Architectural Desktop 2005 - Projects eGuide

PART 2.5

PROJECTS

Contents:

1 Projects - Overview

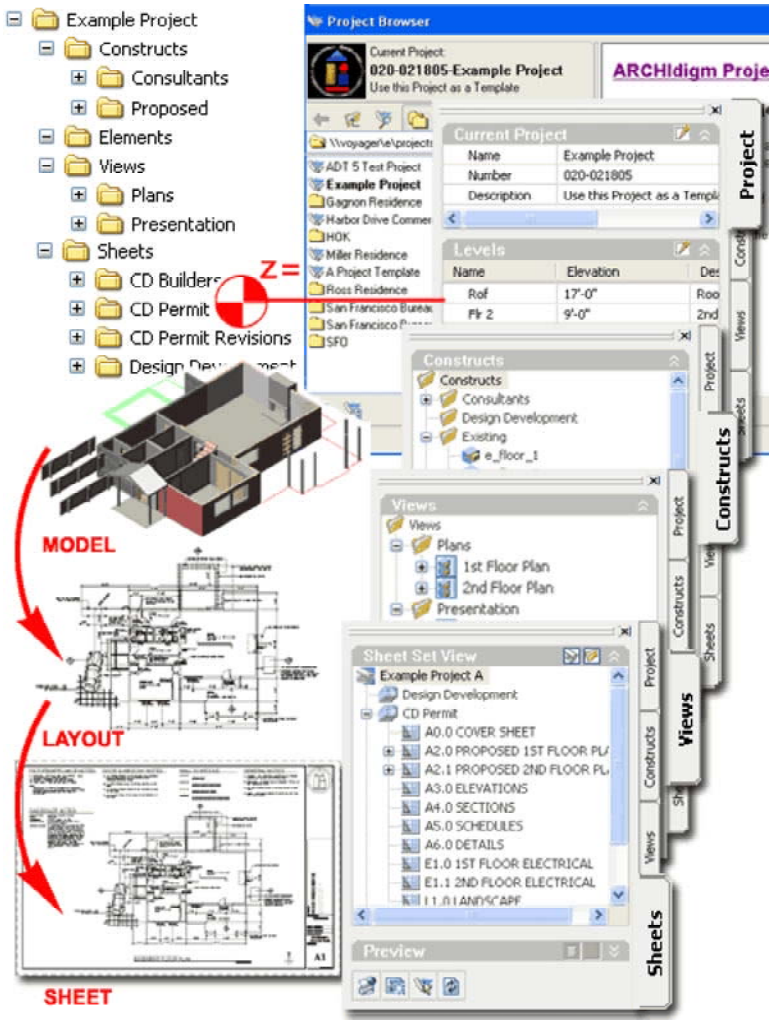
Drawing File Management comes to AutoCAD® and Architectural Desktop

Architectural Desktop 2004 was the first release to offer tools for drawing file relationship management that went well beyond the Xref Manager. For the 2005 release cycle some of these tools were updated and adapted for use in the core **AutoCAD** program. Both AutoCAD and Architectural Desktop users will find these new tools within the **Sheet Set Manager** (SSM) whose primary purpose is to assist users in managing print-ready Layouts. **Architectural Desktop 2005** users, however, should avoid using the Sheet Set Manager and only work with the **Project Navigator** ("AecProjectNavigator") because it includes most of the tools from the Sheet Set Manager (those that apply to ADT project files).

In the sections below I hope to demystify the "**Drawing Management System**" in ADT 2005 by deconstructing the majority of the tools that it employs. At the end of this "journey" you should be able to extract all of the structure, configuration work and settings from an example project to create a "**Project Template**" that will get you going in seconds.

Illustrated to the right I show an overview of how the "Drawing Management System" works to assist you in assembling modeling work into print-ready documents. The System employs two tools that you will need to interact with on a fairly regular basis: the **Project Browser** and the **Project Navigator**. The **Project Browser** Window serves as a specialized Microsoft Explorer with tools for managing **Project folders**; including Opening, Creating, Copying, Archiving and more. The **Project Navigator** serves as a highly sophisticated Drawing File Manager with tools that range from Floor Heights to Sheet Numbers.

The Project Browser provides the basic Folder Structure while the Project Navigator provides the tools for working within it. You use the Project Navigator to define Levels (Floor-to-Floor Heights) and Divisions (non-dimensional categorizations) that are Assigned to Construct (Model) Files (Floors, Slabs, Roofs and so on) which are collected into View Files (one or more Floors, Slabs, Roofs and so on) where they are dressed up with dimensions and annotation for their final resting place on Sheet Files (Print-ready Layouts).



Terminology in Architectural Desktop's "Drawing Management System"

When you look at the **Project Navigator** for the first time I think it safe to say that it is the terminology that evokes the greatest confusion: **Constructs**, **Elements**, **Views**, **Sheets**, **Categories**, **Subsets**, **Levels**, **Divisions** and so on. To help understand these terms I created a list with some basic definitions but you will quickly develop your own sense of purpose and function once you have used these tools for a couple of Projects. One of the most important things to keep in mind is that the "Drawing Management System" is just a set of tools and as with AutoCAD or Architectural Desktop, you can use them as creatively as you see fit. On some Projects, for example, I skip the use of Views and go straight from Constructs to Sheets.

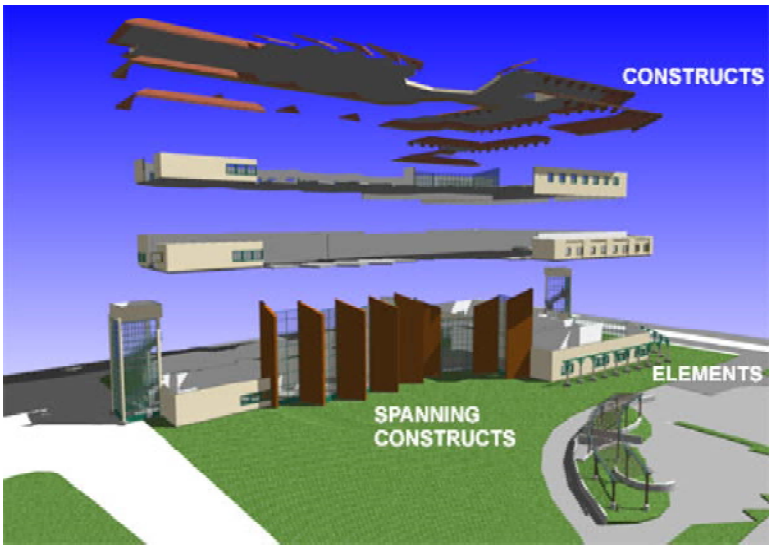
The secret behind the "Drawing Management System" lies in some new files that most Architectural Desktop users have never been exposed to. If you use Explorer to review your Projects while work on them you will soon notice that every drawing file will now have a companion file with the extension of "**.xml**". This file is used to keep track of the individual drawing files but also interacts with the most important new file in this System: the Project Properties (or Data) file with the extension of "**.apj**". The Project Properties file is also written in **XML** code making it very easy to edit without the use of ADT. The last new file you will soon become familiar with is the Sheet Set data file which is used to keep track of the organization and structure you create for your Sheets. This file uses the extension "**.dst**" and cannot be edited outside of ADT. It can, however, be read and modified with the Sheet Set Manager in ADT and AutoCAD.

Levels - an organizational system on the Projects tab of the Project Navigator in which z-axis height values are set and named for use throughout the Project. Typical names might be "Foundation", "First Floor" and so forth.

Divisions - another organizational system on the Projects tab of the Project Navigator that only uses names but expands upon the use of Levels. Typical names might be "Phase 1", "Existing" and so forth.

Constructs - a term used for one of the tabs on the Project Navigator, the name for one of the Folders on this tab and the term used to describe the primary drawing files used to model a building. Typical Construct files might be things like a Foundation Model, First Floor Model, Roof Model and so on. Constructs are Assigned to Levels and Divisions.

Elements - the name of one of the folders under the Constructs tab of the Project Navigator and the term used to describe a variety of secondary drawing files often used as repetitive components in building models; much like Blocks. Typical Element files might be things like an office cubical, trees, cars, office layouts and so on. Elements cannot be Assigned to Levels or Divisions but acquire their Level and/or Division assignment by being Xref'd into Construct files.



Views - a term used for one of the tabs on the Project Navigator, the name for one of the folders on this tab, the term used for the drawing files stored under this folder and the term used for Model Space rectangular boundaries saved with a Name, Scale, Display Configuration and Layer Snapshot. These Named Model Space Views have been categorized as General, Section/Elevation and Detail. Typical View files might be things like an annotated and dimensioned first floor plan, elevations, sections, details and so on.

Sheets - a term used for one of the tabs on the Project Navigator, the name for one of the folders on this tab and the term used to describe drawing files with a single Paper Space Layout configured for Printing. Sheet Files are typically comprised of one or more Named Model Space Views linked back to View files.

Project - a term used to describe the complete folder system for managing all of the Architectural Desktop files in one architectural project. A "Project" consists of one primary folder (with the Project Name) and four secondary folders (Constructs, Elements, Views and Sheets) within which you can create an endless number of tertiary folders. A "Project" also includes two extremely important data based files that monitor and record work done with the Project Navigator: the Project Data (or Properties) ".apj" file and the Project Sheet Set ".dst" file.

File Structure in Drawing Architectural Desktop's "Drawing Management System"

In addition to dealing with the new terminology of the "Drawing Management System", some also find the file structure rather confusing. I say that "some" find it confusing because others have actually been managing their AutoCAD and Architectural Desktop files in identical or at least similar ways to how the Project Navigator does it. I believe that it was the work of those people that served as the model for how Autodesk structured the tools in the Project Navigator.

Because Architectural Desktop is really not a **Single Building Modeler** (SBM) we have to rely on the practices and solutions provided by the core AutoCAD program. This means that architectural buildings are divided up into individual components that are brought together as composite files using the **External Reference Manager**. The floors of a multi-story building, for example, are kept in separate files just as their 2D counterparts were in the days of 2D AutoCAD drafting. These floor files, which are actually 3D Models, are stored as "**Constructs**" in the **Project Navigator** but united as "**View**" files where they can be used for things like **Section** and **Elevation** projections. View files are thus unique

In the material below I discuss the major components of the tools found with the "Drawing Management System": form the Project Browser to each of the tabs on the Project Navigator. In this discussion I refer to a Project that I have named "**Example Project**" which I suggest you create as an opportunity to experiment and learn.

Later in this material I discuss how to use the knowledge gathered from your experiments to configure **Project Defaults** that will make the process of creating new Projects faster and more efficient.

Finally, I wrote up a **step-by-step outline** for how to create a master "Project Template" that you can use to create New Projects from using two different approaches. You may actually want to jump to this outline now and use it as your guide for using the greater body of information provided below.

composite files created with Xref's of Constructs to serve your needs for producing data or linework ready for printing. View files can range in as great a variety as you can image but are typically used for Plans, Sections, Elevations, Details, Schedules and so on. **Named Model Space Views** in View files can be used as instant **Viewports** by dragging them over to print-ready **Sheet files**. Sheet files have been employed by AutoCAD users for many years and were often View files with one or more Layouts set to print. In ADT's Project Navigator, a Sheet file can be as simple as a drawing with one Paper Space Layout configured to print with a Tileblock; the content comes from the View file which is handled as an Xref.

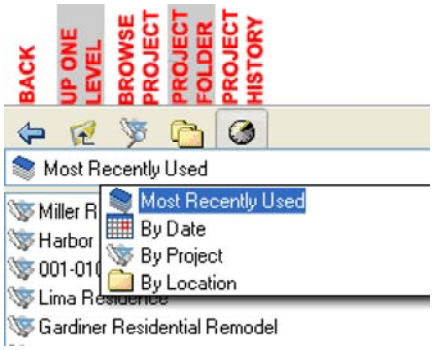
2 Project Browser

Project Browser - Overview Projects

Menu **File > Project Browser...**

On Project Navigator Palette or ARCHIdigm's PowerSTRIP menu

Keyboard **ProjectBrowser**



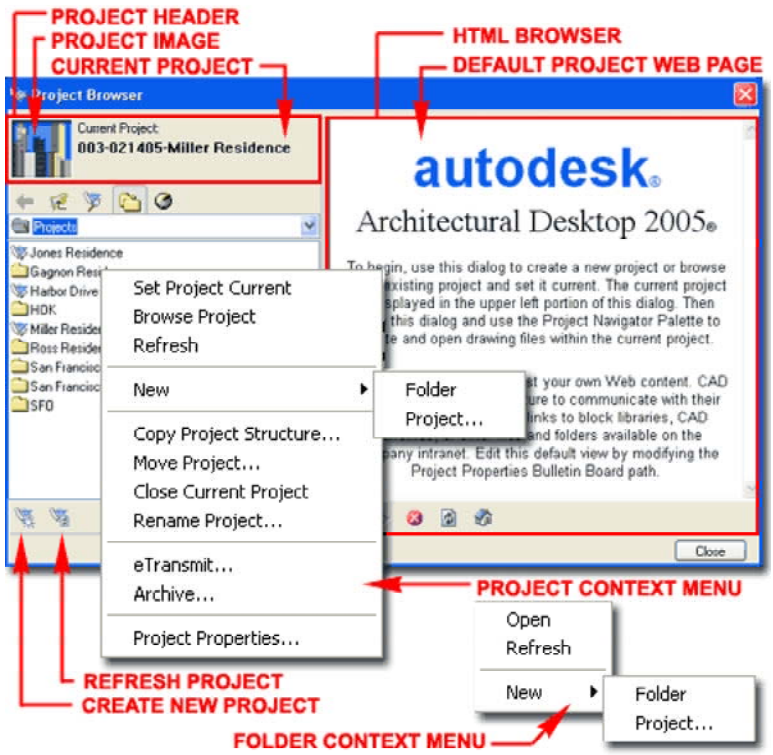
You can activate the **Project Browser Window** in a number of different places such as from the File pull-down menu, by typing "ProjectBrowser" and by using the "Launch Project Browser" button on the Project Navigator. If you really like this tool, you can set it to activate automatically every time you start ADT; see AEC Project Defaults.

The primary purpose for this tool is let users and administrators find, create and manage Project Folders (usually referred to as "Projects"). The "Projects" pane (left) is almost identical to Microsoft's Explorer but you will find that Explorer does not display the same icons nor does it provide these unique tools.

Projects are pretty much self-contained structures that can be "**Set Current**" or created at any location on your local machine or network. Projects can reside as high or as deep within an existing folder (or mapped drive) structure. You can "**Move**" and "**Rename**" them but only with the tools available on the Project Browser (actually you can pull it off with Explorer but it can get quite messy that way and is just not a good idea). The Project Browser is only a tool for accessing, working with and creating the primary project folder; it is not for working within this folder structure where another tool called the Project Navigator takes over. Projects consist of four sub-folders and two data based files. The behavior and structure of a Project as it is read in the Project Navigator is derived from a number of default settings that you will find on the AEC Project Defaults tab of the **Options dialog**. These settings can also be acquired by using the "Copy Project Structure..." context menu option illustrated to the right.

Set Project Current - use this option to inform the **Project Navigator** which Project will be active. Only one Project may be active, or current, at any given time so you will not be able to use the Project Navigator to "cross-pollinate" between different Projects. Running two concurrent ADT Windows does not offer anything to circumvent this limitation. To make a Project Current, you can also simply **double-pick** on a Project icon and this is typically displayed by a **bold font**.

Browse Project - use this option to activate the standard "Open File" dialog set to look for .apj Project file types within the current directory. This is similar to using Explorer but with the graphic assistance for locating .apj files. You can also use the Project Folder button on the Project Browser Navigation Bar and the drop-down list to search anywhere



Refresh Project - use this button whenever changes have been made that don't appear to show up correctly. Usually this is necessary in networked environments where other users may be doing work while you are using the Project Browser. You may also need to Refresh when using Explorer at the same time you are working with the Project Browser.

File Navigator - use this button to access a dialog that is very similar to the Open File dialog. You may want to use this option when you know exactly what file you want but you don't want to go through the project folder to get to it. At times, for example, you may want to open a file that is not from the Current Project. **Note:** you can use the regular Open command and dialog for the same purpose.

Copy Project Structure... - use this option to make a duplicate of a Project Folder Structure but be aware that this only copies the Folders and not the contents. This option allows you to think of any Project as a Template Project. See **Copy, Move and Rename Project** for more information and examples about this subject.

Move Project... - use this option to achieve results similar to Cutting and Pasting a Project Folder with Windows Explorer. The primary difference in using this command to Move a Project is that it also Moves Paths for Xref's (Re-path). Should you or another user accidentally move a Project Folder with Explorer, the Project Browser will reveal that the Paths need to be fixed and there is a Re-path tool in the Project Navigator as well. See **Copy, Move and Rename Project** for more information and examples about this subject.

on your local and network drives.

Refresh - use this option much as you would the Refresh option in Explorer; to see any changes to folders or Projects that may have been created or modified by others in a networked environment.

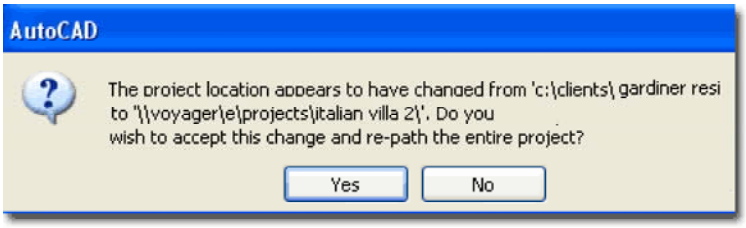
New > Folder - use this option to create a Folder rather than a Project. A Folder is identical to the Folder you create with Explorer. You would use this option when you need to create a Project as a sub-folder of a more primary job folder.

New > Add Project - use this button to create a new project folder name with all of the information that gets associated with it - see illustration to the right. On the **Add Project dialog** you can include a project **Number**, the folder **Name**, a **Description** and numerous template file sources for the various components of the project system. In addition to that information, you can use the Project Details button in the upper right to add contact information and a multitude of other items that may you may want to extract later on using Fields. This information will be stored in the main .apj Project data file.

Illustrated to the right I show an example of a mixed project environment where some projects might have been done on past releases of ADT or even AutoCAD while new ones are being introduced with the Project Browser. Since "**Projects**" are simply comprised of unique folder names, two data based files and one .xml file for each .dwg file, you will not risk corruption or damage to existing project folders or files by Adding new Projects within existing project folder systems.

Where you Add Projects is a matter for you to decide upon but I have found that for best success, you will need to think of a Project as the full container of all ADT Project Files; from As-builts, to Schematic Design, Design Development all of the way through to Construction Sets and Change Orders. For some offices this just won't be feasible so you may want to experiment with Projects as containers of these categories; i.e., As-builts, Schematic Versions (one for each version) and so on. The problem with expanding on their fairly narrow Project structure is that it will make the task of using this tool more strenuous for the users because they cannot work in multiple Projects at the same time. For example, as a designer, I will throw numerous conceptual mass studies together for my clients and in order to save time, I often mix work from different phases or versions. If I keep all of my design work under one Project this is easy but if I break each design version into separate Projects this becomes a tedious process where I may end up having to manage a lot of redundant data (such as floor level height changes).

Once again we are all presented with a brand new tool that has not gone through years of careful scrutiny by many architecture firms so however you attempt to employ it will probably be the first of its kind.



Close Current Project - use this option to Close the Project Navigator and to be able to Close the Project Browser without activating the Project Navigator.

Rename Project... - use this option to change the name of any existing Projects, Projects Copied within the Project Browser and Projects copied with Explorer. When you copy a Project with Windows Explorer, even if you change the folder name, the Project Browser will see the Project Name as the same as the original so you must use the Rename Project to remedy this error. You will want to use this technique when wanting to copy a Project and All of the Files within it. See **Copy, Move and Rename Project** for more information and examples about this subject.

Project Properties... - use this option to get back to all of the data set up on the Add Project dialog box.

Add Folder - use this option to add a simple folder just as you would with Explorer (not part of a Project)

Project... - use this option to create a true Project folder with all of the default sub-folders that the Project Navigator uses.

Delete - yep, you won't find this option anywhere in the Project Browser so if you need to get rid of something you will have to do it with Explorer and then Refresh the Project Browser to confirm the Deletion.

Project Browser - Add Project - Project Properties dialog

Links [AEC Project Defaults](#) - for more elaborate information on the default settings found on this dialog.

When you **Add** a new **Project** using the Project Browser, the **Add Project Window** will appear with numerous Properties. Most of these Properties will already have been set to Values specified as "defaults" and you can find most of these default settings under the **AEC Project Defaults tab** of the **Options dialog**. You must fill in the Name Value field in order to create a Project. To Modify any of these properties after you have Added your Project, simply use the **Properties...** context menu option on the Project Browser to return to this Window. All of the information (data) set on this dialog box will be stored in a Project-specific file with the extension .apj that will be discussed in greater detail under Section 8.

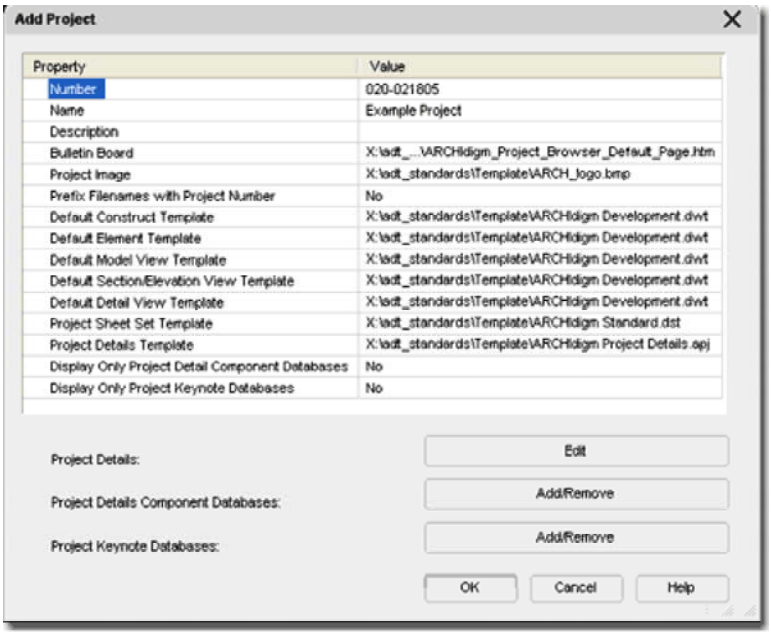
Number - use this **Value** field to specify a **Project Number** using alphanumeric characters. You may use dashes, underscores and dots but you cannot use slash marks ("\" or "/") because such values may be incorporated as a Prefix in filenames. I thought it would be rather nice to have some programmable options for this Value to help automate number sequences relative to previous project numbers, dates and so forth but so far no such option exists. This Value is displayed in the Project Header of the Project Browser and under the Current Project section of the Project Navigator.

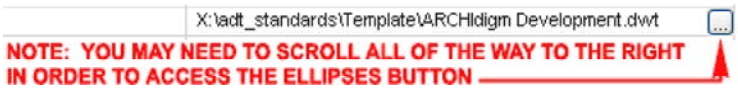
Name - use this **Value** field to specify a **Project Name** using alphanumeric characters. If you want the Project Number labeled as part of the Project Name on the Project Folder, as viewed with Explorer, you will need to type your number here as you want the Name to appear on the Folder. This Value is displayed in the Project Header of the Project Browser and under the Current Project section of the Project Navigator.

Description - This **Value** is displayed in the Project Header of the Project Browser and under the Current Project section of the Project Navigator.

Bulletin Board - the default location and filename set here is typically derived from the same setting on the AEC Defaults tab of the Options dialog. The bulletin board is simply the first page in the Internet Explorer-like pane of the Project Browser and must be in .htm or .html format. Even if this feature means nothing to you, you should take the opportunity to remove the default one by Autodesk and at least put a cool image there (for inspiration). See Default Project Bulletin Board and Project Image for more on this subject.

Project Image - the default location and filename set here is typically derived from the same setting on the "AEC Project Defaults" tab of the Options dialog. This silly little option had to be some creation by a programmer bored stiff. This feature offers the option to place a custom .bmp file in the little 64x64 pixel space of the Project Browser. See Default Project Bulletin Board and Project Image for more on this subject.





Prefix Filenames with Project Number - [**Yes/No**] - Set this value to "Yes" if you want the value you have specified for the Number to be a prefix (in front of) all your drawing file names. In some firms this is a required practice allowing files to use the exact same naming convention while remaining unique due to the prefix. In my office, for example, I name all of my drawings in the same way: "e_flr_1.dwg", or "p_flr_3.dwg". Using the Project Number as a Prefix would eliminate the possibility of accidentally overriding a file from one project with the file of another. Since my office is quite small I don't use Project Numbers and thus don't use this option.

Default ... Templates - under the templates you will find two primary types: those for drawing work and those for data. In some cases you may wish to set these Values when creating your Project but in most cases you should find that using the **Project Defaults** or the "Copy Project Structure..." context menu option will suffice. See AEC Project Defaults for information on this subject.

