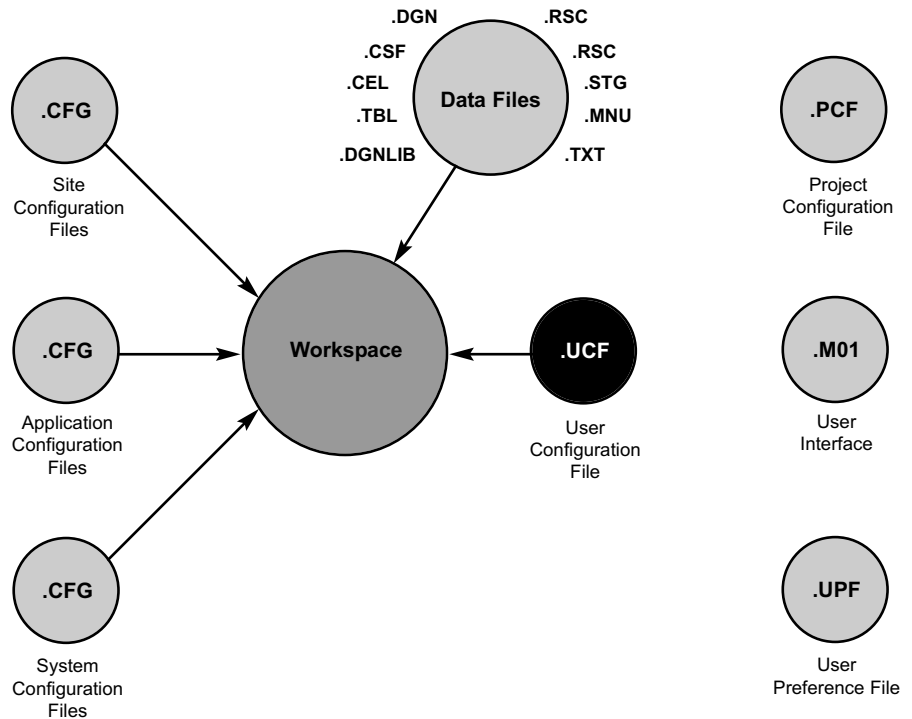
Figure 5
Copying an Existing Project



Creating a New User Component (.UCF)

One of the primary tasks when constructing a new workspace is to build a new user component, which is essentially the unifying component of the workspace. This component is a **user configuration file (.UCF)** that stores user level configuration variables as well as variables that point to a **project configuration component file (.PCF)**, **user preference file (.UPF)** and **user interface (.M01)**. It is an ASCII text file, which means that it can be edited in either a text editor program or the Configuration dialog box.

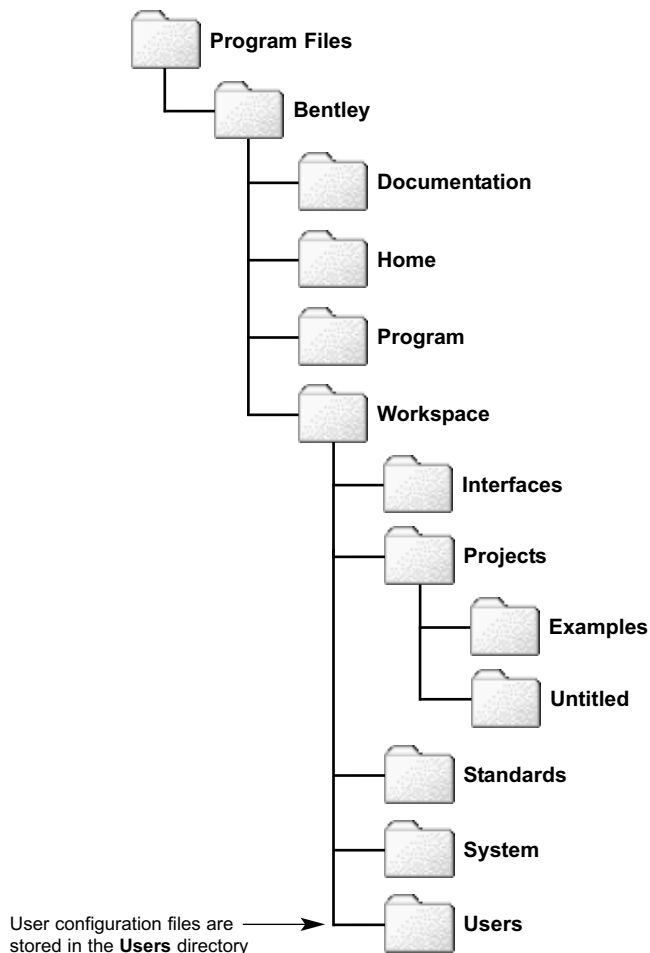
Figure 6
The User Component



Location of User Components

User components are stored in the `\Program Files\Bentley\Workspace\Users` directory. The diagram below shows the MicroStation V8 workspace directory tree and the **Users** directory location.