Display Only Project Detail Component Databases - [**Yes/No**] - use the "Yes" option for this Value when also using custom MDB files for your Detailer. This will ensure that user will not inadvertently use another database for the task of drawing detail components. I know of now firm to this date that has gone this far with ADT so if you have no ideas what I am referring to, just leave the value as the default "No". See Project Details Component Databases for more information.

Display Only Project Keynote Databases - [**Yes/No**] - use this Value to achieve the same thing as discussed above but for Keynoting . See Project Keynote Databases for more information.

Project Details

Links [Default Project Templates - Data Based](#) - for information on how and where to set these defaults

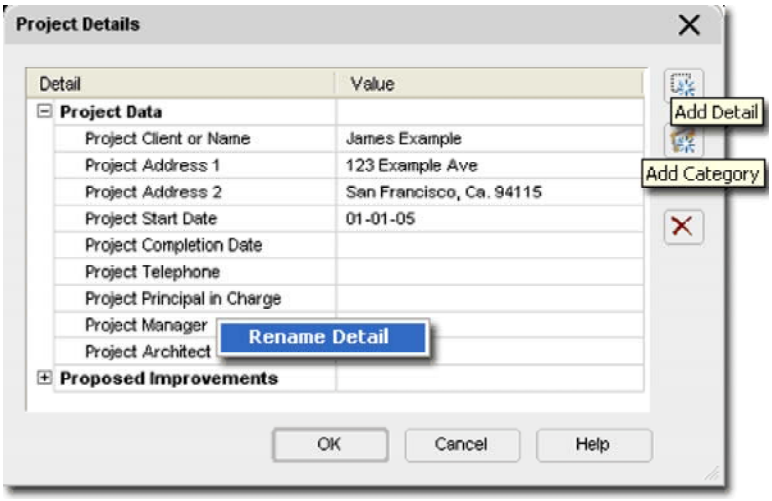
Project Details is a term used to describe a subset of the primary Project data file (.apj) which I like to think of as the "Project Properties" file because it stores the Project Details and the other Properties discussed under Add Project (above). When you Add or Modify the Properties of a Project you will find that there is a special section for Editing "Project Details" which activates the dialog box illustrated to the right. All of the **Detail** and **Value** columns on this dialog are completely customizable. As you can imagine, it can take some time to create a full list of of value fields that you may want to track on a Project so it is highly desirable to be able to "recycle" some of this work.

If you look at the main Project Properties dialog, see illustration above right, you will find a Property for "**Project Details Template**". Once a Project has been created, this Value will be gray and cannot be changed; this also means that you cannot import Project Details once a Project has been created. The default Value for this Property is set on the **AEC Project Defaults tab** of the **Options dialog.** Outside of using this default template setting, you can use the "Copy Project Structure..." context menu option to copy the Project Details from an existing job or you can take a more drastic approach and use an XML editor or even Notepad to modify existing .apj files.

Any of the information entered into this file can be extracted by using Fields in ADT as illustrated below. As the XML language grows in popularity you will find that other software programs will also be able to extract data from it. You can actually use Excel to open and read the Project data file and locate the Project Details but it might be better to use an actual XML editor.

Add Detail - this button allows you to add a field to the current category where you must name the "Detail" but leave the Value field to be filled in at another time. If you expect to extract this new Detail in your Project drawings, such as in the Sheet Files, be sure to use a Name that is easily recognizable. Notice that I had to use "Project Address 1" and "Project Address 2" as a means to match how I present this information on my Titleblocks - see below.

Add Category - this button allows you to create a whole new category or group within which you can add your own Details.



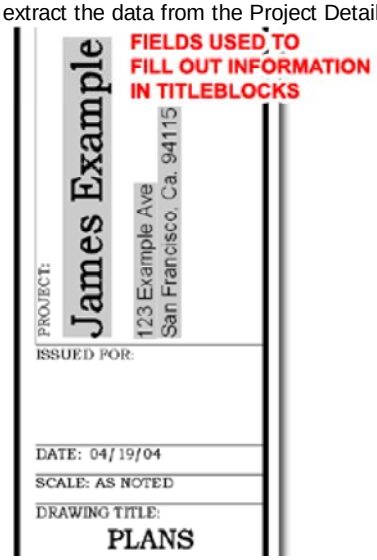
Rename Detail - use this right-click context menu option or double-pick on a Detail Name under the Detail Column much like you would with Explorer. **Do not attempt to Rename Details** once the Value has already been "threaded" to Fields in one or more drawings or you will end up with the notorious "####" value. If you must Rename a Detail that has already been threaded then you will need to reset the Fields everywhere that they were set to point to this Detail Name.

Note:
If you are like me and you have some expectations about the order in which things should go, you may find Adding Details and Categories rather frustrating because there are no tools for moving the Fields or the Categories. When you Add Details, they will automatically pop up under the Detail you currently have highlighted but if you accidentally place it out of order, you will need to Delete it. New Categories always end up at the bottom of the stack even if you use the letter "A". If this is totally unacceptable to you, get an XML editor.

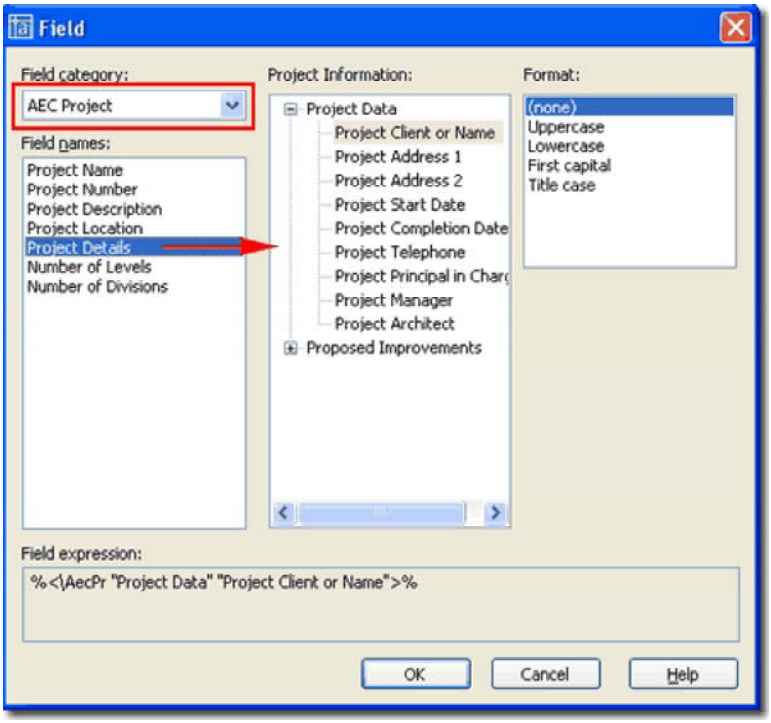
Project Details - Captured in a Field

Menu	**Insert > Field**
Keyboard	Field
Mouse	Inside the Text or Mtext dialog, right-click and Select Insert Field...
Links	Sheet Creation Template file **-** for more examples on using Fields to mine for data in Property files.

In the discussion above I commented on how **Fields** can be used to extract the data from the Project Details subset of the main Project Properties (.apj) file. Illustrated below and to the right I show one example of how you can use a Field to capture simple Project data like the Project/Client Name and Address for use in a Titleblock.



Depending on how you prefer to configure your Titeblocks, you would either embed the Field in one or more Attributes or within simple Text (like Mtext). Using the "**Insert Field...**" option found on the Attribute Definition dialog, when right-clicking during Dtext and on the Context menu during Mtext, you should find that you can activate the Field dialog illustrated to the right.



Note:
The reason I don't use the "Project Name" option under the Field names pane, shown above, is that we often use Project Names that are not appropriate for use on the Titleblock; i.e., it is more of an internal code for the actual Folder in

On the **Field dialog**, use the **Field category drop-down list** and set it to "**AEC Project**" which will allow you to **Select** "**Project Details**". Project Details should produce a list under the **Project Information pane** that is identical the one found on the Project Details dialog (see above) and all you have to do is Select the data field for you drawing Field.

which the entire job is kept.

FieldDisplay - type this variable to turn the gray On or OFF (0) under Fields.
UpdateField - type this command to Select one or more Fields for immediate updating.

Project Details Component Databases

This option is for custom databases - more to come at a later date

Project Keynote Databases

This option is for custom databases - more to come at a later date

Copy, Move and Rename Project

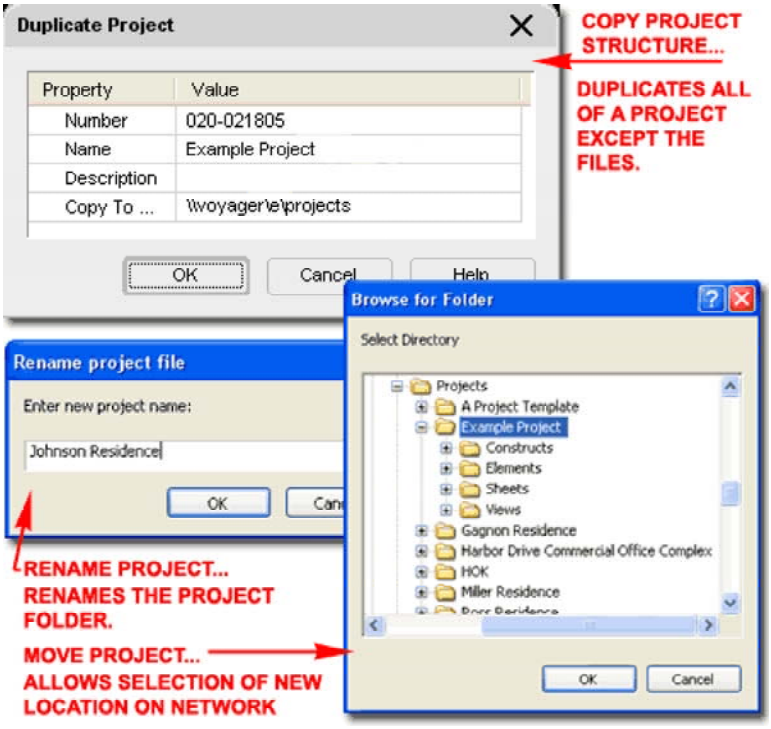
Links Projects and Templates - Overview **-** for information about using the Copy Project Structure and creating a Project Template.

Illustrated to the right I show the three basic Project Editing Tools; **Copy , Move and Rename.** As stated earlier, you must use the tools within the Project Browser to create and modify Projects because this is the only way you will create and modify the associated data files. In other words, if you Copy and Rename a Project Folder with Explorer the Project Browser will not be able to distinguish this new Folder from the original.

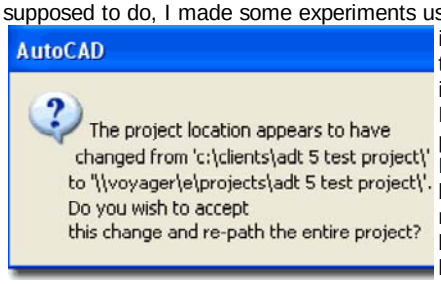
Copy Project Structure... - this option provides a means to create a New Project by duplicating an existing Project's Properties file (.apj) and all of its folders but not any of the drawing related files within it. This means that you will inherit all of the settings stored on the Project Properties dialog such as Template Files, Bulleting Board, Project Image and most importantly, Project Details. You will also inherit settings for Levels and Divisions but unfortunately you will not inherit any of the Sheet Set settings except for any custom folder you may have created as Categories. The Sheet Set (.dst) information will be created from the "Project Sheet Set Template" Property found on the Project Properties dialog. If you take the time to create a "Project Template" this is probably the best way to create New Projects. See Project Defaults, Templates and Configurations for more information on this subject.

Rename Project... - this option allows you to physically Rename the Project Folder as seen by Explorer but unlike Explorer this tool also updates all of the data files. Do not confuse Renaming a Project Folder with Renaming a Project's Name. The Project Name is stored as a Property of the Project but is not connected to the Folder Name and thus if you rename the one you will need to manually rename the other; i.e., the Project Folder could read as the "Jones Residence" while the Project Name reads as the "William Residence" - that's not good.

Move Project... - this option allows you to physically Move a Project Folder and all of its contents to a new location anywhere on your local machine or network environment. As explained under the "Rename Project" option, this action does more than move files and folders so be sure to use this instead of Explorer.



Note:
Because I just have to see what happens when you do things you are not supposed to do, I made some experiments using Explorer to modify Projects instead of using the tools inside the Project Browser. I found that if you use Explorer to Rename a Project Folder it will still function properly within the Project Browser and Project Navigator but the Name change will not be reflected in either of these tools because the core .apj Project File has not been changed.



I also Moved an entire Project Folder from one machine to another and received the message illustrated above left. When I allowed the Project Browser to re-path the whole Project I found that all Constructs, Elements, Views, Sheets and even some of my custom relative path items adjusted perfectly.

eTransmit

Menu	**Do not use eTransmit from File pull-down**
Keyboard	N.A.
Mouse	right-click in **Project Browser** and Select eTransmit... or right-click in numerous places under the Project Navigator to create a special selection set.
Links	

AutoCAD users should be familiar with the the electronic transmittal tool particularly because of how useful it has been in collecting vital Xref files. In ADT, with all of the structure behind the "Drawing Management System", the need for a tool that maintains vital file associations is even greater than it ever has been.

This is a big topic in itself and I will come back to it later on...

Archive Sheet Set

Menu	**N.A.**
Keyboard	The "Archive" command is for AutoCAD Sheet Sets only.
Mouse	right-click in **Project Browser** and Select Archive...
Links	

The **Archive** tool is basically the same thing as the eTransmit but without the option to transmit the final package. This option only works on Sheet Sets.

More will be added as part of the expansion on the eTransmit topic...

3 Project Navigator

Project Navigator Palette - Project Tab Overview

Menu **Window > Project Navigator Palette**

Keyboard **AecProjectNavigator** or **[Ctrl+5]**

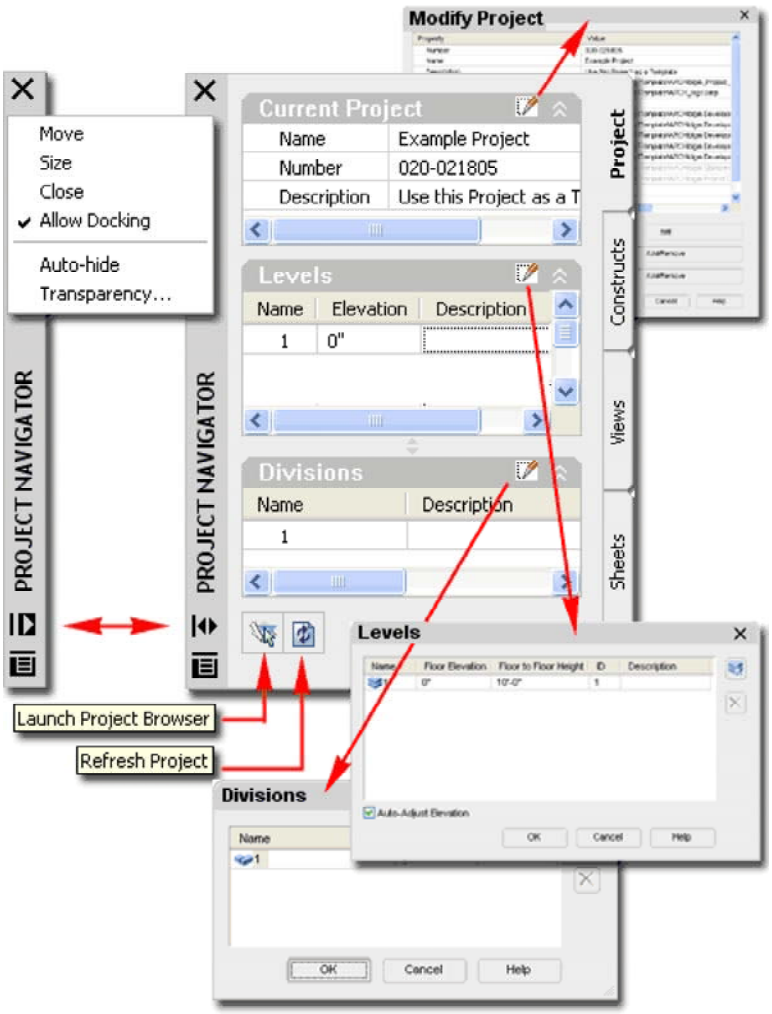
Though you can **activate** the **Project Navigator Palette** without using the Project Browser, there is no way to change or set the current Project without using the Project Browser. If you prefer to avoid starting ADT with the Project Browser Window, notice that the Project Navigator Palette comes with a button to "**Launch Project Browser**".

Upon first inspection, most users find the Project Navigator a bit daunting to comprehend but in reality it is far less complicated than all of the panes and tabs suggest. If I were to attempt to describe this tool in the simplest terms possible I would call it an advanced **External Reference** (Xref) **Manager**.

Because Architectural Desktop is really not a **Single Building Modeler** (SBM) but rather a **Composite Building Modeler** the Project Navigator has been designed to manage numerous independent drawing files that can be assembled as required to create composites of building data. Taking a queue from the world of databases, this is similar to making queries where we point to the drawing files we want assembled as one file in order to produce something as simple as a Reflected Ceiling Plan or something more data-driven such as Door and Window Schedules.

Illustrated to the right I show an overview of the first or top tab of the Project Navigator, the **Project tab**, and some of the controls you can use to maximize/minimize this tool. You will need to find a spot for this Palette as it will become so important to you that it will inevitably remain on your screen at all times (okay, I keep closing it to get more space but then I end up activating seconds later).

Current Project - this pane points back to the main Project Properties dialog to report on the Project Name, Project Number and Project Description. I have not found any way to change or expand what this pane displays so I don't think it is possible at this time. Notice the double up "^" arrows on the header for this pane; you can use this icon to minimize the pane. Using the rectangle with a pencil icon you can activate the "**Modify Project**" **dialog** also accessed through the Project Properties on the Project Browser Window.



Refresh Project - you will find the Refresh Project button on every tab in the Project Navigator and that alone should allude to how important this button is. There are several reasons why refreshing is necessary and you should work on making it a habit to pick this button whenever you make changes anywhere in the Project Navigator. I have made some rather embarrassing mistakes based on ghost images of files in the Project Navigator because I did not refresh and these mistakes have typically corrupted one or more of the data files this tool

Levels - this pane points to the **Levels dialog** where you can **Add**, **Delete** or otherwise manage the various **Floor-to-Floor Heights** of your Project. I will elaborate on this subject below but once again this sounds more complex than it really is. If you understand Block or **Xref Insertion Base Points** then all you have to do is think of this as a way of dynamically managing the Z-axis component of the Insertion Base Point. That is, your files will still relate to each other by the X and Y positions but now you can control the Z position for one or more files and that is necessary because these are now 3D Model Files. This also means that in the case of multiple floors, for example, you draw each floor as if the base of your Walls are on the first floor; at Z=0.

Divisions - this pane points to the **Divisions dialog** where you can **Add**, **Delete** and Rename "horizontal" divisions. The ADT help files refer to this as "horizontal" but in reality "Divisions" are just non-dimensional groups. They don't have anything to do with the Cartesian coordinate system but they provide an option for "dividing" your files into groups that are matched with Levels. How you employ this organizational feature is really up to you. See discussion below for more information on this subject.

manages.

If you work in a networked environment where several users are actively participating in the current Project, refreshing should be a "no-brainer" much like Reloading Xref's when you know someone else is tinkering with the work you depend on. Periodically you may notice that picking this button triggers an alert about **re-pathing** files and this is due to movement in the overall file-linking structure within the Project Navigator. Typically, you should accept re-pathing unless you know that this shouldn't be necessary; then, see it as a warning that you or someone else has done something stupid (like Moving the whole Project).

Project Navigator - Project Tab - Levels

Links Constructs Tab - Add Construct - Assign Level and Division **-** for information and examples on how to Assign Levels to Constructs.

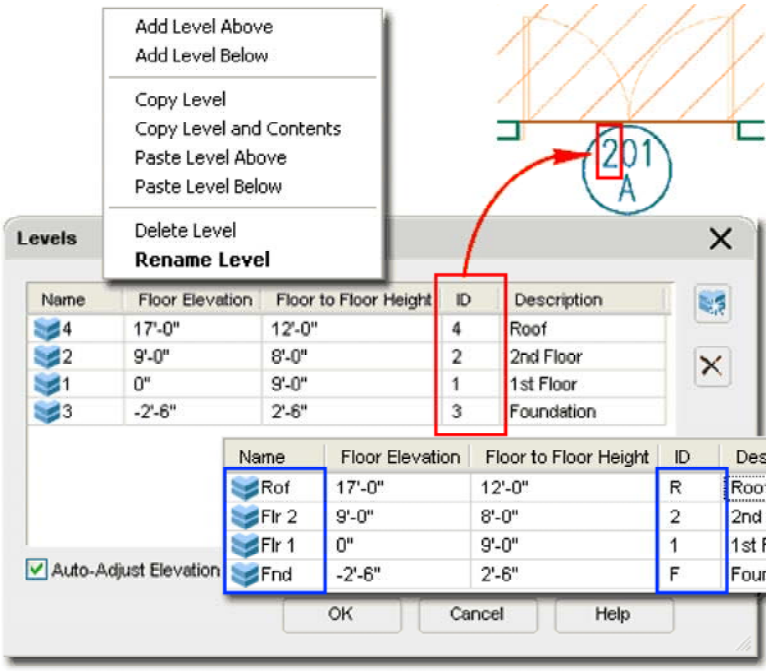
In Architectural Desktop **Levels** are primarily used for Z-axis Xref Insertion Points. In other words, the value you specify for each "Floor Elevation" determines the insertion height along the World Z-axis for associated Object(s). In addition, Levels can be used to feed Tags, Schedules and one Field with information derived from the Levels dialog.

Name - this field is displayed on the Project tab of the Project Navigator Palette and is just a tool to help you track what your Levels represent. By default, you will find that the Names are numbered to match the ID values but you can Rename the Level Names as you see fit. Illustrated to the right I show that I changed the numbers to abbreviations for actual "Levels": "Rof", "Flr 2", "Flr 1" and "Fnd". I find that keeping the Name field short is easier to read on the Project Navigator and if you want a more "descriptive" statement, you can use the Description field.

Floor Elevation - this value field is arguably the most important setting on this whole dialog because this value affects nearly every drawing file you create within the current Project. As stated above, this value represents the Z-axis insertion point for files that have been directly associated with it (the real term is "Assigned"). On the Constructs tab of the Project Navigator you will find a folder for drawing files called "Constructs"; these drawing files are the only drawing files that can be associated or assigned to Levels and thus they are the only files that have a dynamic insertion base point. This means that you can actually return to the Levels dialog during any point in your Project's evolution and change the Floor Elevation values for a ripple effect that could be quite extensive (so don't do it by mistake). There are no rules to how you configure the Floor Levels for your buildings and if you want to relate everything to grade = zero (0), you can. In the illustration to the right I show that the finished Floor Elevation value for my 1st Floor has been set to zero (0") simply because that's how I think. Keep in mind that the information you specify here is mostly so the Project Navigator can insert Constructs at the proper Z-axis heights relative to each other. If you drag a 1st Floor into a current 2nd Floor, the 1st Floor will actually be set to a negative Z-axis height in order to compensate for the fact that the 2nd Floor is actually drawn at Z=0 in its own file; i.e., typically all floors are drawn at Z=0.

Floor to Floor Height - this field is used by the "Auto-Adjust Elevation" calculator to set the next Floor Elevation value. If you deactivate the "Auto-Adjust Elevation" tool, this value really does nothing to your project. At present there are no tools in ADT that read or use the Floor to Floor Height value. To work with Floor Heights you will need to look into the Display Configuration tools. See Display Configuration - Cut Plane in **Part 1 - Display**

ID - this field is where the real "Name" of the Level is stored so you will



Add Level Above and **Add Level Below** - these two context menu options work as substitute tools for the inability to drag-n-drop Levels to other positions. In the illustration above, for example, the only way to Add a Foundation Level later in a Project is to use the "Add Level Below" which allows you to specify a **negative Floor Elevation height**.

Copy Level and **Copy Level and Contents -** the "Copy Level" context menu option duplicates all but one of the settings for a Level, nothing more, while the "Copy Level and Contents" option duplicates settings and all of the Constructs Assigned to the Level. Constructs replicated in this fashion will automatically be named with a "(2)" suffix and will be exact copies including linked Elements, notes, etc. When you Paste (see below), notice how this action automatically changes the Name but not the ID - watch out for that. See also "Copy Construct to Levels" on the Constructs tab.

Paste Level Above and **Paste Level Below -** these options are only available after you have use the Copy Level or Copy Level and Contents options. These work just as the Add Level Above and Add Level Below options. When Pasting, pay attention to how the Name is automatically set to a number and that the ID value is not changed at all. If you are using the Copy Level and Contents option to create multiple floors, be sure to change the ID values to correspond with the floor level.

Delete Level - this option does not warn you about the potential to "orphan" Constructs so be aware that though you can Delete a Level, some Constructs

want to use caution when you work with these values. "Project Based" Tags and Schedules will read the ID value to incorporate the actual Floor Level in the numbering of things like Doors, Windows, Spaces and so forth - see example in the upper right corner.

Description - this field appears to be a convenience item and I have not found any place where it affects tags, schedules or other items. On my personal Projects I tend to leave this field blank.

Auto-Adjust Elevation - use this checkbox option to activate an internal calculator that automatically sets the Floor Level values to match any specified Floor to Floor Height. In other words, if you set the Floor to Floor Height of the 1st Floor to 10'-0" (3048mm), for example, the 2nd Floor will automatically be set to match (10'-0" or 3048mm) but the calculator will continue to ripple up or down the entire list as required. I recommend you use it until you find a reason to do something unique.

may be Assigned to it. Orphaned Constructs will simply reside under the Constructs folder with no Level Assignment.

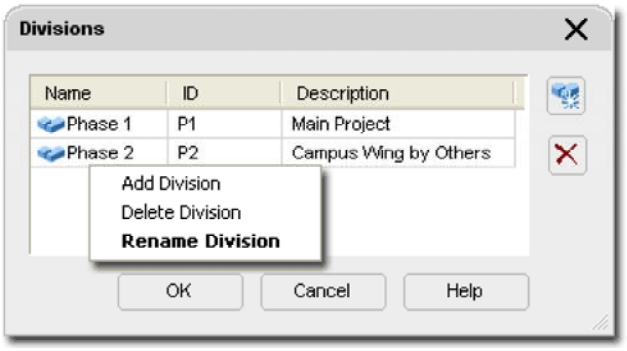
Rename Level - you can also rename by double-picking in the Name field for any Level. Two Levels cannot have the same Name. Other than that I have found no particular limits or special use for this value.

Project Navigator - Project Tab - Divisions

Links: Constructs Tab - Add Construct - Assign Level and Division - for information and examples on how to Assign Divisions to Constructs.

In Architectural Desktop **Divisions** offer a way to augment Floor Level categorization by a simple naming convention. You can exercise as much creativity about Division Names as you see fit; ranging from terms like "Phase 1" to "Existing" and "Bldg A". The Help files in ADT lead you to believe that Divisions are "horizontal" in nature and you may wish to think of them as such but as yet they support no dimensional constraints - I compare this to thinking of Layers as Physical while the reality is that they are simply Properties (Names).

Name - this field is displayed on the Project tab of the Project Navigator Palette and is just a tool to help you track what your Divisions represent.



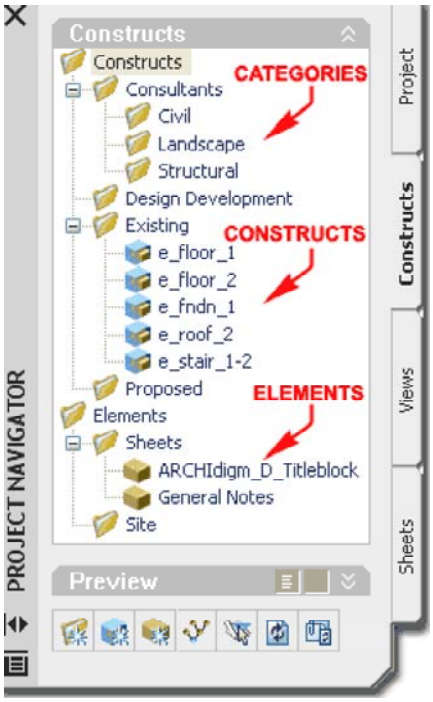
ID - can be extracted by Property Set Data for Schedules, etc.

Description - as with Levels this is a convenience option but may be rather useful if you are experimenting with odd Division Names or concepts.

Project Navigator - Constructs Tab - Overview

On the **Constructs Tab** of the **Project Navigator** you will find two **Folders** that cannot be Renamed or Deleted. These folders, "**Constructs**" and "**Elements**", reflect actual folders as viewed with Explorer. They are also the first two of four default sub-folders within the current Project Folder. Some Users and CAD Managers are quick to complain about this structure and naming convention but it is just something we all will need to adjust to; there is room for some customization as will be discussed below.

In the illustration to the right I show that the Context menu is obviously the best tool for working with the folders and any drawing files within them. As you can see from the Context menu for the **Constructs folder**, you have the option to create a new **Category** (Sub-Folder) or a new "Construct". You will find similar options for the Elements Folder. In both cases, Categories are simply sub-folders that you can use to separate "Constructs" or "Elements". The naming convention you wish to employ for these sub-folders is entirely up to you.

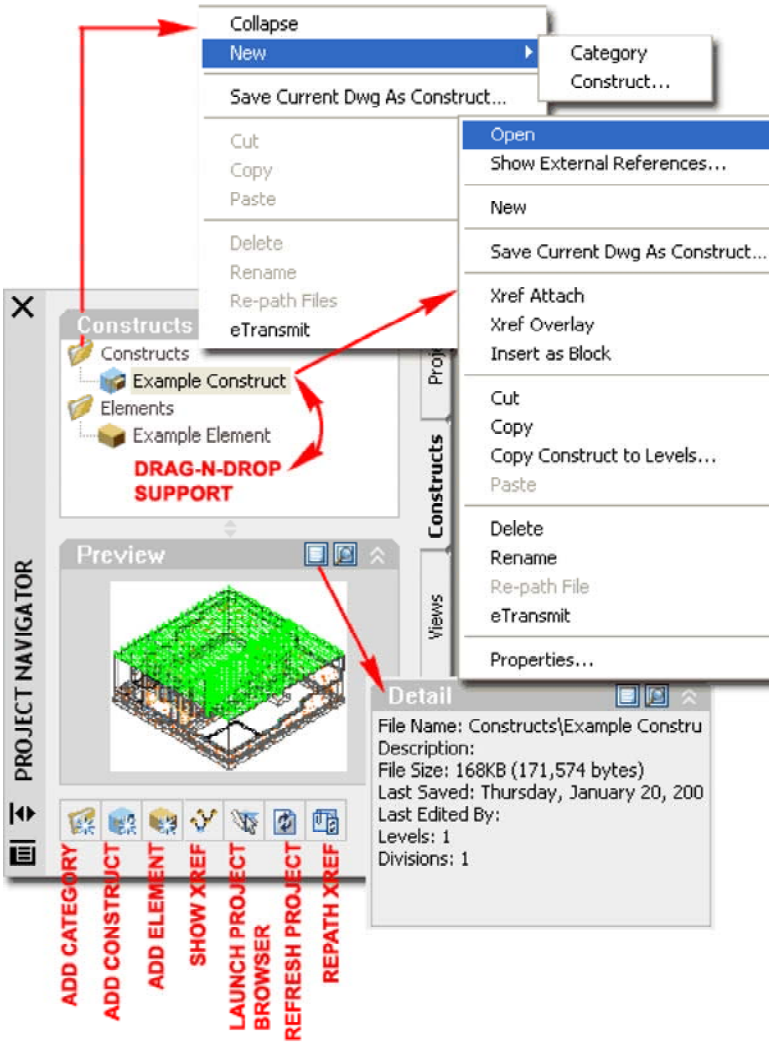


Constructs - this term is simply the name for your primary drawing files in a project. This is identical to how many offices have managed regular AutoCAD files for years now and you may prefer to think of this term as "Plans". All drawing files stored within the Constructs folder, including all sub-folders, are labeled and managed by the Project Navigator as "Constructs". Since Constructs are just regular drawing files (.dwg) you can create them in many different ways but however you decide to create them, they have to be coded or written into the Project Navigator by some means of creation or importing; i.e., simply saving a file to the Constructs folder does not make it a "Construct". When you use the Project Navigator to manage files, it automatically creates tracking files in XML code and without these files, the Project Navigator cannot read or list them. The safest way to create a Construct file is to use the **Context menu**, Select **New >** and cascade to "**Construct**". When you take this approach to creating files in the Project Navigator, you receive a new file based on the default templates assigned to the Project.

Elements - this term is also a name for drawing files but these are meant to be used as parts that fit into the Constructs; these would not be equivalent to "Plans" but more like "Blocks". The primary difference, technically speaking, between Constructs and Elements is the connection these drawing files have to Levels and Divisions (set on the Project tab). Simply put, Elements don't care about Levels or Divisions. If you look through the example files that come with ADT, you will find that one of the most common Elements is an office workstation ("cubicle") because it is a self-contained drawing that can easily be placed on any Floor and Copied as many times as desired. As with Constructs, the safest way to create one is to use the **New > Element** Context menu option because it ensures that you use a default template.

Open - this will open the drawing file but you can also just double-pick on the name or icon to produce the same results.

Show External References... (**Show Xref** button) - this option activates a separate dialog box in which you will see a list of the Xref's that may



Copy Construct to Levels - this interesting option allows you to Copy the Selected Construct and Paste copies of it to one or more Levels. Essentially, this is a way to Copy one drawing file and Paste it as new drawing files while setting them to different Levels. You could, for example, Copy a Construct of a single floor that has been assigned to Level "Flr 1" and Paste it with unique names (automatically assigned) while setting each to other Levels such as "Flr 2", "Flr 3" and so on. Once complete, you can change the Construct File Names to something more appropriate. See also Copy Level and Contents on the Projects tab.

Delete - this removes the Construct or Element from the Project Navigator and from your computer. If you have taken this action by mistake you should be able to recover by looking for the .bak or .sv$ (usually in the \Temp directory) from a previous save.

Rename - this option can also be triggered by picking twice on the file name much like you would in Explorer. I recommend extreme caution using any form of file Renaming despite the improved "Re-pathing" tools in the Project Navigator. In a perfect world you can successfully Rename files inside the Project Navigator and then fix the Path issues by using the Re-path tools but I find that it is easier to break than to fix.

Re-path File - this option must be used after Location or Name changes to Construct or Element files as a means to reset the Xref links to other files such as Views and Sheets. There are actually three types of Re-pathing: File-based, Folder-based and Project-based. The first two are accessed by what you Select while the full Project-based "Re-pathing" option is available on the "Re-path Xref" button at the bottom of the Project Navigator. Each type obviously seeks out a different scope of files to act upon and if you are working in a networked environment it is safest to only Re-path the file you just modified rather that Re-pathing the whole Project. In a small office, like mine, I just hit the button to save time Comment: Elaborate on the whole Repath

have been **Attached** or **Overlayed** in the Selected drawing file. One of the best aspects of this option is that you don't have to Open the Constructs or Elements to see the Xref's within them. Look for this option under the Views tab as well.

Xref Attach and Xref Overlay - these two Xref options can be used to import the Selected Construct or Element into the current drawing file. You may drag-n-drop Constructs or Elements directly from the Project Navigator over to the current drawing file for similar results, however, the use of "Attach" versus "Overlay" will differ depending on which of the two Folders the drawing files come from: Elements -> Constructs are "Attached", Constructs -> Constructs are "Overlayed".

Insert as Block - this option should be obvious and is basically intended to allow users to Insert an Element into a Construct instead of importing is as an Xref. You could, of course, "Insert as Block" from Construct to Construct and from Element to Element but these options all defeat the purpose of using Xref's and that's the primary purpose of using the Project Navigator.

Cut, Copy and Paste - using these options on Construct and Element files is similar to doing it with Explorer except that it is necessary to do this work in the Project Navigator if you want it to see your files. In other words, this is how the Project Navigator is able to know what you have done with the files and can thus write those XML files to track the work.

I just hit the button to save time.Comment: Elaborate on the whole Repath situation, how it fails when files are open and how to fix when files are orphaned

eTransmit - this option is identical to the the eTransmit command that you can activate at any time in any drawing file. In the Project Navigator, however, it can be activated at different folder hierarchies to include or exclude multiple drawing files. Because drawing files in the Project Navigator are associated with numerous other sources of information and data, these will appear in the eTransmit dialog; weird things like the Bulletin Board. See eTransmit under the Project Browser section for more on this topic.

Properties... - this option takes you back to the original dialog box typically seen when creating New Constructs or Elements through the Project Navigator template files. You can change just about everything; from Levels to Categories.

Refresh Project - this option is similar to using the F5 in Explorer or Internet Explorer and becomes a major tool for those working in networked environments where multiple users are working in the same Project.

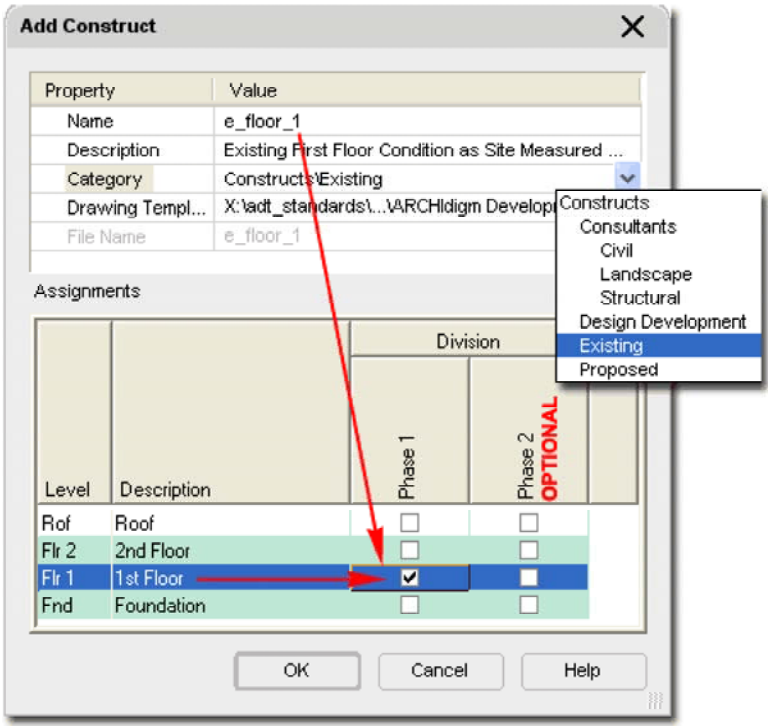
Constructs Tab - Add Construct - Assign Level and Division

Mouse **right-click** over Categories or Constructs on the Constructs tab of the Project Navigator, Select **New** and cascade to **Construct...**

Though you can Add Constructs by **Saving the Current Drawing file as a Construct** or by Importing a drawing file using **drag-n-drop with Explorer**, I highly recommend that you force yourself to use the **Add Construct dialog**. This approach ensures that you start with a template file that should be specifically configured for use as a Construct.

When you activate the Add Construct dialog, the current **Category** is listed but you can change it using the drop-down list as illustrated to the right. In addition, you will find that the Default Construct Template file has been set though this too can be changed using the ellipses button. The primary information that you need to provide is a File Name and a Level/Division Assignment.

Level and Division Assignment - though there is no requirement that you assign one of your Constructs to a Level or Division (no alert message) failing to do so can be problematic in the overall assembly of drawing information. View Drawings, for example, will not read files that have not been assigned to Levels. Assigning one file to two or more Divisions has no significant consequences other than what you might expect but Assigning one file to two or more Levels creates a Construct referred to as a "Spanning Construct" which may produce results you don't want. In both cases, the file is likely to appear in multiple places but ultimately the final say on this matter will be up to you when you create your View Drawings. If you read over the View tab discussion you will see that you can Select or Deselect files as you see fit. Therefore, the worst thing you can do is not assign a Level/Division.



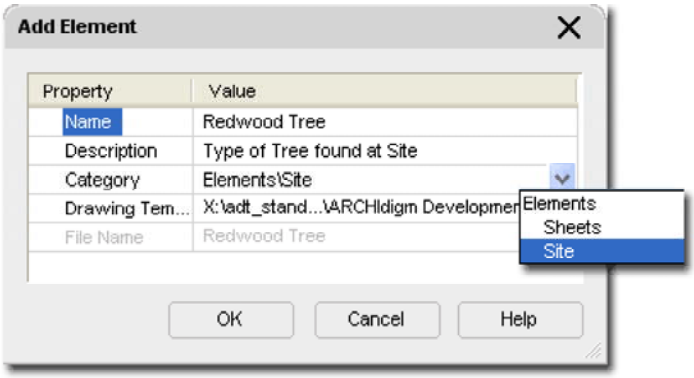
Spanning Constructs are typically employed when you create a unique drawing file designed to hold content to be shared between one or more Floors; like Stairs. Single Objects that need to be drawn (or modeled) across many floors, such as Curtain Walls, are also good candidates for being set as "Spanning Constructs". Comment: Add link to Spanning Example when ready.

Constructs Tab - Add Element

Elements are about as simple as drawing files can get in ADT and you might think of these files as something like Project Blocks. Elements are not Assigned to Levels or Divisions but that is because they were designed for use in Constructs where they will adopt their Assignments. The primary argument for using the Add Element dialog as opposed to Saving the current Drawing as an Element or simply dragging a drawing file into the Project Navigator via Explorer, is the fact that this dialog uses the Default Element Template which may have been configured for the most efficient and least "polluting" use.

When you activate the **Add Element dialog**, the current Category is listed but you can change it using the drop-down list as illustrated to the right. In addition, you will find that the Default Element Template file has been set though this too can be changed using the ellipses button. The primary information that you need to provide is a File Name.

Common examples of Elements are things like office cubicles, general furniture layouts and highly redundant objects like trees, cars or similar landscaping objects. I continue to find new things that I consider Elements; things like Titleblocks, general notes and similar sheet related information. See Automatic Xref'd Titleblock for Sheet Files for an example.

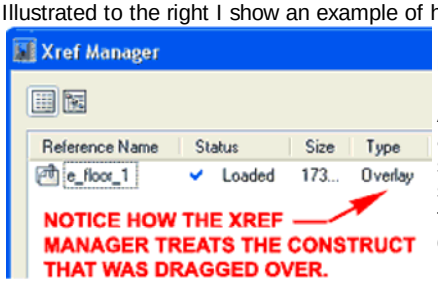


Note:
Though Elements can be Inserted as Blocks, I find that they serve me best as Xref's and the more I use them the more I have started to see them as replacements for Blocks. Even a simple Chair can prove to be a good candidate for use as an Element; especially if used on many floors, if it is a very detailed MvBlock and if some slight change is suddenly required - think about it.

Constructs Tab - Dragging Files Around

The moment I created an **External Reference** (Xref) link between a 1st Floor and a 2nd Floor with a simple **drag-n-drop action** was the moment I was sold on the Project Navigator. To me, dragging is the single most important operation you can make within the Project Navigator and I am sure you will find some surprises with the number of things you can do with this action.

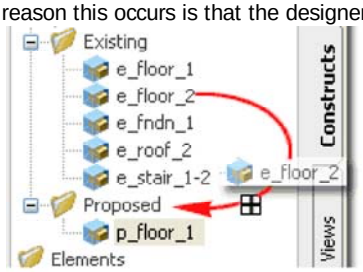
Illustrated to the right I show an example of how I begin work on a 2nd Floor Construct by dragging in the 1st Floor Construct. Because Constructs are Assigned to Levels, they always assemble correctly; saving you from having to spend time on moving floors, foundations and roofs up or down along the z-axis.



This drag-n-drop action can be applied to Constructs, Elements and Categories (the Folder icons) but the results are not always the same.

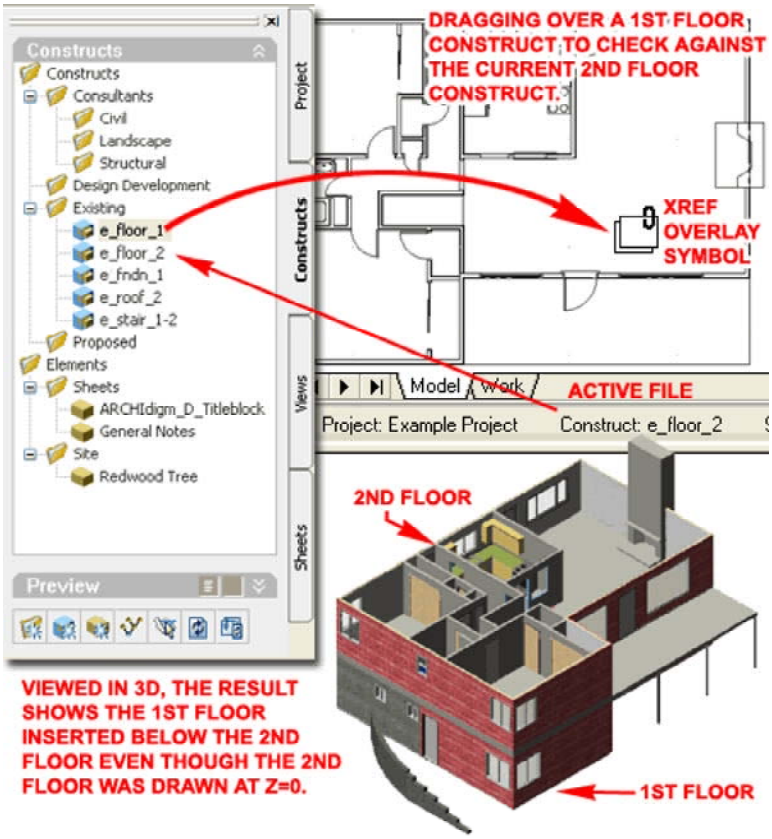
Construct to Construct - this produces an Xref set to the **Overlay type** which means that the Xref will not be passed forward into other files.

Element to Construct - this produces an Xref set to the **Attach type** which means that the Xref will be passed forward much like a Block. The reason this occurs is that the designers of this tool see Elements as building blocks within Constructs. When you create View Drawings that are comprised of Constructs you also acquire the Elements. If you don't abide by this formula you could end up with Elements on the wrong floors.



Construct to Element - this produces and Xref set to the **Overlay type**.

If you are unfamiliar with Overlay and Attach Xref types, the best way to understand and remember the difference is that Overlays act exactly as their name suggests but Attachments are really attached (hence the paperclip icon) and travel with the file they are brought into. As you can image, using Attachments for



Drag Construct file down to an Element Category - this action changes the Construct into an Element and blows out all of the Level and Division Assignments.

Drag Element up to Construct Category - this action changes the Element into a Construct and automatically activates the "Add Construct" dialog so you can Assign a Level and Division.

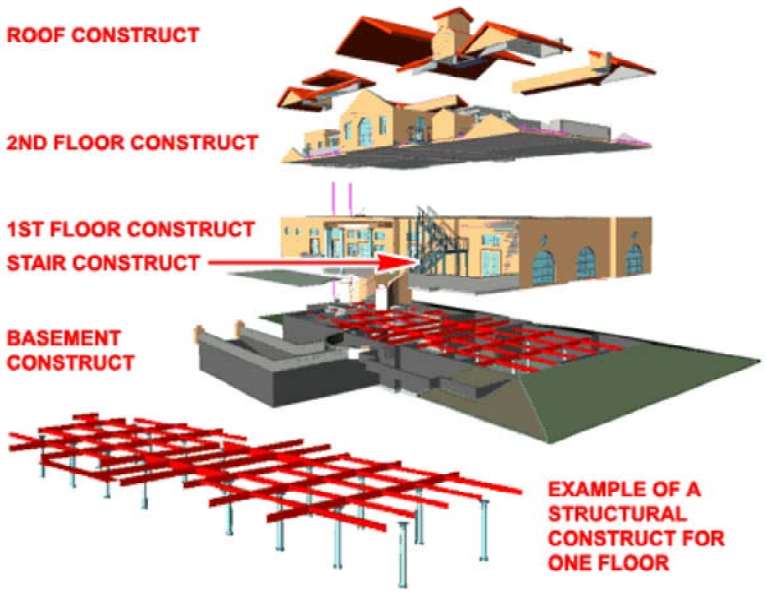
Dragging Categories - this action produces some odd results that I may not have a full understanding of. I have found that when you drag Categories whose contents have been Xref'd to other files, the Category tends to remain while producing a Copy. Ironically, however, all of the files are Moved.

all Xref types would produce quite a mess in a project but never using them would force users to repeat the process of bringing in Xref's over and over. When we get to the discussion about View Drawings you will see another example of how these Xref types play an important role in bringing files together for Sheets.

Construct Examples

Though I have been asked how a person or company should structure a building with respect to Constructs, I never feel that the question really should be posed to me. As with the structure of 2D AutoCAD files each office has to consider the goal (such as CD's) and evaluate the most appropriate process to achieve it. Ultimately I feel that the more you break a building into individual Constructs, within reason, the better. This is analogous to the use of Layers and in many respects I see Xref's (Constructs, Elements and so on) as Layers for 3D Objects.

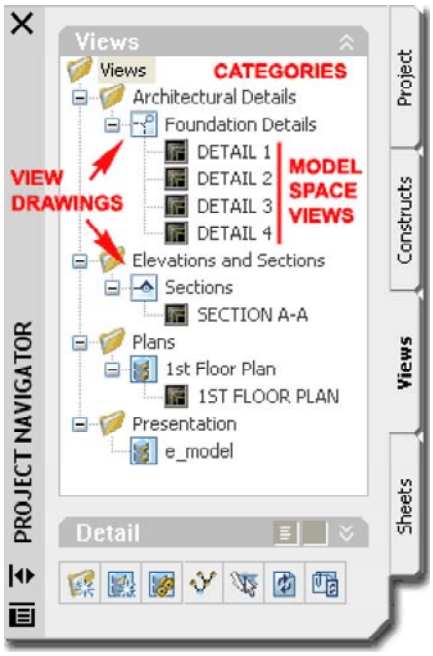
Illustrated to the right I show an example of a multi-story building with some of the primary Constructs that I used to assemble it. Within each of the primary Constructs I also employed other Constructs for things like Structure and Stairs.