Figure 7
Location of User Components



A new user component can be created in the MicroStation Manager dialog box. The steps below outline the process to create the component.



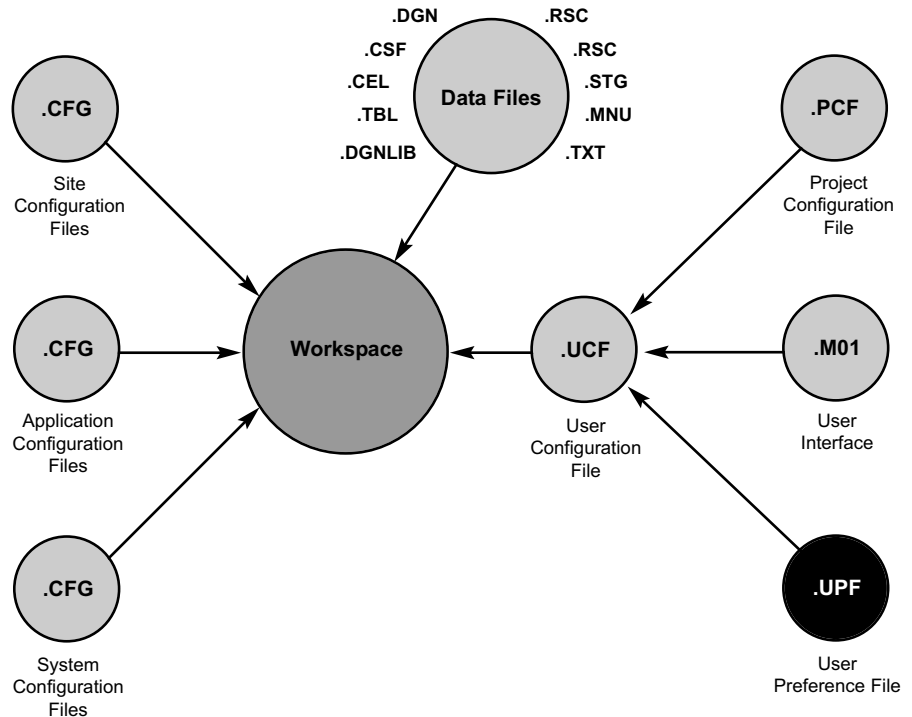
To create a user workspace component:

1. Start MicroStation. Choose **New** from the **User** option menu.
2. Enter the name and description in the Create User Configuration File dialog box, and then click the **OK** button.
3. The dialog box expands when you click the **OK** button to display more fields and options. Enter the description for the workspace.
4. Click the **Project** and **User Interface Select** buttons individually to choose the project configuration file (.PCF) and user interface component.
5. Click the **OK** button to close the dialog box and complete the user configuration component.

Creating a New User Preference Component (.UPF)

The seed file stores many of the important design file-specific settings. The **user preference file** (.UPF), on the other hand, stores many of the universal system settings related to the operation of the program. When a new workspace user configuration file is created, MicroStation automatically creates a user preference file with the same name. The user preference file is a binary file that must be edited through the Preferences dialog box.

Figure 8
The User Preference Configuration



What is Stored in a User Preference File?

A user preference file stores many system settings that impact the operation and appearance of the program. The following is a list of some of the preferences that are stored with this file.