5 Project Navigator - Views

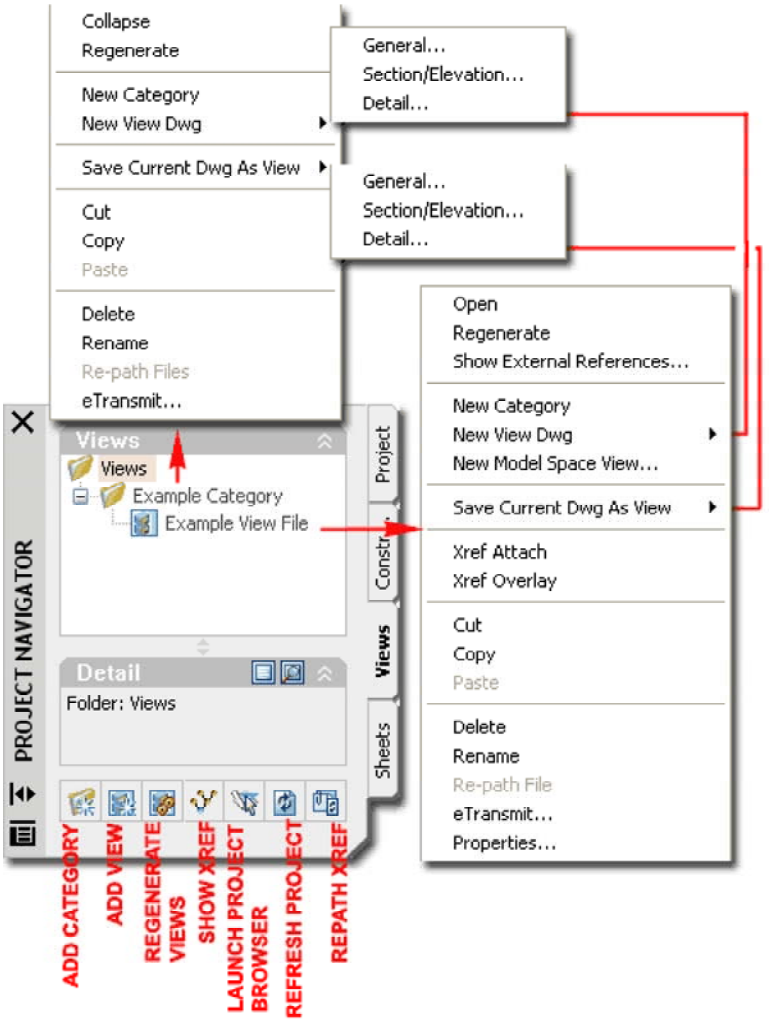
Project Navigator - Views Tab - Overview

On the **Views Tab** of the **Project Navigator** you will find one **Folder** that cannot be Renamed or Deleted. The View Folder is an actual folder when viewed with Explorer.



For former AutoCAD users, View drawings may prove to be a bit perplexing because they could easily be seen as the final destination for Constructs. After all, View drawings were designed to be the recipients of one or more Constructs where they are Dimensioned, Labeled and otherwise annotated with things like Callouts and Titlemarks. Logic would suggest that you configure a Paper Space Layout for a View drawing and stop there without more forward passing of Xref files, but that's not the function they were designed for.

I believe that one of the best examples of how a View drawing can be employed as a highly valuable asset is to look at a common set of four Elevations. To produce Elevations in ADT you will need to pull most of your Construct files together into one file (the View drawing), where you use Callouts to Generate the four Elevation Views. Once you Generate the four Elevations, you also create Named Model Space Views set to a Scale, with a default Display Configuration and a Layer Snapshot. Each Elevation becomes a Named Model Space View and is listed below the View Drawing with a unique Named Model Space View icon. These icons can be dragged directly to Paper Space Layouts under the Sheets tab of



the Project Navigator allowing you to place one or more per Sheet. Image having four or more Sheets for your Elevations while being able to access them all in one View file.

For some, the example I just provided offers little more than the clutter of an extra drawing file that exists somewhere between the Construct files and the Sheet files. Users often complain that they don't know where to edit something in this tangle of Xref's but I believe this is just something that has to be resolved uniquely in individual offices. As you may have discerned from my writing, I am not a big supporter of rules set by programmers, especially when they don't sit in my seat and do my work, but I highly recommend that you explore using View drawings for the tasks that make sense. For other tasks, just assemble your Sheet files as you see fit, but be sure to read over my comments on how to work with Callouts and Titlemarks so you understand the annotation-related consequences of doing things your way.

Illustrated to the right I show the View tab of the Project Navigator and most of the context menus that you can access from the Views pane. Many of the options available on these menus are similar to those found under the Constructs tab but the most important and most significant difference can be found via the **New View Dwg >** cascading menu: **General**, **Section/Elevation** and **Detail**.

General View Drawing - this type of drawing is meant for all of the drawings that don't fall into the categorization of Section, Elevation or Detail. In reality you can use this type of drawing for whatever you wish but I believe the primary purpose for it was to configure Plans. This drawing type can be set to use a unique Default **Model View Template**.

Section/Elevation View Drawing - this type of drawing is obviously meant for Section cuts and Elevation projections but can also serve as the source of detail callouts as they relate to Sections and Elevations. This drawing type can be set to use a unique Default **Section/Elevation View Template**.
Comment: elaborate, clarify and link to example

Detail View Drawing - this type of drawing is meant to correspond with the various default Detail Callout symbols. Details can either be created in a Detail View or be the result of work done in another drawing using a Callout symbol. This drawing type can be set to use a unique Default **Detail View Template**.Comment: elaborate, clarify and link to example

Views Tab - Add View

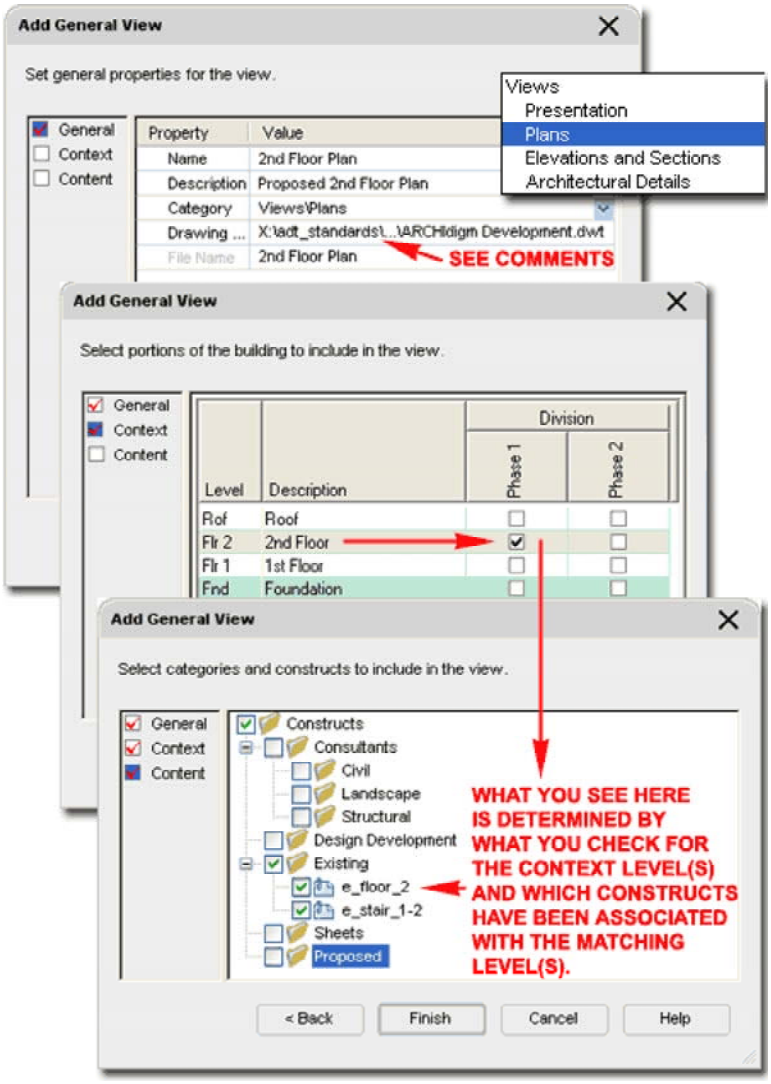
When you are ready to create a **General**, **Section/Elevation** or **Detail** View drawing, the steps are basically all the same. From the Context menu, Select **New View Dwg >** and cascade to one of the three **View Drawing Types**. Each View drawing type will activate a matching Add ... View dialog but the only difference between them is the word between "Add" and "View".

Illustrated to the right I show the steps I have taken to create an example "2nd Floor" View drawing using the **Add General View dialog boxes**. By now you should be familiar with the layout of the "General Properties" because they are identical to those for Constructs. The Name you provide here will also become the actual filename and the Category in which you store it will be an actual sub-folder of the primary Views folder. You can specify a unique Drawing Template but the Default Model View Template should suffice.

On the second page of the **Add General View dialog** you specify which **Level**(s) and **Division**(s) you want to include in this View drawing. This process is actually a filter system to help you find Constructs that match your criteria. This also reiterates the significance of Assigning Levels and Divisions to your Constructs.

On the third page of the Add General View dialog box you get a chance to review the results of your search criteria set on the second dialog box. In a perfect world for example, if you specified that you only want the "2nd Floor" Level" in one Division then all you should find as **Content** are the Constructs that have been Assigned to match this criteria. In the illustration to the right I show that I found two items; one is the actual "2nd Floor" labeled as "e_floor_2" but the second is a "Spanning Construct" of the stairs which has been set to show up for "1st Floor" and "2nd Floor" requests (Contexts). Now as far as I see things, it is not a perfect world and stuff will happen so it would not be surprising to see multiple drawing files from Construct Categories like "Existing", "Design Development" and "Proposed". If you haven't used Divisions to filter them out, you will need to do so here.

Note:
As with Construct and Element files, you can create View drawings by using the "**Save Current Dwg As View >**" Context menu option. You can also **Copy** or **Cut** Construct or Elements and turn them into View drawings with the **Paste** Context menu option. You can even drag a drawing file from Explorer to a View Category and turn it into a View drawing. The only

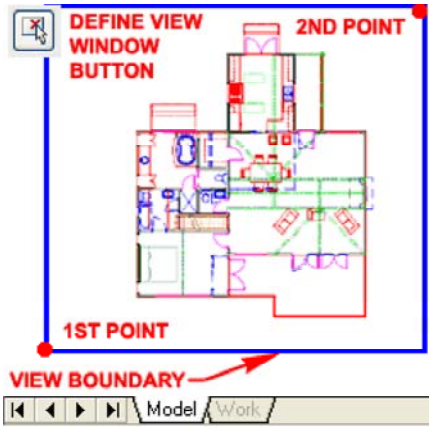


problem with any of these alternate approaches to creating View drawings is that they don't utilize any of the default View templates and that could be a recipe for problems if your office has taken the time to create highly customized templates. Section/Elevation templates may contain configurations for custom Display Properties and Section/Elevation Styles that filter Colors to produce custom results.

Views Tab - Add View - Other Options

Views Tab - Add Model Space View

Once you have assembled a **View Drawing** you will need to think about how this drawing will be used on one or more sheets of paper. The most important task you need to perform at this stage is to configure an actual "**view**" as it will appear on the paper itself. For those familiar with traditional AutoCAD techniques in drafting and presentation, you can think of this work as defining a rectangle that represents the limits of your **Viewport** once it is placed in a **Paper Space Layout**. The odd thing about View Drawings is that they are typically not the Sheet Drawings but merely a transit tool between the information you want to show and the sheet you want to show it on.



To configure or "define" a View in your View Drawing you can use the "**New Model Space View**" **Context menu** option or you can take a longer route by using the old AutoCAD "View" command. In either case you must have the View Drawing Open and you must be in the **Model Space** environment (use Model Tab).

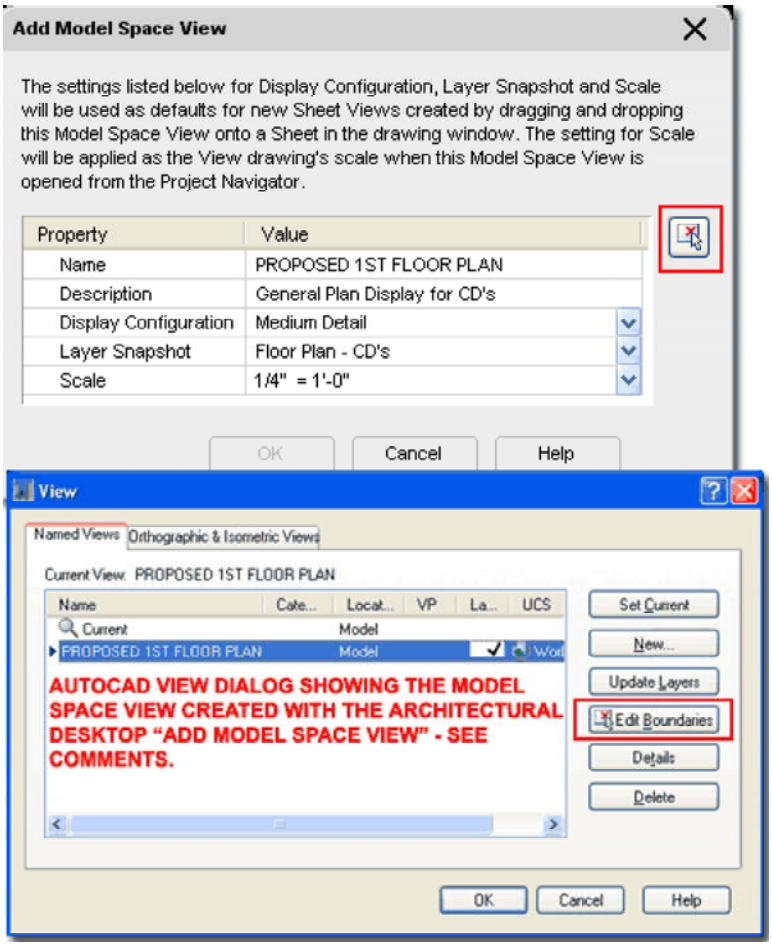
Illustrated in the upper right corner I show the "**Add Model Space View**" **dialog** where you will need to **Name** your View, set a **Display Configuration**, **Layer Snapshot** and **Scale** as you want to present the drawing in a Paper Space Layout. The "**Define View Window**" **button** must be used to create a rectangular frame around the drawing information that you want to display in a Viewport that will automatically be created in a future step (to be discussed under Sheets).

Name - when you specify the name for your "View" be sure to consider how you want to label this drawing or drawing area because ADT's Annotation Symbols use Fields to link to and report this name. On a common floor plan, for example, a "Title Mark" can be used to report the name; saving you the trouble of having to type it in later and automatically updating it if you change it.

Description - this is an optional field that you may never use. It does not appear in the Detail view pane of the Project Navigator nor anywhere else I looked.

Display Configuration - this value field uses a drop-down list to access any and all off the current drawing's Display Configurations. What you set here will be the default for the Paper Space Viewport once you drag this Named Model Space View into a Sheet file. If required, it can be changed in the Sheet file so this setting is not entirely permanent.

Layer Snapshot - this value field uses a drop-down list to access any of the Layer Snapshots you may have in the current drawing file. As the name implies, these can be used to control how you want the Layers to be set when the Named Model Space View is dragged in to a Sheet file. See **Part 2 - Layers** - Layer Manager - Snapshots for more on Snapshots.



Scale - this value field use a drop-down list to access the standard Viewport Scale list. The scale you set here will be the default Paper Space Layout Viewport Scale for the current Named Model Space View when dragged in to a Sheet file. Be aware that despite the fact that you can change this value at any time in the View drawing, the change is not passed on to the Sheet file unless you Delete the old Named Model Space View and drag the changed one over to the Sheet file.

Illustrated above I show the **View dialog** in order to communicate a portion of what ADT's "**Add Model Space View**" **dialog** is actually doing for you. If you compare the two dialog boxes you will see that the View dialog does not offer options for Display Configurations and Scales which are rather important when working with ADT drawings. For me, the Scale option is the most significant difference because that information is read by most of the "Title Mark" Symbols and needs to be set with the View in order to work properly. If you are a fairly savvy user, however, you can use the View dialog and then return to the Project Navigator to make Property changes on the Views with the "Modify Model Space View" dialog.

Project Navigator - Sheets Tab - Overview

Links	Sheets Tab - Rename and Renumber Sheet - to learn how to rename Sheets and Sheet Files.
Mouse	**When Opening Existing Sheet Files:** double-pick on a Sheet File icon to Open, double-pick on a Sheet File Name to Open and activate the Rename and Renumber dialog.

On the **Views Tab** of the **Project Navigator** you will find one **Folder** that cannot be Renamed or Deleted. This folder, named "**Sheets**", and its contents can be presented in a "**Sheet Set View**" or in a more traditional "**Explorer View**" by picking on the corresponding buttons at the top of this pane - see right. In the default Sheet Set View, the Sheets folder icon is not visible but it is replaced by a main Sheet Set icon that usually displays the Project Name.

For most work you will want to view the contents of your Sheets in the Sheet Set View because of the superior organizational features and file information that is not available under the Explorer View. The primary purpose for the Explorer View is to allow you to see and work with your Sheet Files as actual files in Explorer. It is very important to recognize this option and the distinction between the two views. The **Sheet Set View displays Paper Space Layouts** that may or may not belong to different drawing files (to avoid confusion they really should belong to separate files). The **Explorer View displays drawing files** and their Paper Space Layouts. See Sheets Tab - Subsets and Categories for more on this subject.

Under the Sheet Set View you can create **Sheet Set Subsets** which are similar to the Categories you create on the Views and Constructs tabs with the exception that no physical folders are created; i.e., these are groups or "subsets". Within the primary Sheet Set or any Subsets you can create New Sheets that will serve as "print-ready" documents employing one and only one **Paper Space Layout**. New Sheets should be created from a default Template File that contains all of the information required to make the drawing ready for printing with the exception of the project files; i.e., the file should include a Layout configured to Print, a Titleblock and any other data typically associated with your finished sheets.

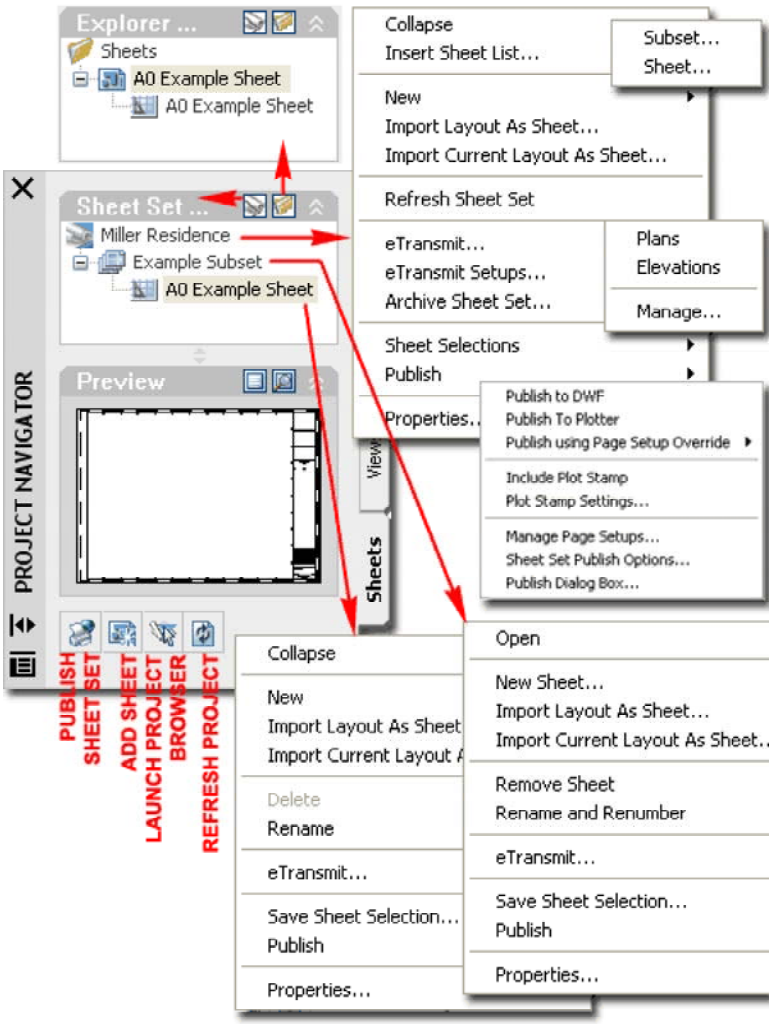
To complete a Sheet, you work with the Views tab (or in some cases the Constructs tab) of the Project Navigator and drag over **Named Model Space Views** that have already been configured to produce a Paper Space (or Layout) Viewport at a specific Viewport Scale using a specific Display Configuration.

Once several Sheets have been assembled, you will find that there are numerous tools for managing your Sheet Sets; including Renaming, Renumbering, Saving Selection Sets and Publishing (Printing).

Collapse - this option should be self-explanatory for subsets but try it on the main Sheet Set icon. Because this icon offers no indication that it can be expanded some users might mistake this for an incomplete Sheet Set. To **Expand**, you have to right-click and Select the Expand Context menu option.

Insert Sheet List - this option is only available from the main Sheet Set Context menu and will thus read your entire collection of Sheet files; including those in subsets. To me this is so serious a design flaw that I find that I cannot use the Sheet List tool. We need to be able to filter out subsets. Assuming you don't have the same problems with this tool that I have, you will find that it produces a customizable **Table** with **Fields** that you can set to report on "**Sheet**" or "**Drawing**" **Properties** (including custom Properties). The default Sheet Set List produces a column of **Sheet Number** and a column of **Sheet Titles** with a default Table Header.

New > Subset - this option should not be confused with folders. When you add a Subset you are simply adding a group for Sheets. However, you can add a Category which is a folder and then set the Subset to place Sheet files in that folder. See Sheets Tab - Subsets and Categories for more information.



Comment: lower two context menus are opposite

eTransmit... - this option is similar to the the eTransmit command that you can activate manually in any drawing file but offers a unique "**Sheets**" **tab** in addition to the "Files Tree" and "Files Table" tabs. When using this **Context menu option** (don't type the command) under the Sheets tab of the Project Navigator, you can activate it for the entire Sheet Set, Subsets, Saved Selections or individual Sheets. You can even activate it under the Explorer View. Sheet based transmittals typically generate the largest collection of Project information due to the number of files associated with Sheets; such as Constructs, Elements and Views. This is the reason you will find that using the eTransmit Context menu option from the Project Browser uses Sheet Sets by default. See eTransmit under the Project Browser section for more on this topic.

eTransmit Setups... - this option activates the "Transmittal Setups" dialog where you can create **New**, **Rename**, **Modify** or **Delete** existing Setups. The "Modify Transmittal Setup" dialog offers options for how you want to process your collected files in the transmittal; location of files, as a .zip and in what version of .dwg, for example. See eTransmit under the Project Browser section for more on this topic.

Archive Sheet Set... - this option is almost identical to eTransmit but without options for e-mailing. You can also Archive an entire Sheet Set from the Project Browser. See Archive under the Project Browser section for more on this topic.

Sheet Selections > - this option will only offer the "Manage..." cascading menu option if no Sheet Selections have been Saved (See Save Sheet Selections, below). When Sheet Selections have been Saved, the Names appear on this cascading menu and Selecting one will highlight the list. The **Sheet Selections dialog** simply offers two option: "**Rename**" and "**Delete**".

New > Sheet - this option activates the New Sheet dialog where you can specify a Sheet Number, Sheet Title and actual filename. The Properties of the parent Sheet Subset determine the Path and Location for the Sheet file. Sheet added through this option will utilize a template file which is highly desirable for sheet files considering that they have Titleblocks.

Import Layout as Sheet... - this option activates the Import Layouts as Sheets dialog which offers a Browse for files tool and a "Select Layouts..." pane where you can pick one or more Paper Space Layouts to import as Sheet files. Using this approach makes it rather easy for users to create multiple Sheets that point to one Sheet file and that could be a potential for disaster. This is not to say that there is anything particularly wrong about having two or more Sheets point to one Sheet file but hopefully you can see that it could be problematic given how this system was designed.

Import Current Layout as Sheet... - this option reads the active Paper Space Layout tab of the current drawing file and imports as a Sheet under the current Sheet Subset. This option has the same potential for problems as the previous option. In addition, both options allow users to create Sheets from files anywhere on the local drive or network environment and though there are times this might be incredibly useful, I believe that most of the time this is another recipe for disaster.

Refresh Sheet Set - this option updates the Sheet List and should be used after making changes to Sheets or when you believe others have made changes. On some networks that suffer from occasional slowdowns, I have found that if you don't Refresh, you can actually work on "ghosts" of Sheets and create such a terrible mess that the Sheet Set (.dst) file becomes corrupted and unusable.

Publish > - this option is one of the main reasons Sheet Sets exist and is such an extensive subject that I will defer information on it to another section in this chapter.

Properties... - this option accesses different dialog boxes depending on the set you have activated it from. The Properties for the main Sheet Set offers a large dialog box with options that should be similar to those for the whole Project including a Sheet Set Name, Custom Properties, Template files and so on. The Properties for Sheet Subsets offers a small dialog box with the options for Name, Location for Sheet files and default Template.

Remove Sheet - this option is incredibly misleading and frustrating. Removing a Sheet is not the same thing as Deleting a file and thus when you Remove a Sheet all you do is remove the listing of a Paper Space Layout tab in some drawing file. This means that if you also wish to Delete the Sheet file, you will need to switch to the Explorer View where you can use the Delete option on the Context menu. I think it would have been much better if a dialog appeared with the option to "Delete Sheet" or "Delete Sheet and File". Yea, and lets add a checkbox for "Don't ask this question again".

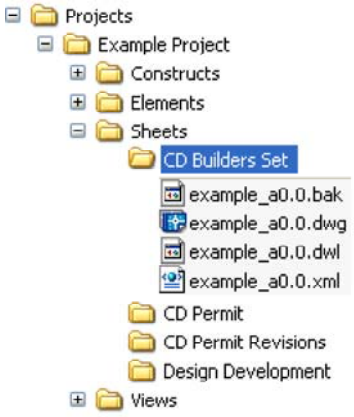
Rename and Renumber - this option is rather useful because it provides a **Next >** button to help you sequence the Renumbering and Renaming of Sheets.

Save Sheet Selection - this option should be used after Selecting two or more Sheets. Once you have Named your Selection, you can retrieve it via the Sheet Selection > cascading menu found via the main Sheet Set icon. When a Sheet Selection is highlighted for you, you can right-click over any of the Sheets to invoke a short context menu whose primary option is the Publish > cascading menu; i.e., the main reason for Sheet Set Selections is to Publish.

Note:
Notice that there is no option for Cut/Copy and Paste which also means that you cannot drag-n-drop with the Ctrl key depressed and expect to create a Copy of a Sheet File. If you must make an exact Copy for another sub-set/Category try this: Open the Sheet File, Rename the Layout Tab, Save As with a unique Name and then use the "Import Current Layout As Sheet..." Context menu option.

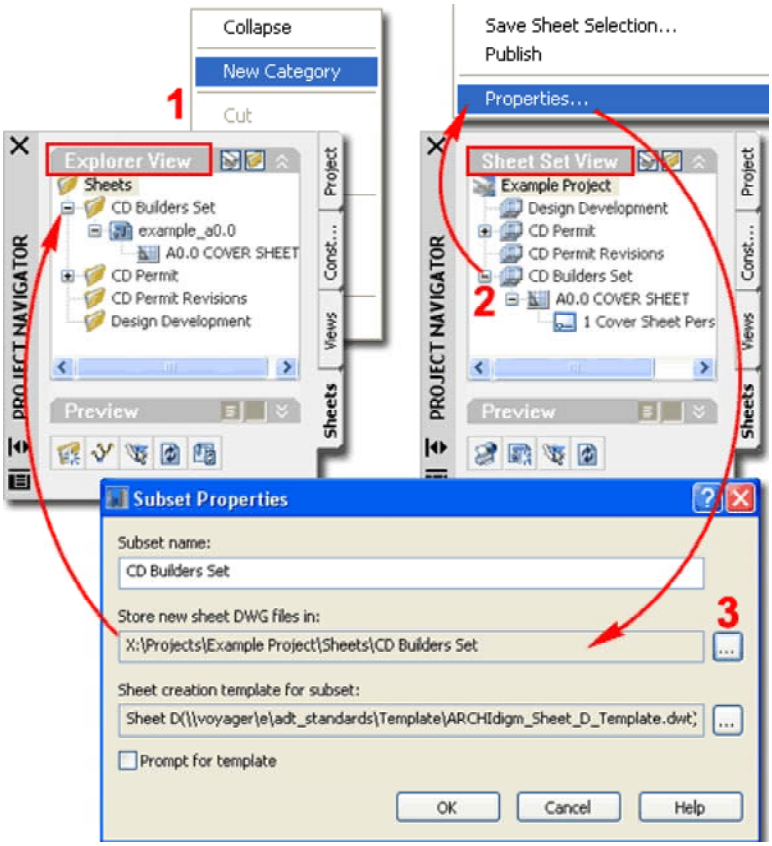
Sheets Tab - Subsets and Categories

As stated above, it is very important that you understand the difference between the **Sheet Set View** and the **Explorer View** of the Sheets tab in the Project Navigator. Under the Sheet Set View all you really see is a collection of Layouts that may or may not belong to a set of drawing files that reside in one location. Subsets offer a practical solution for organizing Layouts but they are not folders - I fear that many will see them as folders, however.



It has been my experience in most offices and it continues to be the standard in my office that print-ready drawing files (sheets, if you prefer) are always stored in individual folders that match specific functions. Early on in a job cycle, for example, we may assemble a set of drawings for client and/or contractor review/bid and all of these files will be saved in a unique folder with a name such as "Review Plots - 01-16-05". As a job evolves, these files are simply part of the project history and it is unlikely that they will be used again.

By switching to the **Explorer View**, you will find that you can create "**Categories**" which are actually **Folders**. In this "view" you can actually Move files around and re-organize them by folders. Under the Sheet Set View, however, you will not see any folders and though you may have Moved files into folders under the Explorer View, their original Subset organization will not be



affected (because subsets are just "groups").

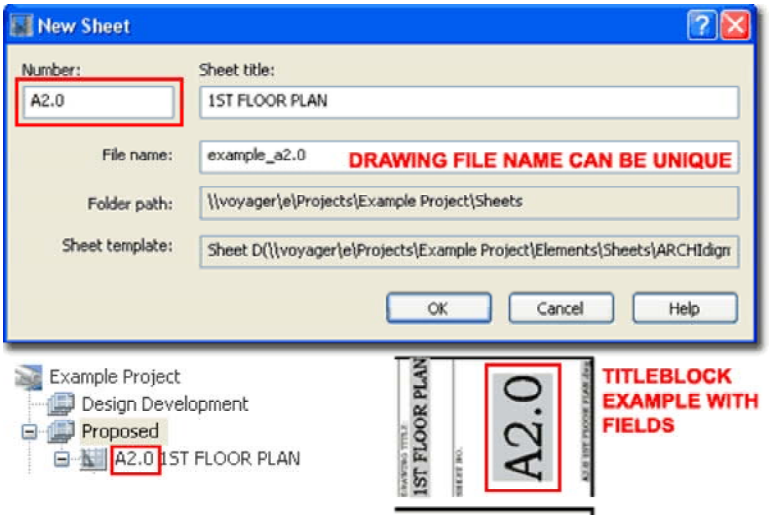
To make a **Subset** function as an actual **Folder**, you can change its **Properties** so that the "**Store new sheet DWG files in**" field points to an actual folder created under the Explorer View. The result of this setting means that when a user creates a New Sheet under the current Subset, the drawing file will actually be stored in a unique folder which is a sub-folder of the main Sheets folder.

Sheets Tab - Add Sheet

Though you can create or Add New Sheets to a Project by Importing from another drawing file or Importing from the current drawing file, I recommend that you employ the **New Sheet dialog** for best results.

On the New Sheet dialog, illustrated to the right, you can set a **Sheet Number**, a **Sheet Title** and specify the actual **File Name** that you want for the drawing. You do not have to provide both a Number and a Title but you will need to provide one of them. You can specify whatever you wish for the Number and Title but to take advantage of numerous default Annotation Symbols in ADT, it is best to see these value fields as sources of information that you want reported in one or more places.

Illustrated to the right I show that on my custom Titleblock I have employed **Fields** to automatically **report** the **Sheet Number**, **Sheet Title** and even the F**ile Name**. You will find similar examples in the default template files that come with ADT. See Project Details - Captured in a Field for an example of how Fields can be set to report this type of information.



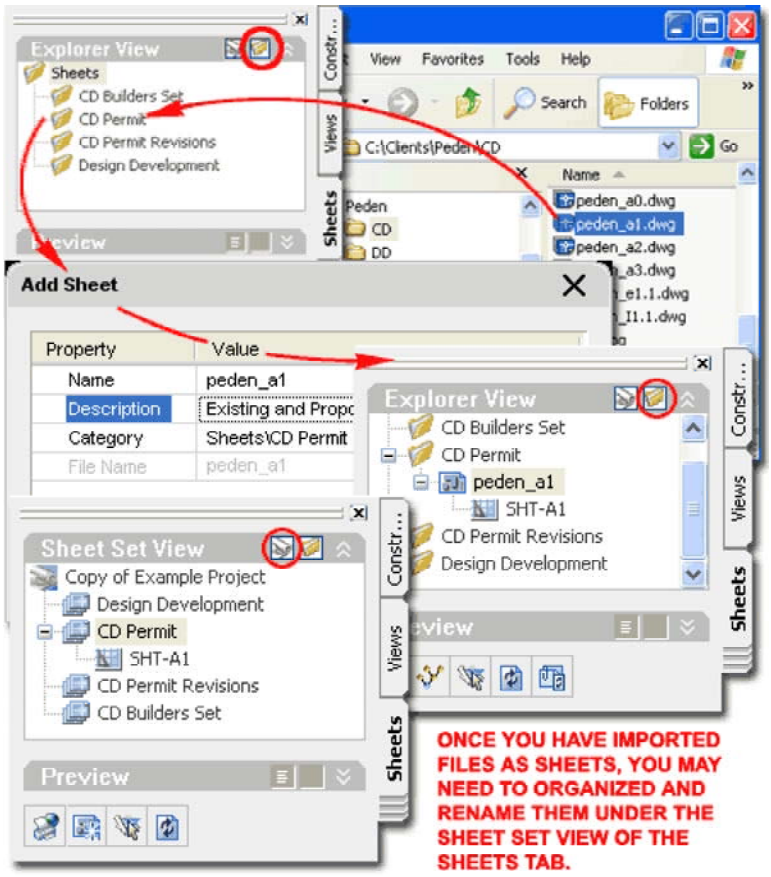
Note:
By default, the New Sheet dialog box will create a File Name by combining the Sheet Number with the Sheet Title. In my office and in most offices that I have worked in, special file name rules have been designed for better file management and you may need to remind yourself to type in an appropriate File Name. Should you forget, as I do all of the time, you can use the Explorer View (not the Sheet Set View) to rename the actual File. Do not attempt to do this with Explorer outside the Project Navigator.

Sheets Tab - Importing Sheets

To **Import drawing files** as Sheet Files you can use the Import Context menu options under the Sheet Set View of the Sheets tab in the Project Navigator - see Overview discussion above. The Import Layout as Sheet... and Import Current Layout as Sheet... Context menu options may prove to be a bit to tedious so you may want to use a drag-n-drop method.

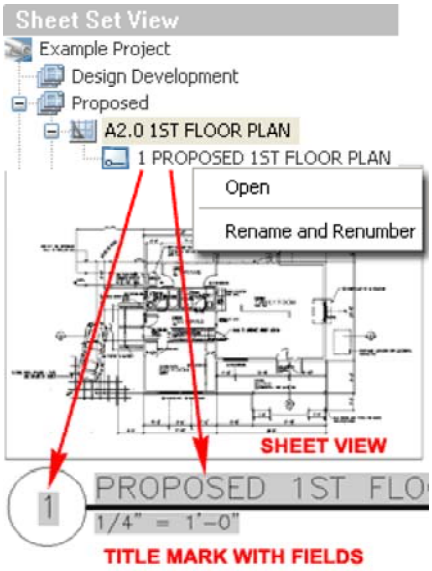
Illustrated to the right I show how you can Import drawing files as Sheet Files using Explorer. In order to be able to drag drawing files from Explorer, you will need to set the Sheets tab to the **Explorer View**. You can drag one or more files in one act but for each file you will find that the "Add Sheet" dialog pops up providing you with the option to Name (or Rename) the Sheet, add a Description and Categorize it.

Once a drawing file has been Imported, you should find that the first Layout from that drawing will be listed as a Sheet. When you use this method you you cannot choose which Layout to use or how many of them to use. Under the Sheet Set View you may find that you will need to organize your Imported files and/or Rename them.



Sheets Tab - Add Sheet View

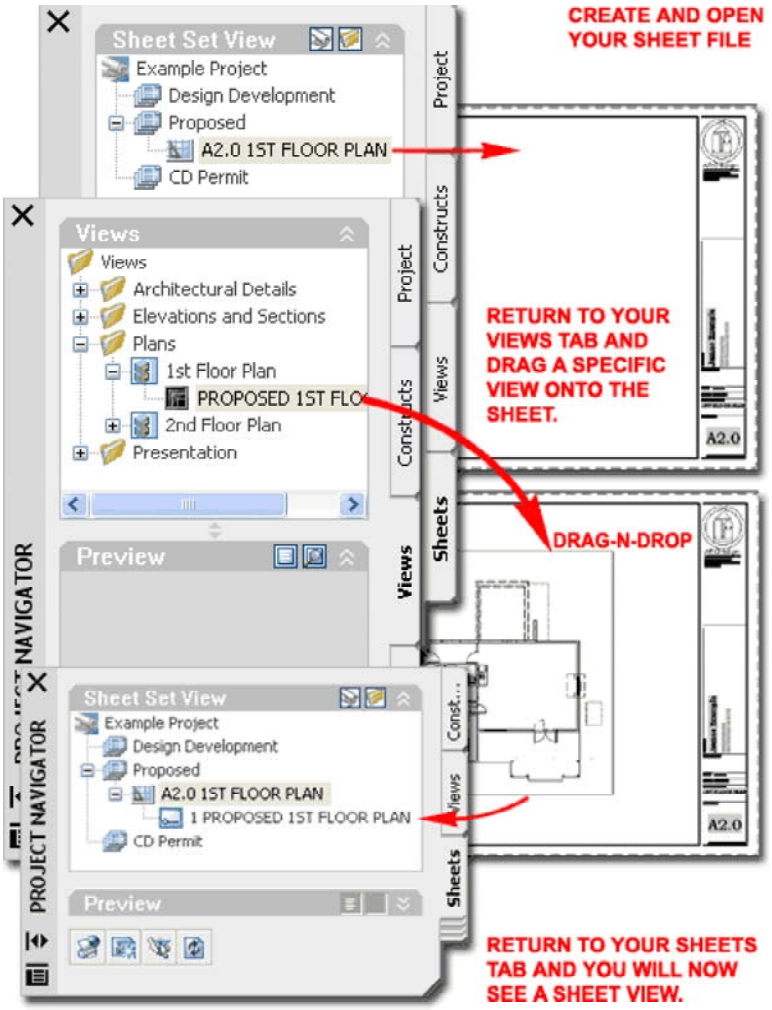
In basic terms a Sheet is simply a Paper Space Layout a drawing file (typically referred to as the Sheet file). This Layout should be configured for Printing to an appropriate device and contain a Titleblock that may or may not need to be filled in with data. To bring the actual drawing information into the Sheet, you need to Open the Sheet file and then drag-n-drop **Named Model Space Views** (from the Views tab of the Project Navigator) right onto the Sheet's Layout. Though you can successfully drag-n-drop a View file to a Sheet, it is best to use actual Named Model Space Views because they contain data that will save time; data like Viewport Size, Viewport Scale and Display Configuration.



Illustrated to the right I show that I have my new Sheet file Open and that I have dragged a Named Model Space View ("Proposed 1st Floor Plan") from my "1st Floor Plan" View file to it. As you take this action, you should feel a slight lag in the cursor as the file is brought in and then you should see the whole Viewport frame and its contents much like a Block. When you place this Named Model Space View in the Paper Space (Layout) environment you should find that you get a Viewport with Model Space content.

For all of the intriguing drag-n-drop work, all you are doing here is what most AutoCAD users have been doing for years now. You Xref-Attach a drawing file into Model Space and create a Viewport in Paper Space to see it.

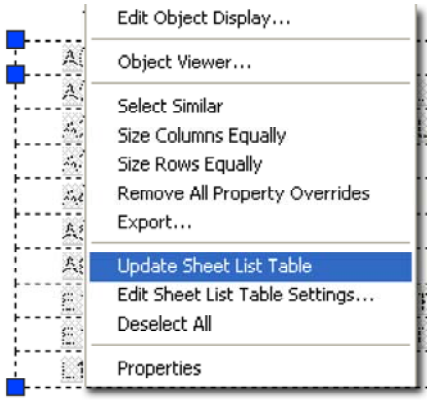
Illustrated in the lower right and to the left I show that once you have dragged in a Named Model Space View, it is automatically **Numbered** and **Labeled**. In the "Sheet Set View" pane of the Project Navigator you will now see the Named Model Space View as a "**Sheet View"** where you can employ the "Rename and Renumber" Context menu option to affect things like **Title Marks**.



Sheets Tab - Insert Sheet List

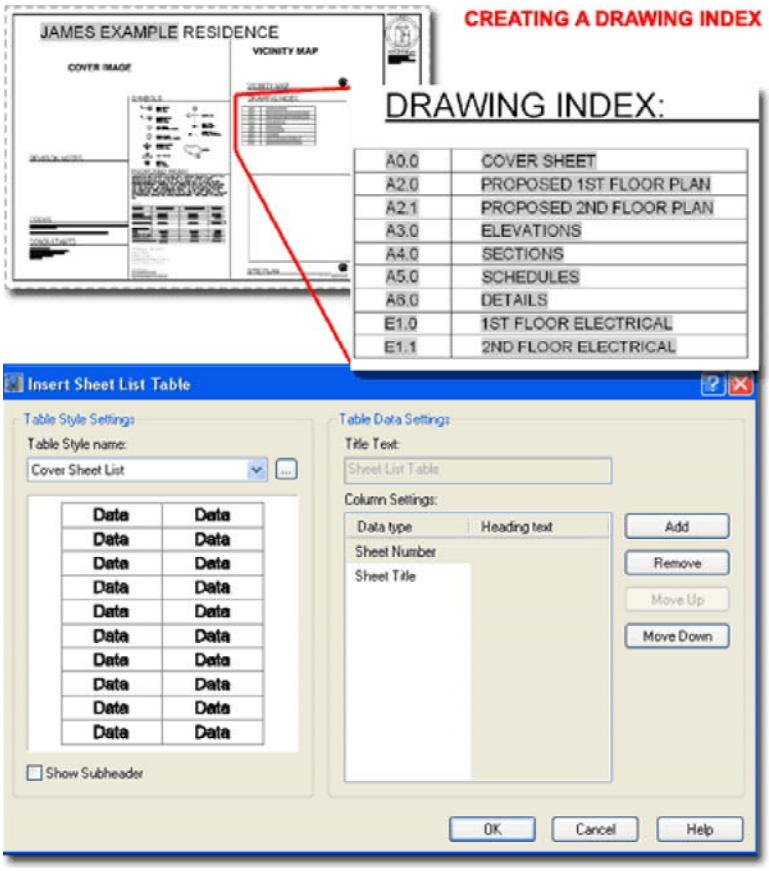
Mouse Highlight main Sheet Set icon, right-click and Select **Insert Sheet List...**

Once you have created your Cover Sheet or Cover Page for your Project, you can use the **Insert Sheet List** tool to create a Drawing Index. This Sheet List uses an AutoCAD Table Style with a list of predetermined Fields that can report data from the Sheet Set; such as Sheet Number, Sheet Title and even Drawing Total Editing Time.



To Insert a Sheet List Table you must have a Sheet File Open and you must Insert the Table in a **Paper Space Layout**. Though you can get a Sheet List Table to insert in Model Space, it will not offer options for Updating. The Table will automatically report on all of the Sheets in the main Sheet Set and there are no options for Selecting or Limiting this report. For me, the fact that I cannot control what Sheets are listed in the Sheet List Table almost makes this feature pointless. Though you can Delete Rows to remove unwanted Sheet Listings, they will reappear whenever you use the **Update Sheet List Table** Context menu option. The order of the list is determined by the order of the Sheets and you can drag-n-drop the Sheet Files in the Project Navigator to change the Table.

Note:
To add your own fields under the Data type list on the Insert Sheet List Table, see **Sheet Set Properties - Custom Properties**.

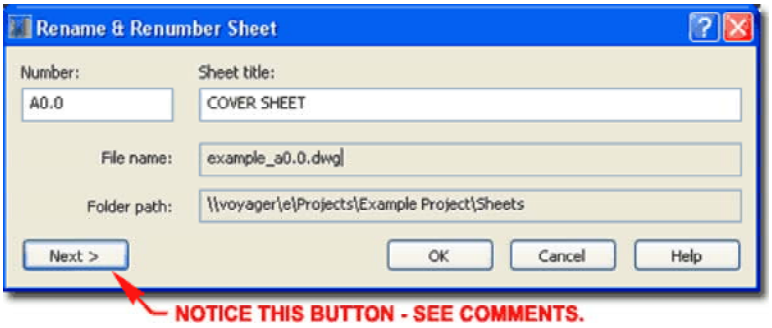


Sheets Tab - Rename and Renumber Sheet

Mouse Highlight a Sheet File, right-click and Select **Rename and Renumber**

Should you find that you need to Renumber and/or Rename one or more Sheets in any Sheet Set (or Subset), **Select** the **Sheet**, **right-click** and **Select** the **Rename and Renumber Context menu** option. If you Select the top Sheet in a Set, you can use the **Next>** button on the Rename & Renumber Sheet dialog to run through every Sheet in a Set.

To **Rename** a Sheet's actual **File Name**, switch the Sheet Set View to **Explorer View** where you can pick twice on any filename or use the Rename option on the Context menu. Be sure to note that most Sheet Files will be displayed with their Layouts.



7 Project Navigator - Annotation

Project Files and Annotation - Overview

One of the most significant questions that many wonder about when taking their first run through ADT's "Drawing Management System", is where to place annotation such as Labels, Dimensions, Tags and Notes. If you haven't already figured out where the makers of this tool think you should place your annotation then I will spell it out: in **View** drawing files. Though this may be the intent, you are not restricted to working that way and you should feel free to place your your annotation in any of the files within the Project Navigator as long as you are willing to deal with some of the consequences.

Of all the various types of annotation, it is the ones that employ Fields that you have to be concerned about. Standard AutoCAD or Aec Dimensions, for example, could be placed in Constructs, Views or Sheet files because they relate directly to Objects. Section bubbles, Elevation symbols, Titlemarks and Detail Callouts, on the other hand, do not derive their values from the Objects but from associations between Named Model Space Views and Sheets. If you don't utilize the system that has been designed into the Project Navigator for working with the value Fields in these "Callouts", you may find that you will need to fill in the Attributes manually.

Views, Title Marks and Sheets

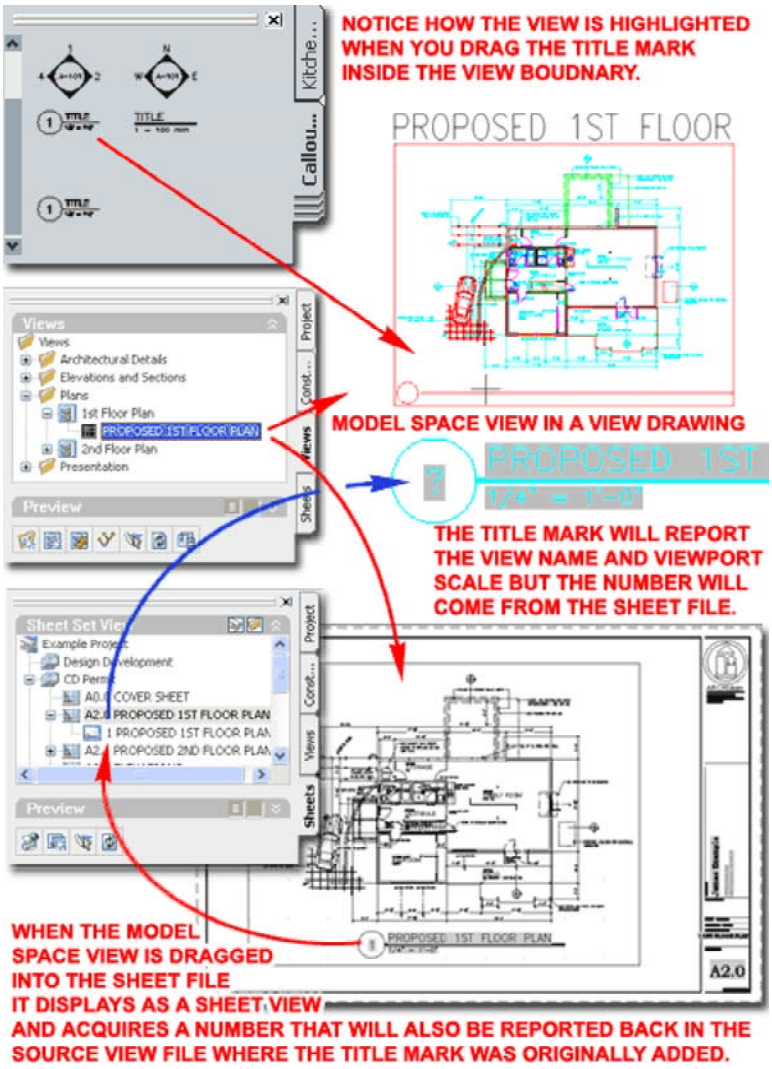
Menu	**N.A.**
	**Callouts** tab
Keyboard	**N.A.**
Browser	Load from Documentation Tool Catalog, Callouts
Links	Part 17 - Documentation - for more information Title Marks and other Callouts.