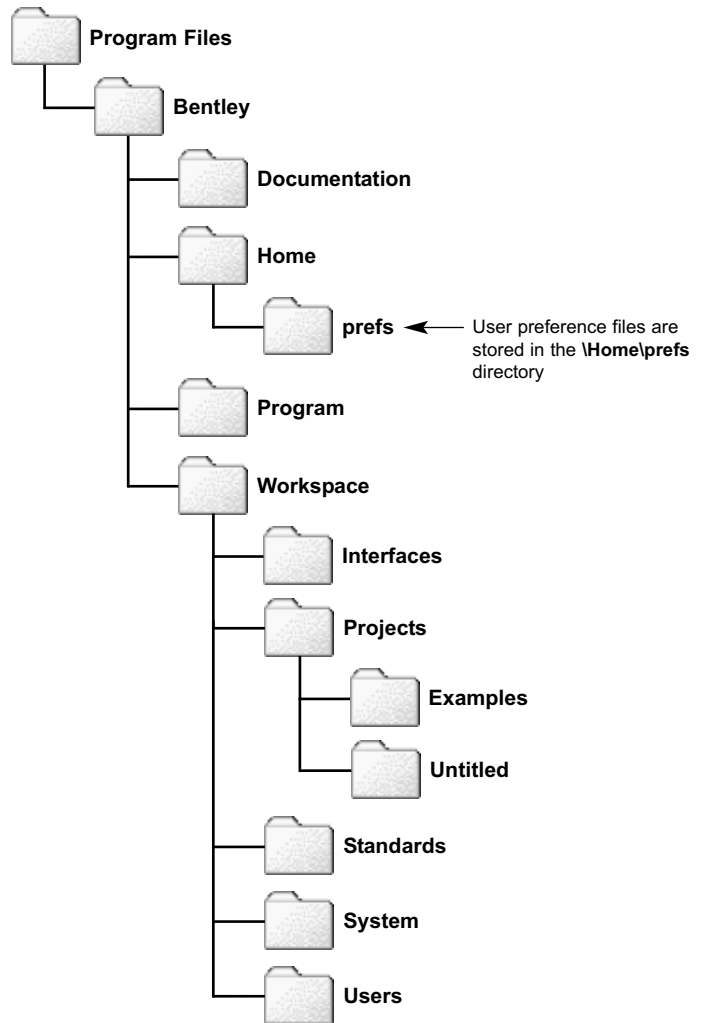
- MicroStation window (size, maximized, location)
- AccuDraw window (open/closed, location)
- File history in the File pull-down menu (last ten files opened)
- Key-in window (open/closed, location)
- Key-in command history
- Mouse button assignments
- Pointer size (normal/full view)
- Prompt (SET PROMPT)
- Settings Manager (open/closed, location)
- Tool boxes (open/closed, location)
- Tool Settings window (location)
- Zoom ratio (in/out)
- Dynamic display (Window commands)

Location of User Preference Components

By default, user preference files (.UPF) are stored in the **Program Files\Bentley\Home\prefs** directory. The diagram below shows the MicroStation V8 workspace directory tree and the **\Home\prefs** directory location.

The root directory for user preference files is set by the **_USTN_HOME** configuration variable, which points to the **\Program Files\Bentley\Home** folder by default. The folder that contains the user preference files is pointed to by the **_USTN_HOMEPREFS** configuration variable. The default definition of this variable points to the **\Program Files\Bentley\Home\prefs** folder shown below.

Figure 9
The Location of User Preference Components



Additional Preference File Issues

There are a few additional issues related to preference files that should be considered by the CAD Manager when implementing a workspace. These issues, along with important preference file configuration variables, are addressed below.

Important Configuration Variables	
MS_USERPREF	Active user preference file.
MS_USERPREFSEED	Seed file used to create new user preference files.



Bentley recommends storing user preference files locally.

Local vs. Network Storage

A preference file is much like a design file in that MicroStation constantly writes to it as changes are made to preference settings, as dialog boxes are opened and closed, etc. This can cause problems with preference file corruption, particularly if a number of users are accessing the same preference file from a server directory.

Previous versions of MicroStation created and stored a user preference file (.UPF) in the same directory as the user configuration file (.UCF). If the user configuration file was moved to a network drive to allow multiple users to access it, a user preference file with the same name was also created on the server. For example, if a user configuration called **arch.ucf** was created on the server, a user preference file called **arch.upf** was also created on the server. This created the undesirable situation of multiple users writing to the same user preference file, which tended to corrupt the user preference file.

MicroStation V7 solved this problem by separating the user preference from the user configuration. By default, user preference files are created on the local workstation in the **\Program Files\Bentley\Home\prefs** folder, even if the user configuration files are on the server. The **_USTN_HOMEPREFS** configuration variable points to this folder. This allows each workstation to have its own user preference files for user configuration files that reside on the server.

The downside to storing the user preference file locally instead of on the network, however, is that the user preference file will not be portable. In other words, if the user logs onto a different computer, the user's preference file will not follow him/her to the new workstation. This can be addressed by incorporating the user's preference file into Windows roaming profiles.

User Preference Seed Files

Because preference files have the potential to become corrupted after repeated use, you may wish to define a user preference seed file that will be used when new user preference files are created. The seed file can contain the key preference settings that you wish the user to inherit when a new preference file is created. The definition of the **MS_USERPREFSEED** configuration variable can be used to specify which user preference file will be used as the seed file.

Migration of User Preference Files

Because preferences change between versions of MicroStation, they are not intended to be migrated from version to version.