Architectural Desktop's default **Title Marks** have been designed for optimum performance when used with **Named Model Space Views** and **Sheets**. These Named Model Space Views, even in plain AutoCAD, provide a Name but under the Views Tab of the Project Navigator they also provide a **Viewport Scale**, **Display Configuration** and **Layer Snapshot**.

Illustrated to the right I show that I have a **View drawing** open with an example of a " Proposed 1st Floor Plan" and in this View drawing I have already created one **Named Model Space View** for how I expect to present this plan on a Sheet. Though I cannot see the Named Model Space View, it will highlight on my screen when I drag in one of the default Title Marks. This highlighting effect only occurs if you actually have a Named Model Space View, you are in Model Space and your current screen display is near the Model Space View Boundary. When you move your cursor inside this Boundary, you should notice a red outline as illustrated to the right. When you move your cursor outside the Boundary, you should still see it but in a black color.

If you **place** your **Title Mark** while the **Named Model Space View** is highlighted in **red**, the Title Mark will automatically be associated with the data stored in the Properties of the View. Should you accidentally or deliberately place the Title Mark outside of the Boundary, you can still force the Fields to fill in as they should - use the drag-n-drop solution discussed in the section below.

In the second phase of my example, illustrated to the lower right, I show that I have **Opened** a **Sheet File**. I also show that I have completed the task of dragging the Named Model Space View, discussed above, over to this Sheet file creating a Sheet View. When I dragged the Named Model Space View to the Sheet file, the Project Navigator automatically assigned a Number to the Sheet View and this number is reported in the example Title Mark. The really fascinating aspect of this result is that the Field actually resides back in the View drawing and if you return to that file, you will find the number there as well (where the "?" used to be).



Title Marks, Sheets and Views

Links

Callout Marks and Fields - to learn about how the Fields within these Marks actually do what they do. This is really good information if you find that the drag-n-drop solution fails to make the associations because you can do it manually by working with the Fields.

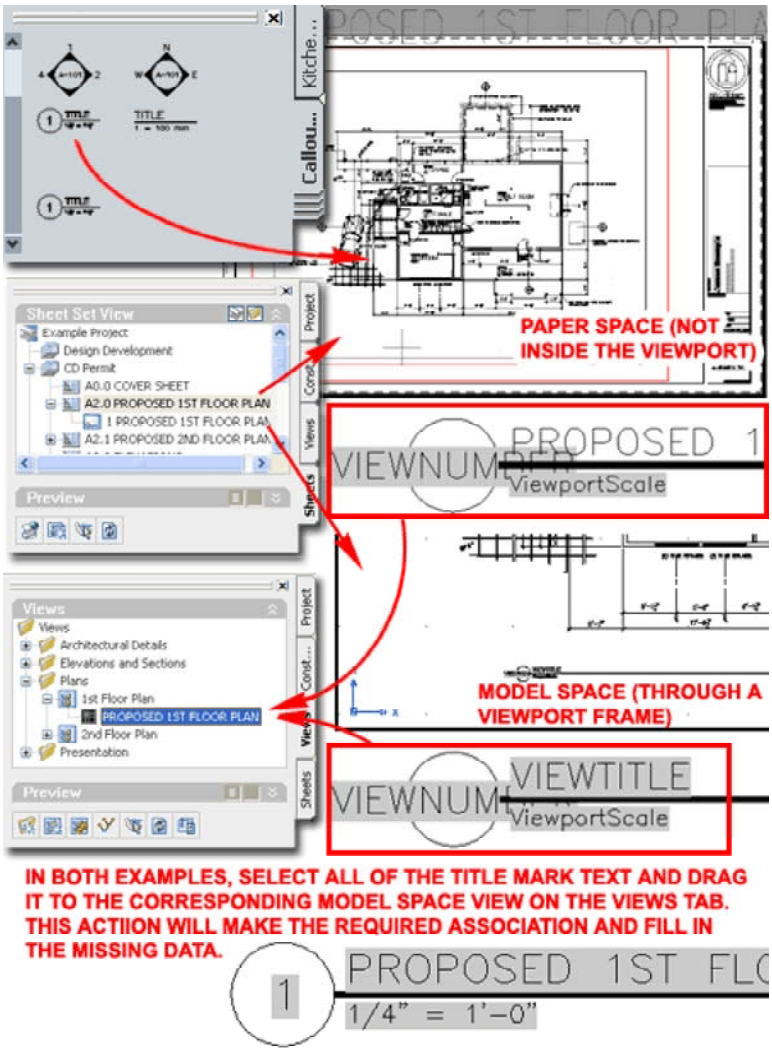
In some cases you may prefer to place your Title Marks directly on the Sheet files instead of in View files. I actually prefer this option because I place my Titles in Paper Space so I don't have to think about their position relative to Viewports and drawing linework.

In the illustration to the right I show that I have **Opened** a **Sheet File** where I have already dragged in a **Named Model Space View** but without any Title Marks. In the first example, illustrated to the upper right, I show that I am in the process of placing a **Title Mark** directly in **Paper Space** over or **outside** the **Viewport**. As with the example discussed above, this action highlights the Sheet View allowing me to associate the Title Mark with the Properties of the Xref'd View. Notice that when I placed this Title Mark, I was able to acquire the **Name** of the Sheet View (typically the same as the Model Space View Name) but the **View Number** and the **Viewport Scale** Fields remain "raw" and disconnected from the data they need.

In the second illustration, lower right, I show a similar set of steps but wanted to show how a Title Mark behaves when you place it **inside** a **Paper Space Viewport** or directly in Model Space. In this case, no Sheet View highlighting occurs and no automatic associations so the Title Mark is completely "raw".

The amazingly simple solution:
In both examples illustrated to the right, the Fields of the Title Marks remain disconnected from the Named Model Space Views they are supposed to link to. To fix this problem, all you have to do is make the association for the Fields and they will report what you expect to see. To do this, **Select** the whole **Title Mark**, carefully **reselect** the Selection Set with the **left mouse button**, hold this button **depressed** and **drag** the entire Selection Set right over **on top** of the matching **Named Model Space View**. When you release the Selection Set on top of the Model Space View you should find that the entire Title Mark fills in as illustrated in the lower right.

Now that you know this trick, keep it in mind when working with other Annotation Symbols and whenever crazy question marks appear where they didn't before. When Fields get disconnected they typically report a question mark "?".



Callouts

Labels, Tags and Dimensions

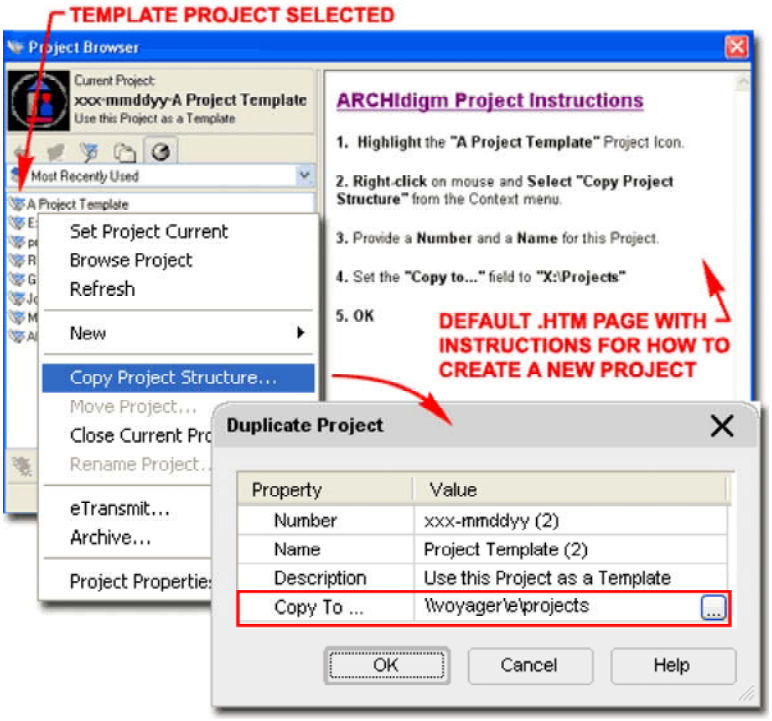
Schedules

8 Project Defaults, Templates and Configurations

8-2.5 PROJECTS

Projects and Templates - Overview

By the time you have come to this section of my writing on Architectural Desktop's "**Drawing Management System**", you should have enough experience with both the **Project Browser** and the **Project Navigator** to realize the importance of template files. If you are jumping straight to this subject, planning to get everything perfect before you start your first Project, I suggest you do some playing/experimenting first. In the sections above I used a Project that I named "Example Project" hoping to inspire you to create a prototype as well. In this section I will elaborate on how to improve your "Example Project" and ultimately turn it into a complete "Project Template" that you can employ to create New Projects. My definition of a "Project Template" is different from the default template settings for a Project (to be discussed below) because what I am referring to is a way to copy a complete project structure using the "**Copy Project Structure...**" context menu option as illustrated to the right.



In the discussion below I will go through the default template settings for a Project and then return to the subject of Copying a full Project Structure. I will start by discussing the AEC Project Defaults tab of the Options dialog where you can define most of the default settings for your Projects. After reviewing the options available for "default settings", I will elaborate on the variety of Drawing Templates and Data based Templates. It has been my experience that you will inevitably return to subject matter like this and refine both your knowledge and what you want to achieve with it so don't feel overwhelmed by the desire to get everything perfect the first time; all of these settings can be refined over time.

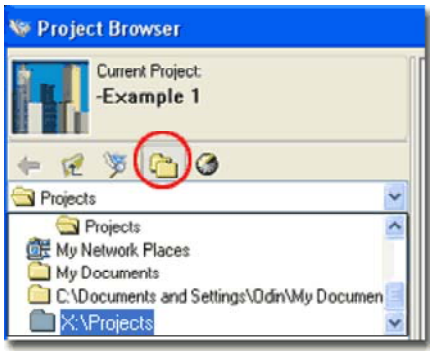
AEC Project Defaults

Menu **Tools> Options...** ("AEC Project Defaults" Tab)

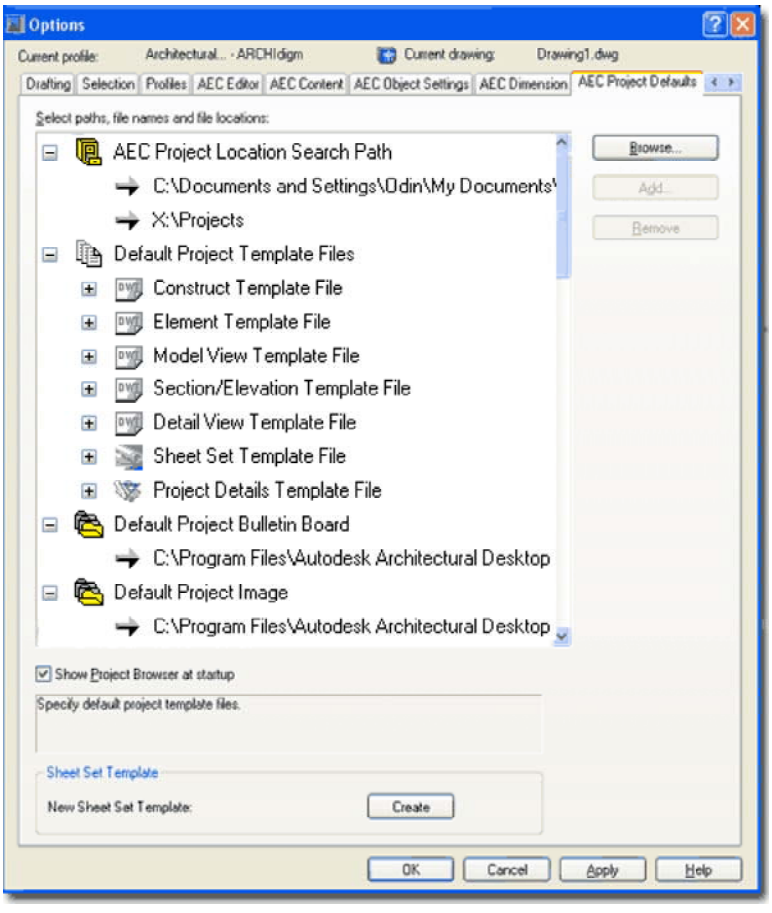
Keyboard **Options (OP)**

Links

Once you are ready to fully implement Architectural Desktop's "Drawing Management System" you will need to use the **Options dialog** box to access the "**AEC Project Defaults**" **tab** where you can specify default Project Paths, Project Template Files, a "home-page" for the Project Browser and a graphic image for your projects.



AEC Project Location Search Path - by using the **Add...** and **Browse...** buttons you can add specific folders to this search path which is similar to the search path options found under the **Files tab** of the **Options dialog**. Though I have read documentation on ADT that claims this search path is important, I have not found any evidence to support that claim. Illustrated to the right I show that I have added a new path to a mapped drive on my server where I created a folder called "Projects". Illustrated to the left I show how this path becomes easier to find within the **Project Browser** using the Folders drop-down list. I also show the default path that was created when I installed ADT and this is a path I should use the Remove button for because it is the last place I will ever place my drawing files (" ...\Autodesk\My Projects").



Default Project Template Files - this section is not only the largest but the most important and I will need to cover this subject in greater detail below. This is where you specify the template drawing files to be used inside the Project Navigator when you create new Constructs, Elements and Views. In addition to these drawing files you have the option to specify two default data files that are used for Sheet Sets and Project Details (information like client name, address, etc). When you get to the

Default Project Image - by using the **Browse...** button you can specify your own custom default project image in .bmp format. This image appears in the Project Header of the Project Browser and is even more "cute" than the option above. If you wish to create your own image, use a 64x64 pixel ratio in .bmp format.

Show Project Browser at startup - check this box if you want to remind

Details (information like client name, address, etc.). When you get to the subject of Sheet Sets, you will find that there are other template files to work with just for print-ready sheet drawing files.

Default Project Bulletin Board - by using the **Browse...** button you can specify a custom **.htm** or **.html** file for the Project Browser's window pane. Things like this are "cute" to me but not really worth a lot of speculation. The idea behind this feature is that managers can utilize web technology to communicate with users about the project and that certainly has its merits. See Default Project Bulletin Board and Project Image for more on this subject.

yourself or your user base that the Project Browser is a tool that must be a part of Project work now. If you check this box you will find that it is similar to having the old "Today" Window appear in earlier releases of AutoCAD; most hated it so much that it finally disappeared. I don't think it is really necessary to have the Project Browser appear at startup when it is rather easy to activate from the Project Navigator or File pull-down menu.

Sheet Set Template - **Create button** - selecting this button is the same thing as using the "**NewSheetSet**" command or activating this Wizard from the Tools pull-down menu. In structure, Sheet Sets are little more than a list of groups called Subsets that may or may not refer to actual Folders (also known as Categories), but the templates also include a list of Properties. To learn more about this subject be sure to read up on the Sheet Set Wizard and review the the bigger story under Project Navigator - Sheets.

Default Project Template Files - Drawing Based

As anyone who has ever created their own drawing template file knows, the work can be daunting and endless; you can input too much, too little or the wrong settings and there are always opportunities for improvements. I say this because you may feel overwhelmed by the fact that there are **six unique drawing template file options** on the AEC Project Defaults tab.

If you explore the default configuration offered by Autodesk, you will find that they kept it pretty simple by using one drawing template file for all of the drawing/modeling files and one for the Sheet files. I think this is a great place to start and you may wish to adopt the same system.

CAUTION!
If your ADT knowledge is fairly limited, particularly with respect to drawing file settings for Display and Layer data, you are better off using one template as the source for all of the others. In other words, get one right and if you want unique ones, Copy it and Rename it. This will ensure that you pass on things like Display and Layer settings which are not passed forward with Xref's. The reason for this caution is that a person could easily use a Construct template file that produces perfect Display results but find that those results cannot be reproduced in the final Sheet file. There is the option to employ the Xref Display Override but that locks you to one Display. Keep this information in mind as you make improvements because one template can get ahead of others if you are not careful.

CONSTRUCT TEMPLATES:
Default **Construct Template -** this template file will be used for the majority of your modeling (drawing) files that represent the primary components of you buildings; everything from Floor Layouts to Roofs and Stairs. I like to think of these files as the ones AutoCAD users have been drawing for years and years now. The information you will need to put into the template file for this type of work will obviously vary dramatically from office to office but the one thing you should definitely not but into this file is sheet-related information like Titleblocks and so forth. This file is meant for use as a model file and as such needs very little. You will need to set your Layer Standard, Layer Key and Display Configurations. The default "Aec Model (Imperial Ctb).dwt", "Aec Model (Imperial Stb) .dwt", "Aec Model (Metric Ctb).dwt" and "Aec Model (Metric Stb).dwt" template files can be a good place to start your own template creations.

For Spanning Constructs, like Stairs, you may want to create a separate Construct template that users will need to select when creating these unique Construct types. For these Construct types you are likely to want custom Display settings such as Up-Down Display Configurations to make Stairs display properly on different floors.

Also, if you find that you often print early schematic design work like I do so I can scribble all over it with markers, I like to add a Print-ready Layout.

Default **Element Template -** this template file will be used primarily for self-contained components (to be used like Blocks) of your primary Construct files; things like work-stations, conference room tables and chairs, trees, cars and so on. The information you will need to put into this file may be exactly the same as what you put into your Construct

VIEW TEMPLATES:
Under the View Templates Category you will find that there are currently three types that may expand in a future release or we may be able to define our own (who knows). So far, however, I have yet to find any significant value to these categorizations other than the fact that you can use different template files and that they do use different icons on the Views tab of the Project Navigator. Callout symbols, for example, don't care if you use a Detail View for an Elevation.

Default **Model View Template -** this template file should actually be renamed to match the title you will see on the Project Navigator's context menu: "General...". The term "General" probably explains what this template is supposed to be used for better; it is simply for View files that are not Section, Elevation or Detail types. You will probably find that this will be the template you will be using for all of your Plan files (Foundation Plan, 1st Floor Plan, Roof Plan, etc.). If you follow the guidelines set by Autodesk you will use this file to do everything that will make the work in one of these files ready for presentation on a sheet of paper; including labels, dimensions, leaders, callouts and so forth. As such, you will probably want to load the template file with your standard annotation settings like Text Styles, Dimension Styles and so forth. If you always use the same size paper and viewport, you may also want to add a rectangle in Model Space that defines the actual limits set by the final sheet file.

Default **Section/Elevation View Template -** this template file is obviously meant for Sections and Elevations which are actually the same thing if you think about it for a second. If you want to take advantage of this template offering, you may want to load it with your standard Callouts for Sections and/or Elevations. If you are up on your Section and Elevation tools, they can be set to produce unique results using options like Color Filtering and Subdivisions.

Default **Detail View Template -** this template file is obviously meant for Details but you can easily broaden the definition as far as you need to. If you are an old AutoCAD user like me you will probably find this whole concept a bit irritating but perhaps you can find compromises that provide new opportunities. The main thing you need to know is that Sheet files only display **Named Model Space Views in Paper Space** while View files only display **Named Model Space View in Model Space**. The Named Model Space View is the key to managing the Fields that hold the data like Sheet Number and Detail Number. A detail created in the model space view of a View file using a View Name can be dragged to a Sheet file's paper space. If you wanted to circumvent this "automation" you would need to Xref your Details to the Paper Space of a Sheet file and then create Named Model Space Views for each one. If you follow the guidelines set by Autodesk you might want to add a standard detail grid to your template as you would expect to show your collection of details on a sheet of paper. You could even predefine Named Model Space Views for each grid with numbers and labels.

Default **Sheet Set Template -** this template file is actually not found on the "AEC Project Defaults" tab though you might be mislead by the "**Default Sheet Set Template**" option. You will need to create an actual Sheet Creation Template file with one Paper Space Layout configured for printing with a Titleblock and so on. This template file will be set on the **Sheet Set Properties dialog** and stored in a separate Sheet Set data file with a ".dst" extension. In other words, you will need to create a Sheet Set Template in which you set your Sheet Creation Template and then you can assign the Sheet Set Template under the "AEC Project Defaults" tab. That might sound

Template file (meaning, you could use the same file) or it may contain less information. I am currently using my Construct template for both just because it is easier to manage and I find no detrimental results from doing this. It would be worse to have a template file that introduces more unwanted data, like odd Layers and so forth.

crazy but that's because AutoCAD has Sheet Sets but not Projects. To read more about Sheet Sets and templates, see discussion directly below and under Sheet Sets.

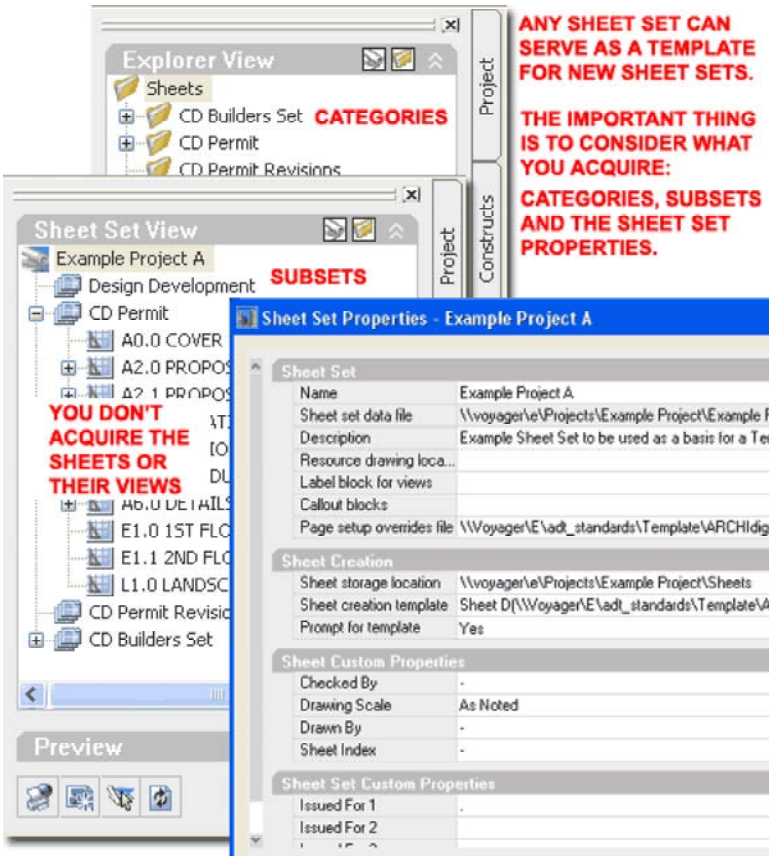
Default Project Template Files - Data Based - Sheet Set Template File

Links
- Project Browser - Add Project - for information on where to set Sheet Set Template and Project Details for a Project that has already been created.
- Project Navigator - Sheets - for information about how sheet set are used in a Project.

The two data based template files under the "**AEC Project Defaults**" tab of the Options dialog do not use .dwg files as a source but unique files types specifically designed for working with the Project Navigator.

Sheet Set Template File - this template file uses a .dst (**D**rawing **S**heet **T**emplate, I think) format which is coded and illegible outside the Project Navigator and Sheet Set Manager; i.e., you cannot open and edit it with other software. Because Sheet Sets are also a feature in AutoCAD this file acts as an independent component of Projects but one could easily get confused and see it as part of the primary Project data file which handles everything else. A Sheet Set Template File starts off with the basic structure of how you want to organize your print-ready sheets (in subsets and/or Categories) and then may grow as a unique file under a Project. See discussion below under Sheet Sets for more information on this subject.

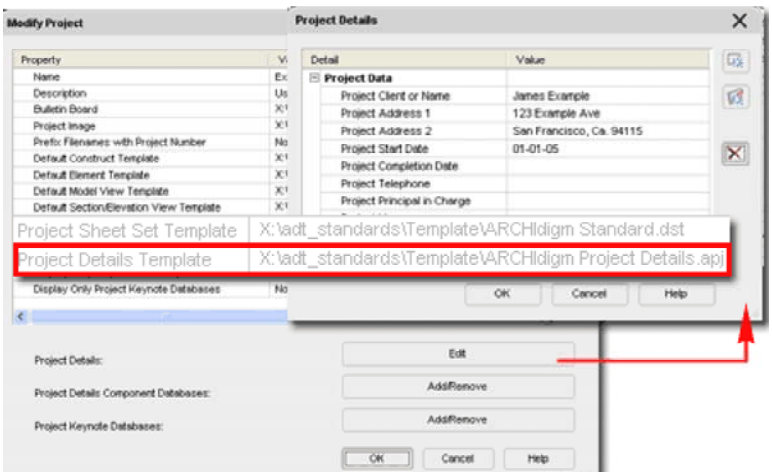
The Sheet Set data file is similar to a the Project data file but only for Sheets. If you think about the fact that Sheets are all that AutoCAD users have, this makes a bit of sense. Take a look at their Sheet Set Manager (type "SSM") if you are curious enough.

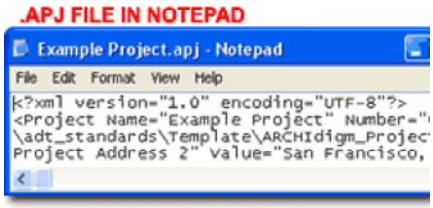


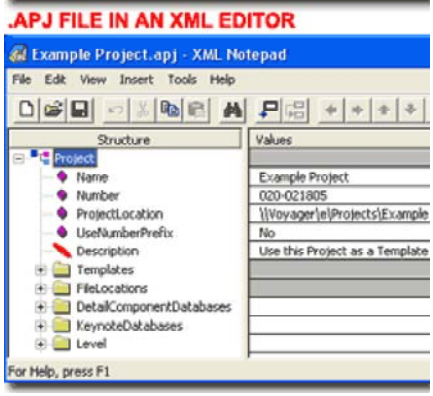
Default Project Template Files - Data Based - Project Details Template File

Links
- Project Details - for information on the Project Details dialog for an active Project.
- Project Details - Captured in a Field - for an example of how to use Project Detail values in drawings.

Project Details Template File - this template file is actually a subset of the primary Project data file which uses a .apj (**A**ec **P**ro**J**ect, I think) format but is written in XML code. I found this aspect rather confusing because the idea of a template file suggests that you are actually specifying a unique and individual file; but, in fact, all you are doing here is specifying that you want to extract the user customizable component of an existing Project data file. Personally, I would have preferred that the customizable portion had been an independent XML. This portion of the Project data file is reserved for customizable Properties and Values that you can organize by Categories. This is where you would create and store

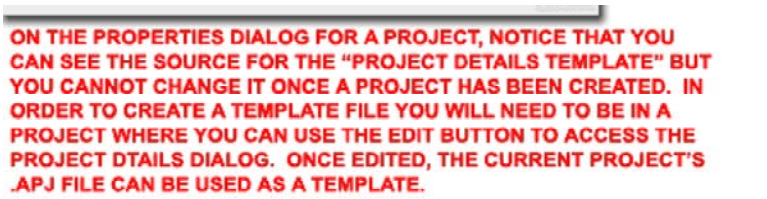






information like the project address, client name, project manager and anything else you can see as relevant to a Project. This information can then be extracted with Fields to automate Cover Sheet data, Titleblock data and so on.

Though it is fairly obvious how you specify a source .apj file to be used as a template for your custom details, it may not be so obvious how you create this file. As stated above it is actually a component of a Project data file so you will either need to create a Project just to define your Project Details or use a "Project Template" that will also act as a source for everything else you need in your Projects (I prefer the latter method).



Illustrated above I show where the **Default Project Details Template file** is picked up on the Project Properties dialog. At the time of creating a New Project, you can change this value to another should you wish to but after a Project has already been created, that is no longer possible. Project Details, are managed through the Project Details dialog which is accessed by the **Edit button** on the "Modify Project" dialog.

Illustrated to the left I show how you can use Notepad or something a bit more appropriate, like Microsoft XML Notepad (free download), to Open, Read and Edit the Project (.apj) data file. In this file, for any Project, you will find a section for the Project Details.

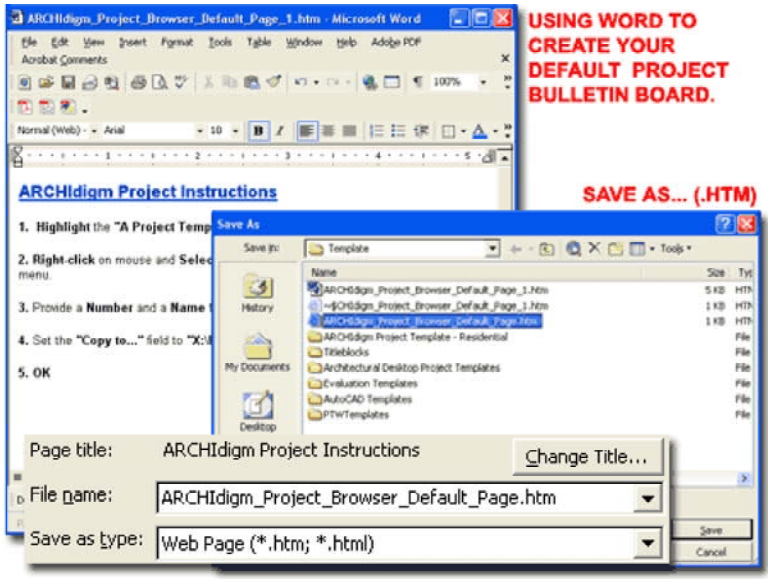
Default Project Bulletin Board and **Project Image**

On the "**AEC Project Defaults**" **tab** of the **Options** dialog you can specify a default Project Bulleting Board (.htm or .html file) and default Project Image (.bmp file 64x64 pixels). At the time of creation or later you can use the Project Properties dialog to specify another Bulleting Board file and/or Project Image.

To be perfectly frank, neither of these two options mean much to me because they don't do much while taking time to create. You may find that you have a different opinion regarding these two options.

If your experience with .html code is limited, you can actually create these file types with **Word** and **Excel**. Illustrated to the right I show an example of a standard default Bulletin Board I created with Word. By using the **Save As...** option in Word, you can set the "**type**" to "**Web page (*.htm; *.html)**" and that's basically all you have to do. You can use Word's **Insert pull-down menu** to add **Hyperlinks** that lead to other .htm pages in your intranet or the whole internet. You can also add Hyperlinks to other documents in any format that apply to the user's machine; i.e., a Hyperlink to a CAD file in .dwg format will open that drawing file their AutoCAD or Architectural Desktop.

Neither the Default Bulletin Board nor the Default Project Image files are copied to New Project Folders and thus point back to the default location. Though this may have its advantages, overall I see this as a flaw. For CAD Managers who want to use one Default Project Bulleting Board but allow for individual Bulletin Board growth for each project, you can create a generic cover page with relative path Hyperlinks to .htm pages that can be placed under individual Project Folders later on - this will require manual work to create or copy those files.



The **Project Image** file can be created with just about any graphics software program, including AutoCAD and ADT (type "**bmpout**"), but using a program that allows you to set a 64x64 pixel ratio will produce the cleanest results. If time was not a factor in our daily lives, these images help to distinguish one project from another when viewed on the Project Browser but other than that, they do absolutely nothing for you. If you want to change the default image to something that is of greater interest to you, you can use any image in the .bmp format regardless of the ratio but whatever you select will be squeezed into a 64x64 pixel rectangle.

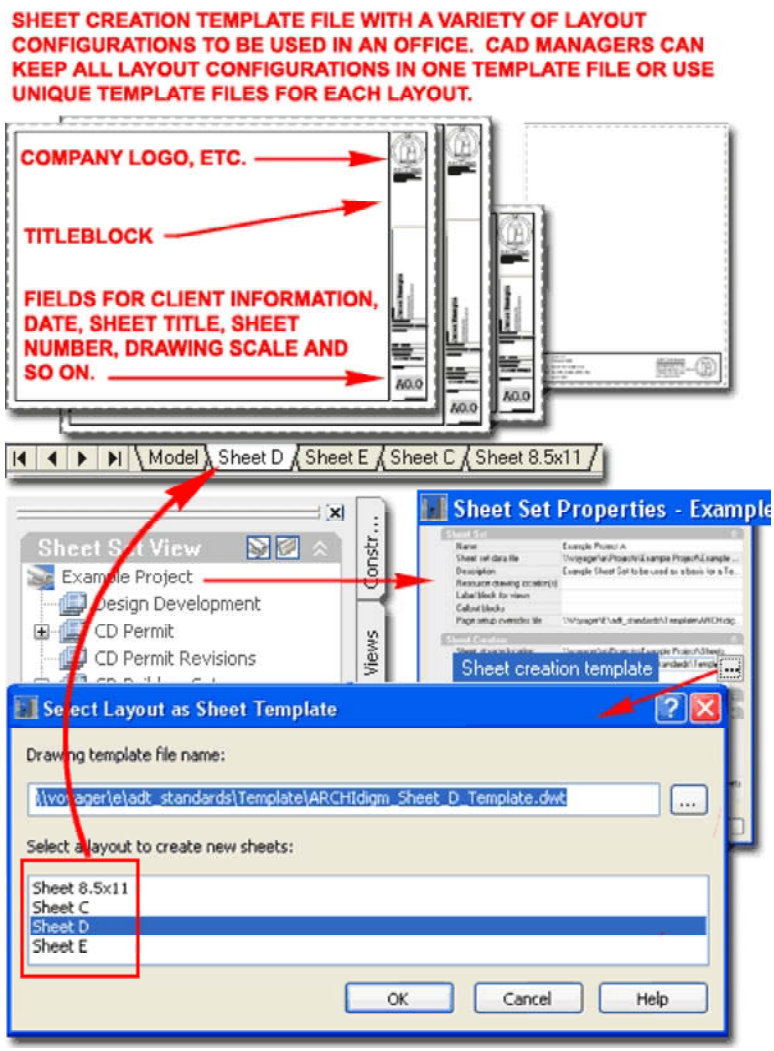
Sheet Creation Template file

The Sheet Creation Template file can probably be classified as the first or second most important template file you have in your collection. Because of the odd terminology in ADT you can easily confuse this file with the Sheet Set Template File but the Sheet Creation Template file is actually a component of the Sheet Set Template File; i.e. it is specified on the Sheet Set Properties dialog rather than under the "**AEC Project Defaults**" **tab** of the **Options** dialog. This means that when you specify your Default Sheet Set Template File you must consider what it points to for the Sheet Creation Template file.

One of the first observations you may make when preparing to do all of the work required to take advantage of this feature, is that you can only specify one Sheet Creation Template. The problem is that most offices use more than one Sheet Size and Print to a variety of Printing devices ranging anywhere from 36x48 to 8.5x11 and thus need ready access to a list of common Sheet Sizes. CAD Managers can use a Project Template, as discussed below, to configure Sheet Categories that point to different default Sheet Templates or set the Sheet Categories to "Prompt for Template" as a means to assist with this limitation.

Some CAD Managers have already developed one template file that offers one Paper Space Layout for each Sheet Size and corresponding Titleblock. Illustrated to the right I show an example of one Sheet Creation Template File with several Layouts configured for different sheet sizes with different titleblocks, Fields, and so on. When this type of template file is specified for the Sheet Set Template only one of the numerous Layouts can be employed for the Sheet Creation default. However, as illustrated below right, when a Project has been created you can use the **Sheet Set Properties** to change the default Layout to any offered in this Sheet Creation Template File.

You will find that you can also use the Properties dialog for Sheet Sub-sets. This means that you can actually have one Sheet sub-set using a different Layout from the same Sheet Creation Template file as another. In my office we tend to do most work on 24x36 ("D") size sheets so that is our default but in those cases where unusual paper sizes are needed, we simply change the default Layout, create the Sheet and then set the default Layout back to the standard paper size.



Sheet Set Wizard

Alt.Menu	**Tools> Wizards> New Sheet Set...** - if using the AutoCAD Tools pull-down menu
	Create button on **AEC Project Defaults tab** of **Options dialog**
Keyboard	**NewSheetSet**
Links	

The **Sheet Set Wizard**, in my opinion, is actually more of a tool for AutoCAD users than for Architectural Desktop users. Though it can be used to solve interesting problems that I will discuss below, I feel that its primary purpose is to migrate legacy files into a Sheet Set format as illustrated to the right.

PAGE 1
Illustrated to the right I show the steps involved for using the Create Sheet Set dialog pages to collect a legacy set of drawing file Layouts and assemble them into a new Sheet Set (.dst) file. On this first page of the Sheet Set Wizard I show that I have Selected the "**Existing Drawings**" radio button and then used the **Next>** button to access the second page. As you can see on this page, you can also choose to create one from "An example sheet set" and I will discuss that approach in the next cell below.

PAGE 2
Name of new Sheet Set - On the second page of this Wizard I show that I have typed in a **Name** for my new Sheet Set. Be aware that the Name you specify here is exactly what the "**.dst**" filename will be so in this example the file will be named "Example Sheet Set.dst" when viewed with Explorer.

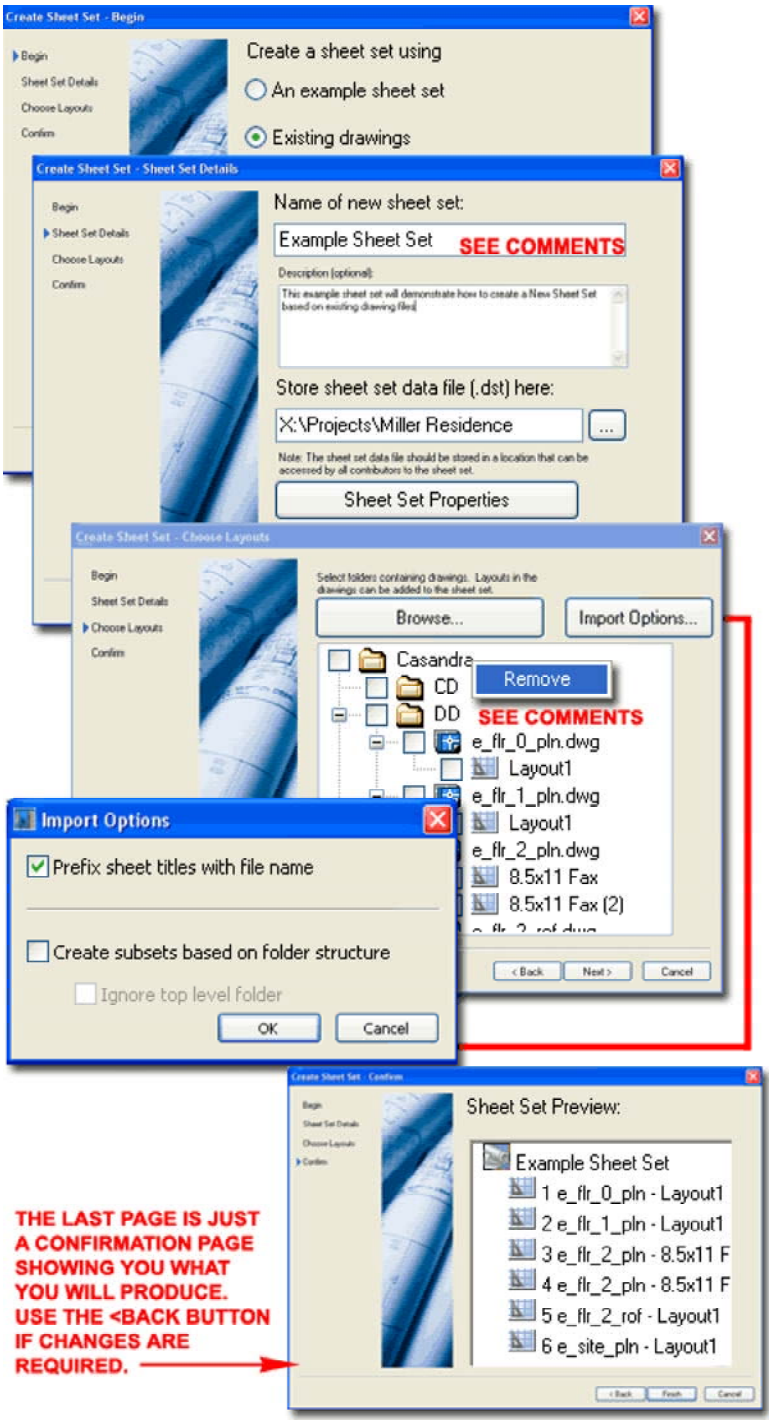
Store sheet set data file (.dst) here - You can actually store this (.dst) file anywhere on your system or Network but I recommend you place in a logical location like the same folder where your project files are being stored. When you create Projects with the Project Browser, the .dst file is always placed in the root folder for the Project.

Note: If you are one of those clever CAD people trying to use this tool to fix a bad .dst file in an existing Project, be aware that if the .dst filename is already present in the designated location, this tool will not allow you to overwrite it.

Sheet Set Properties - use this button to access the Sheet Set Properties dialog which is the same dialog that you can access on the Sheet tab of the Project Navigator. See comments below under Sheet Set Properties for more information.

PAGE 3
Browse... - use this button to access folders on your local system or network. Be aware that when you **Select** a **folder** this tool will automatically include **all sub-folders** and any drawing files within them. Also, this tool automatically accumulates Selections made with the Browse... button so you can browse numerous times to be very specific about the various folders that you want. In the illustration to the right I show how you can use the "**Remove**" **context menu option** to **deselect folders** and drawing files. Though you can include multiple Paper Space Layouts from one drawing file, Architectural Desktop's Help menu strongly discourages you from doing so because that could create a situation where two or more users access the same file without knowing it (due to the fact that Layouts look like separate files on the Sheets tab of the Project Navigator).

Import Options... - use this button to access the small **Import Options dialog** illustrated to the right. This dialog offers the option to "**Prefix sheet titles with file name**" which simply means that when the Paper Space Layouts are presented as Sheets in the Project Navigator, they will also show the drawing's filename. I am not sure I like the extra clutter with this option but it sure helps for clarity. This dialog also offers the option to "**Create subsets based on folder structure**" which means that if you Select files from different folders they will be organized into logical subsets on the Sheets tab. Subsets are not physical folders but simply



PAGE 4 (last page)
Sheet Set Preview - the last page in this Wizard provides a "Preview" of what the Sheet Set might look like in the Project Navigator and some statistical information that you can review for accuracy. There are no changeable options on this last page but you can use the **< Back** button to go all of the way back to the beginning.

Note:
When you have completed the work of creating a new Sheet Set you have actually only created the .dst file. To truly complete the work and create .xml files for each drawing associated with the Sheet Set, you must Open each file in the Sheet Set and Save it

In my opinion, ADT users are better of using the Project Browser and the Project Navigator with its access to Sheet Sets as a means for creating new Sheet Sets than to bother with this "Wizard". When you create a Project, you can use the Sheets tab of the Project Navigator and **drag-n-drop** drawing files

organizational tools for grouping and should probably be used if you are Selecting files from all over the place. The final option to "**Ignore top level folder**" is only available under the "subsets" option and helps to remove one level of folders when creating subsets so you don't have subsets of subsets (which may occur anyway depending on how and where you are Selecting drawing files).

to it and organize them on-the-spot. To do this, switch the **Sheet tab** view to the **Explorer View** so you can interact with the **Microsoft Explorer** and the Sheet folder(s). See Sheets tab - Import Sheets for a graphic example of how to do this.

Sheet Set Wizard - Create from an Example Sheet Set

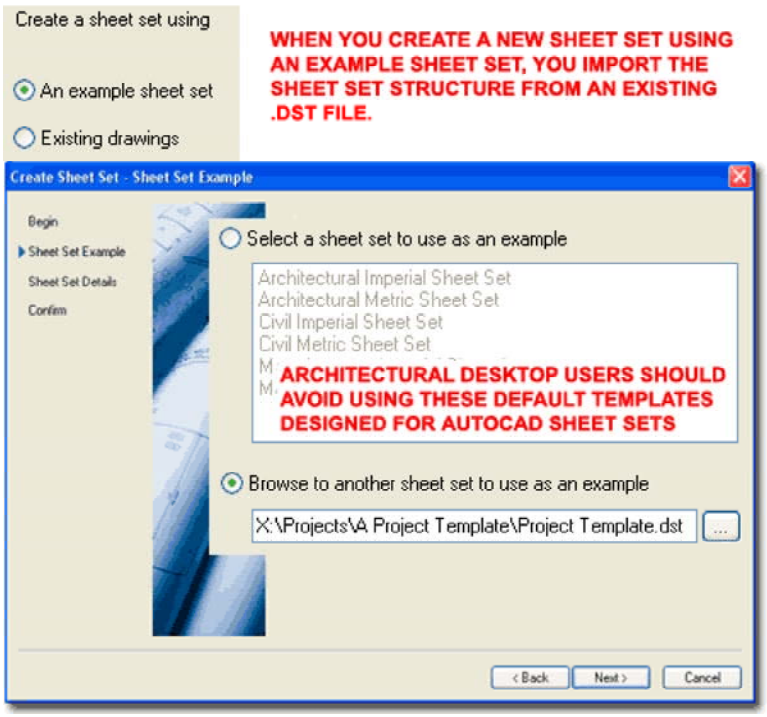
You can use the Sheet Set Wizard to create a new Sheet Set based on any that already exist. In essence, this is really a method for using one Sheet Set as a template for another.

PAGE 1
On the **first page** of the **Create Sheet Set dialog**, illustrated to the right, I show that I have Selected the "**An example sheet set**" radio button and then used the **Next>** button to access the second page.

PAGE 2
On the **second page** of this Wizard I show that I have used the "**Browse to another sheet set to use as an example**" radio button which I recommend that all Architectural Desktop users employ as a default. If you Select any of the example Sheet Sets on this page you will find that they have all been configured for use in regular AutoCAD and though the information stored in those Sheet Sets probably won't harm your ADT work, they tend to contain data you don't need. If you want examples to start from, use the "Browse..." option and look for the "Aec Sheet Set...dst" templates that come with ADT. These are typically found under the following path: "C:\Documents and Settings\All Users\Application Data\Autodesk\ADT 2005\enu\Template

PAGE 3
See discussion for **PAGE 2** (not PAGE 3) above.

PAGE 4
See discussion for **PAGE 4** above.



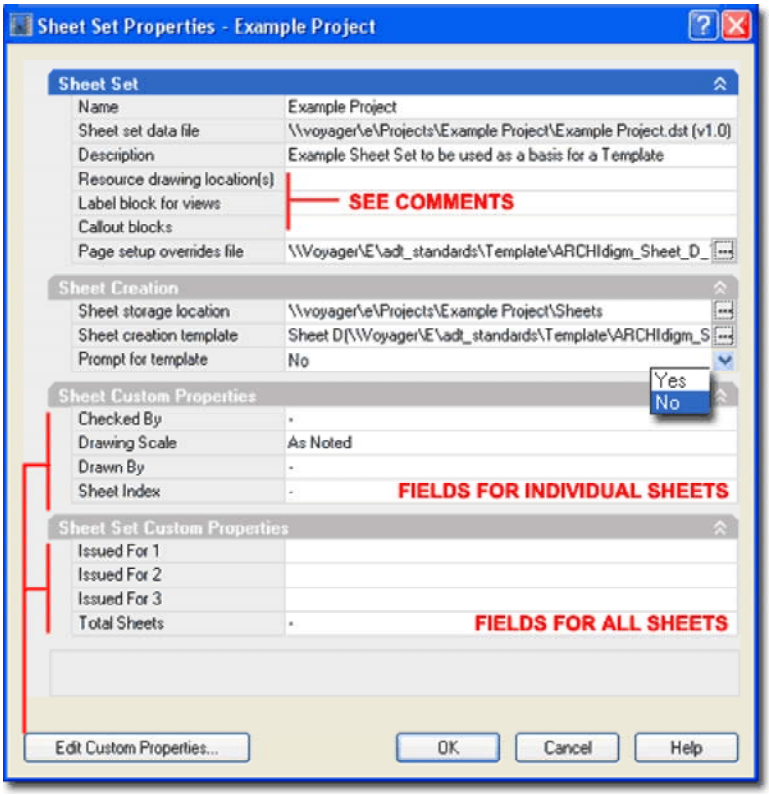
Sheet Set Properties

Sheets Set Properties, accessed by right-clicking over the main Sheet Set icon in the Project Navigator (Sheet View not Explorer View), provide a multitude of options specifically for these print-ready sheets. As with View drawings, Constructs and Elements, Sheet drawings use a "Sheet creation template" in which you should place things like a Titleblock. Another important feature of the Sheet Set Properties dialog, illustrated to the right, is the option to add unique "**Custom Properties**" that are similar to Project Details but meant for tracking data relative to Sheet Sets or individual Sheet files.

SHEET SET
Name - use this value field to change the name of the current Sheet Set but be careful not to create confusion for yourself and others. When a Project is created, the Sheet Set is automatically Named and a matching data file (.dst) is created. Renaming the Sheet Set does not rename the data file so you can see how this might cause some unnecessary confusion. Another important aspect of this Name field is that it is not the name of the folder in which the Sheets are stored. The **root folder for all Sheets** is named "**Sheets**" and cannot be changed but you can create unique sub-folders (referred to as Categories) with unique names and then create unique Sheet subsets that point to these sub-folders.

Sheet set data file - though this field is not open for change it does indicate where the current Sheet Set (.dst) file is stored allowing you to check for errors. In ADT, this file should always be in the root folder for your Project.

Resource drawing location(s) - this field is actually tied to the **Resource Drawing Location dialog** in which you can **Add** and **Delete** folders. These folders represent the path locations in which the Sheet Set Manager (SSM) will operate for the current assembly of Sheet files. Since the Sheet Set Manager is primarily for AutoCAD users who don't have the Project Navigator and don't have to live by its rules, they can use



Sheet creation template - this is probably the most important setting on the whole dialog box because it sets the default template file for all of your sheets. To optimize your productivity, you will need to create a template file (.dwt) with a single Layout that is completely configured for the most common

this to define "path boundaries". For Architectural Desktop users, I have not found any need to use this feature but you never know what might come up in the future. I recommend leaving this field blank.

Label block for views - this location field provides AutoCAD users with the ability to set a path to a unique folder in which their Label Blocks with Fields are kept. Architectural Desktop users pull their Labels from the Content Browser and the data is typically derived by interaction with View drawings. I recommend leaving this field blank.

Callout blocks - see comments for "Label block for views" above. I recommend leaving this field blank.

Page setup overrides file - this file field provides the option to set a special template file for use when **Publishing Sheet files**. Because Sheets are derived from Template files they will only offer the option to print according to the current Layout configuration but by using Page Setup Overrides you can change how one or more Sheets are Printed. See "**Publish - Page Setup Overrides**" for more.

SHEET CREATION

Sheet storage location - though this location field offers the option to place your sheet files anywhere on your system or network, that would not be such a good idea when working with the Project Navigator. This location field is really designed for AutoCAD users using the Sheet Set Manager (SSM) who have the freedom to place sheet files wherever they want because they don't have a Project Navigator and all of its features. To check this field, make sure it points to the "Sheets" Folder under the current Project.

printing you do. This file should contain all of your standard titleblock information including company logo, company address and numerous attributed Fields for things like Client/Project Name, Date, Scale, Sheet Number and so on. In the event that you need a different template when you create some of your Sheet Files, you will find that you can Override this setting by working with the Properties of Subsets. See Sheet Creation Template file for more information on this subject.

Prompt for template - this option can be set to "**Yes**" or "**No**" only. When set to "Yes" users will find a terribly annoying "**Select Layout as Sheet Template**" **dialog** box every time they create a New Sheet. Now if this dialog could be programmed to contain a set of pre-selected template files that an office might typically use, it would be far more helpful. My suggestion is to not use this option but to create Subsets that have been set to other Sheet Template Files if you want something like this option.

SHEET CUSTOM PROPERTIES

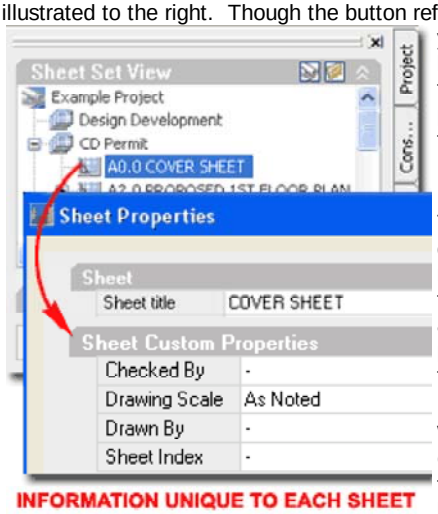
These value fields are available as unique fields for **individual sheet files** unlike the "Sheet Set Custom Properties" which affect all Sheet files equally. To test how this actually works, Select a Sheet file on the Sheets tab of the Project Navigator, right-click and check its Properties. Here you should find the same list of value fields and you can set them uniquely for the current Sheet file. You can also extract this information using Fields that point to the "Sheet Set" field category and the "CurrentSheetCustom" field name.Comment: add image to explain how to do this

SHEET SET CUSTOM PROPERTIES

These value fields are available as unique fields for **all of the Sheet files** so you would use these fields for things common to all your sheets; things like "Issue Date", for example. With these value fields you can affect the entire collection of sheet files from one point at any time. To extract information from these value fields you will need to create a Field that points to the "Sheet Set" field category, "Current Sheet Set Custom" field name and then look under the "custom property name" drop-down list for matching names.

Sheet Set Properties - Custom Properties

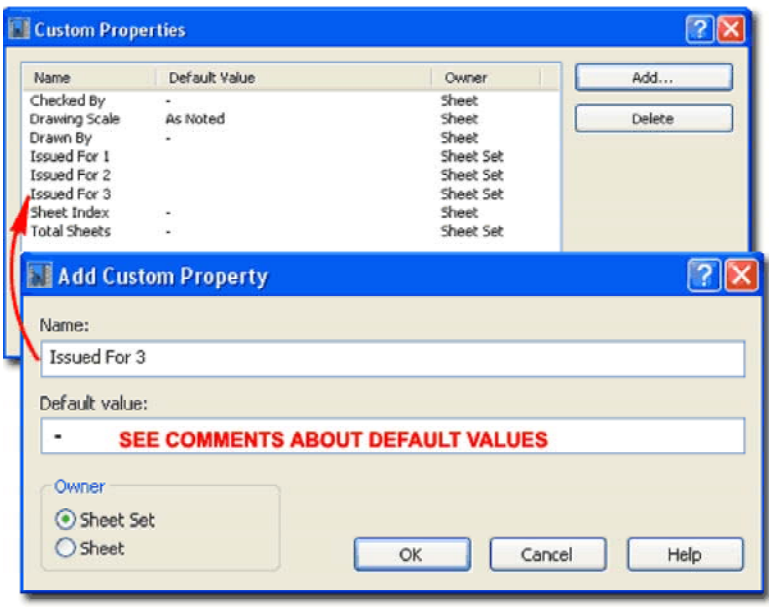
From the **Sheet Set Properties dialog** you can use the "**Edit Custom Properties...**" **button** to access the "**Custom Properties**" **dialog** illustrated to the right. Though the button refers to "Edit", the only thing you can modify after you have Added a Property, is the Default Value - double pick in the Default Value field as if you wanted to Rename it.



To "edit" other components of a custom Property you will need to "Delete" it and use the Add... button to create again - thanks a lot to the programmer who wrote this feature ;)

When you decide to Add Custom Properties, be sure to recognize that this dialog box stores Properties for "**Sheet Sets**" and for individual "**Sheets**" - see comments above for explanation of the difference. Be sure to set the correct radio button under "**Owner**" before picking the **OK** button.

Illustrated to the left I show how Custom Properties set for individual Sheets are access and modified via the **Sheet Properties dialog**.



Note:

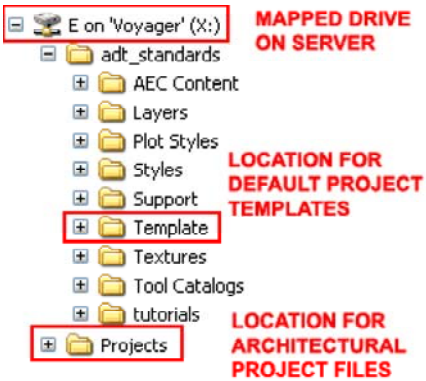
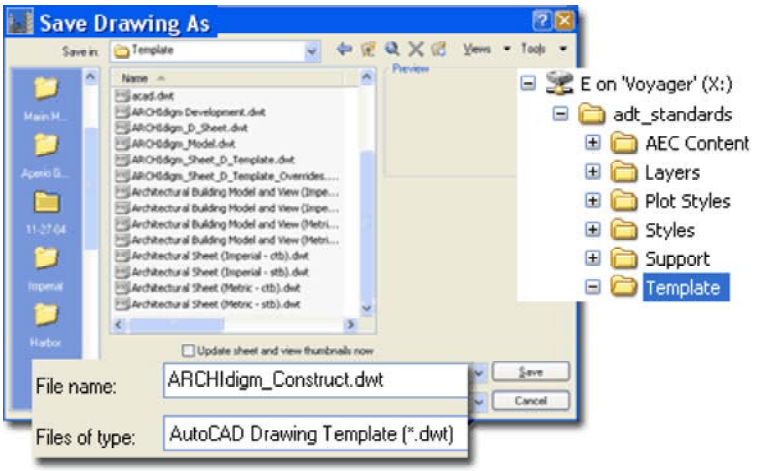
In many cases I prefer not to have those odd "." or "-" characters on my drawings wherever some Attribute or Field needs to be filled in. I attempted to use blank "Default values" under the Add Custom Property dialog only to discover that this produces "- - - -" on my drawings which is even worse. Therefore, I suggest you use as single dash ("-") or dot (".") and hope that someday we can have true blanks.

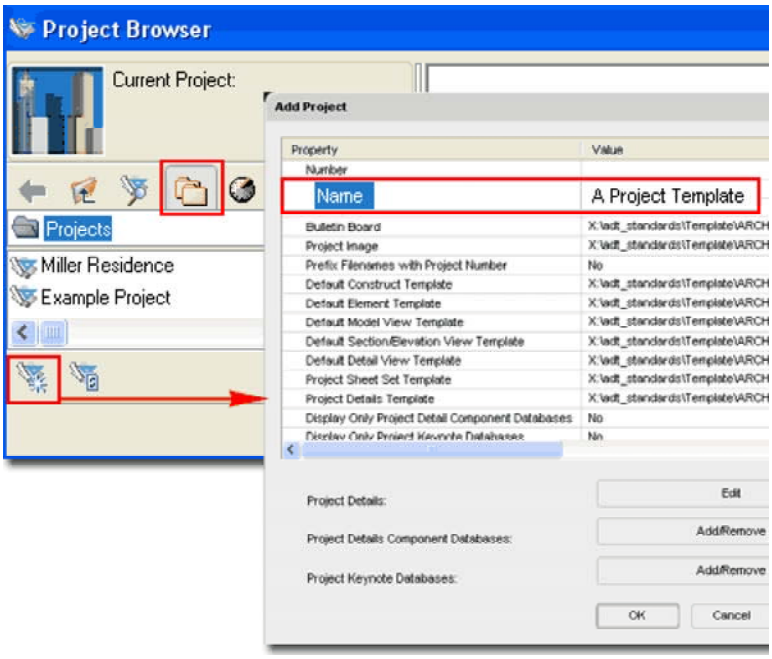
10 Creating A Full Project Template

10-2.5 PROJECTS

Configure a Project in 15 Steps

Because there is so much information to think about in the sections above I decided to create a more simplified explanation in a step-by-step approach. The only problem with this tactic is that in order to keep the steps simple I have to refer back to the sections above and that may have you yo-yoing a bit.

1	**Folder Structure** Use an existing "Template" folder or create a new folder for storing and managing all of the **Default Project Template Files**. CAD/IT Managers will want this folder to be on a Network Server while non-Network users may wish to continue using the default folder found at: "C:\Documents and Settings\All Users\Application Data\Autodesk\ADT 2005\enu\Template". Decide on where you will want to store all of your Project Drawing Files. This can easily be the same folder you have been using in the past or you may want to create a new one.	
2	**Constructs Template File** Create a new drawing based on your current standard template or use one of those supplied with ADT; like the "Aec Model (Imperial Ctb).dwt" file or the "Aec Model (Metric Stb) .dwt" file. You can update this template file over time and improve it as you start to see the need. Save this file to the Template folder in Step 1 as a template using the .dwt extension (found on the Save As... dialog). You may want to use a Name like "Your_Company_Name - Construct.dwt"	
3	**Elements and Views Template Files** In this step you will need to address all of the other drawing template files you can assign as defaults for use in the Project Navigator. The problem is that you may not have the time or the knowledge to make them at this time so you can either use the same template file created in Step 2 or use the Save As... option to quickly create Copies with unique Names. If you take the second option you can assign the individual template files later on (below) and then modify any of them when you find the need and knowledge to make appropriate changes.	There are four of these template files: one for **Elements** and three for the **General**, **Section/Elevation** and **Detail Views**. You may want to use a Names like "Your_Company_Name - Element.dwt", "Your_Company_Name - General View.dwt", "Your_Company_Name - Section-Elevation View.dwt", "Your_Company_Name - Detail View.dwt"
4	**Sheets Template File** Create a new drawing based on your current standard template for **printing** or use the file created in Step 2. For this file you will need to work on one Paper Space Layout and configure it for the most common Paper Size and Plotter in your office. You may also want to create other Page Setup Configurations if you print the current Paper Size to different printing devices; even .dwf or .pdf. On the single Paper Space Layout draw your Titleblock or Paste it from an existing drawing file. You may want to take this opportunity to include Fields for extracting data from the Project Properties, Sheet Set Properties and Sheet Properties.	Save this file to the Template folder in Step 1 as a template using the .dwt extension (found on the Save As... dialog). You may want to use a Name like "Your_Company_Name - 24x36 Sheet.dwt" If you use multiple Paper Sizes and Plotters, you can create unique Sheet Template Files for each requirement that users can Select when creating their Sheets. You can also have different Sheet Set Templates and different Project Templates depending on how serious your needs are. I recommend keeping it simple in the beginning.
5	**Optional:** Create another Sheet Template File that will store all of the various Page Setup Configurations that you may use in your office. This file can be used as the source of "Page Setup Overrides" later on and can prove to be quite useful when Publishing large jobs. You may want to use a Name like "Your_Company_Name - Sheet Overrides.dwt"	See Publish - Page Setup Overrides for more information on how to create these and how to use them in a Project.

6	**AEC Project Defaults** On the **Options dialog** (OP) go to the **AEC Project Defaults tab** and expand the "**Default Project Template Files**" section. Assign the Template Files you created in Step 2 and 3 for the **Construct**, **Element**, **Model View** (General), **Section/Elevation View** and **Detail View** templates. If you only created one Template File for the Constructs, assign it to each of the categories listed above.	Don't worry about the Sheet Set and Project Details Templates because we will return to that subject later in these steps. See AEC Project Defaults for more information on this tab on the Options dialog box.
7	**Project Browser** Activate the **Project Browser** (ProjectBrowser) and use the Folders icon to point it to your primary Projects Folder - discussed in Step 1. While in the Project Browser, create a **New Project**, Name it "**A Project Template**" so it will stay near the top of the stack in Explorer. Note: you can name it whatever you want but I will refer back to this name. While on the "Add Project" dialog, review the "Default Template...File" assignments and confirm that they match what you set as "Defaults" in Step 6. Keep the Project Properties dialog Open. If you accidentally used the OK button, return to this dialog by right-clicking over the Project Name and Selecting the Project Properties... context menu option.	
8	**Project Details** On the Project Properties dialog, use the **Edit button** to access the "**Project Details**" **dialog** and spend a few minutes creating some the basic information you will want for your Projects; such as Client information, address, etc. The most important information will be the items that you will use Fields to extract on your Titleblocks. With time, you may also be able to create some information that will help to fill out your Cover Sheets but this can be improved upon later.	Use the **OK button** and exit the Project Properties dialog. Use the **Close** button on the **Project Browser**. See Project Details for more information on how to add details and categories. See Project Details - Captured in a Field for information on how to use Fields to extract the data stored under the Project Details.
9	**Activate Project Navigator** **Closing** the **Project Browser** in Step 8 should automatically **activate** the **Project Navigator Palette** for the current Project. Confirm that your Project Navigator is set to "**A Project Template**" as created in Step 7. If you did not activate your Project Navigator, return to the Project Browser, double-pick on the "A Project Template" and use the Close button.	See Project Navigator Palette - Project Tab Overview for more information on the Project Navigator Palette.
10	**Levels and Divisions** On the **Project tab** of the **Project Navigator** you may or may not want to Add anything. At the end of these steps I will discuss two options for creating new Projects based on templates; one will not read any of the information you may specify for Levels and Divisions and the other method will reproduce all of the information you specify here.	Most of my projects, for example, involve working on a 1st Floor so I have one Level with a Name of "Flr 1" and an Elevation of "0". Since I am still experimenting with Division settings I have not decided on a default and leave this feature blank. See Project Navigator - Project Tab - Levels for information on working with Levels. See Project Navigator - Project Tab - Divisions for information on working with Divisions.
11	**Constructs** On the **Constructs tab** of the **Project Navigator** you will most definitely want to **Add** some standard **Categories** (Folders) for organizing your primary building components. Since most of my work involves existing structures I have one Construct Category for "Existing". Because I usually take the existing files and try a variety of design options with them, I	Under the **Elements Folder** you may want to **Add** some standard **Categories** (Folders) as well but these can be more difficult to predict and usually develop over time as a building evolves. In one of my customizing and tricks examples below, I show that I use an Element Category for "Sheets" that stores items that I typically drag to my various Sheet Files; like the Titleblock, general notes and so on. You may want to create Categories for "Furniture", "Site" and so on.

	have another Construct Category for "Design Development". For the final phase of work I have another Construct Category for "Proposed" but depending upon the complexity of the structure, this Category may be branched into sub-Categories such as "Floors", "Stairs", "Slabs", "Roofs", "Structural" and so on.	**Note:** You should also consider how you have been using Folders in Explorer to manage your Projects before using this "Drawing Management System". You may want to Add Construct Categories for sub-contractors such as Structural Engineers, Landscaping and so on. See Project Navigator - Constructs Tab - Overview for examples of Categories.
12	**Views** On the **Views tab** of the **Project Navigator** you will probably want to **Add** one or more **Categories** (Folders) that you may use for View Files. The problem is that the Categories you will need will not be obvious until you have used them on several jobs so don't feel pressured to figure it out now - this can be improved upon later. View drawing files have been designed to act as a preparation stage between your actual model files and print-ready sheets. One of the best examples of how to employ a View drawing file is to consider what it takes to create Sections and Elevations; you need to create a composite file of all the Constructs and then cut or project the "view". If you use a View drawing file to do this work, you can drag one or more of these Section or Elevation "views" to a print-ready Sheet.	When you create New View Drawings, you will find that you can choose between three types: General, Section/Elevation and Detail. You may want to Add Categories to match those types. For my work I typically have Categories (Folders) for "Plans", "Sections and Elevations", "Details", "Schedules" and so on. The organization has everything to do with how you manage your drawings in your office so don't be concerned about what others tell you "should" be done. One Category that you will probably be sure to Add is one that I call "Presentation" and this is where I store my master composite file(s) for general study and for linking to VizRender. See Project Navigator - Views Tab - Overview for examples of Categories.
13	**Sheets** On the **Sheets tab** of the **Project Navigator** activate the **Sheet Set Properties dialog** and assign the "**Page Setup Override File**" if you created it in Step 5. Otherwise, you may want to set this path to the same template file as that for your Sheet Files (created in Step 4). The "**Default Sheet Storage Location"** should point to the "Sheets" folder of the current Project so no changes should be necessary there. For the "**Sheet Creation Template**", assign the Template file created in Step 4. The "**Prompt for Template**" would typically be set to "No" mostly because it confuses the heck out of users who don't understand any of this stuff. You may need to use the "**Edit Custom Properties...**" **button** to create a list of Properties with or without default Values that are specifically meant for use on your Sheet Files. Again, you can add complexity like this later once you have the time.	Use the **OK button** to exit the **Sheet Set Properties dialog**. While still on the Sheets tab, change the **View** to the "**Explorer View**" and **Add Folders** that you would like to use for different print-ready Sheet Files. Change the **View** back to the "**Sheet Set View**", **Add Sheet Subsets** that match the Folder Names and use the ellipses button to point the "**Store new Sheet DWG Files in**" to the correspond Folders that you just created under the Explorer View. This work is incredibly useful to maintain separation between print-ready sheet files as they are created and used during a Project Cycle. For me, for example, it is not uncommon to have Sheet Files with the exact same names as they were used during phases such as Client Reviews, Structural Consulting, Permit, Permit Revisions and so on - this is only possible by using separate Folders. See Sheets Tab - Subsets and Categories for more information on Subsets and Categories; how to create them and how to associate Subsets with Categories.
14	**AEC Project Defaults** All of the work done in the Steps above was saved into two important files under the active Project that I referred to as "A Project Template". You should be able to find this Folder with Explorer and see the two files I will discuss below. On the **Options dialog** (OP) go to the **AEC Project Defaults tab** and expand the "**Default Project Template Files**" section. We set some of the default template file paths in Step 6 but now we can add more.	For the "**Project Details Template File**" path assign the "**A Project Template.apj**" file from the "A Project Template" folder. For the "**Sheet Set Template File**" path assign the "**A Project Template.dst**" file from the "A Project Template" folder. **Note:** See AEC Project Defaults for information about the **"Default Project Bulletin Board"** and the **"Default Project Image"** settings.
15	**Testing** If you did not make any mistakes in the 14 Steps outlined above, you now have a completed "Project Template" that not only serves as a place to improve your settings as you find better solutions but acts as a source for two approaches to creating new Projects. Because of the work you did on the "AEC Project Defaults" tab, you should now find that when you create a **New Project** on the **Project Browser** all of those templates will be used to create the new Project. What this approach to creating new Projects will not provide are the settings you made on the Projects, Constructs and Views tabs of the Project Navigator because those settings are considered unique to that Project. You can, however, use another approach and acquire all of those settings.	On the **Project Browser**, **highlight** the "**A Project Template**" Project, right-click to activate the Context menu and Select "**Copy Project Structure...**". This action will invoke the "**Duplicate Project" dialog** where you can set a Project Name, Number and "Copy to..." location. When you use this approach to creating a new Project, you "duplicate" all of the custom settings including Project Properties, Categories, Folders, Levels and so on. See Copy, Move and Rename Project for an example of how the "Copy Project Structure" option works.

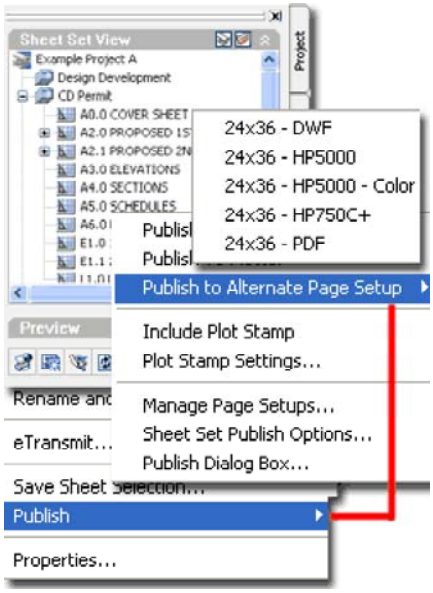
11 Publish

The Publishing tools in Architectural Desktop 2005 are extensive. I will attempt to add more information under this section in the future.

Publish - Page Setup Overrides

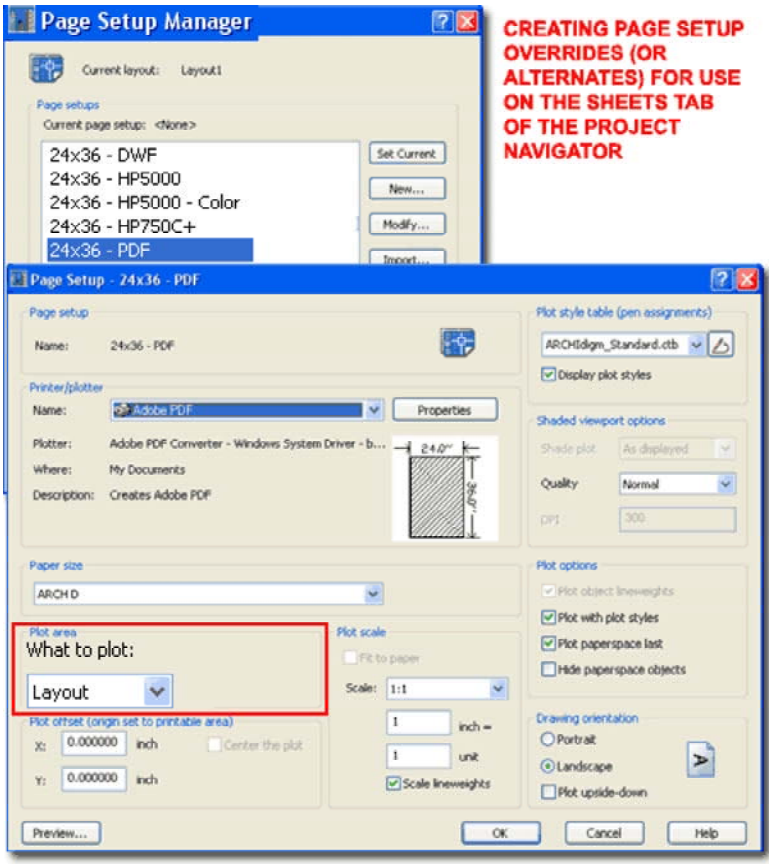
Alt.Menu	**Tools> Wizards> New Sheet Set...** - if using the AutoCAD Tools pull-down menu
	Create button on **AEC Project Defaults tab** of **Options dialog**
Keyboard	**NewSheetSet**
Links	Sheet Set Properties - for information on where to set this Template file for use on Sheets.

When you **Select** the **Publish >** Context menu option for one or more **Sheets** on the **Sheets** tab of the **Project Navigator**, you should find an option for "**Publish to Alternate Page Setup".** From this menu option you should find a list of one or more Print-ready Page Setups that you can apply to one or more Sheets. If you don't have any Page Setups to choose from or if the list does not apply to your office, you will need to create a custom **Page Setup Override Template file**. If you don't want to manage yet another Template file you could simply add Page Setups to the Default Sheet Creation Template File.



Create a new drawing file or open your Default Sheet Creation Template File. On the command line type "**PageSetup**" and create a **New** one. Specify a logical **Name** that clearly indicates how this Page Setup will affect the current Layout and what it has been configured to Print to. Set the **Printer**, **Paper Size**, **Plot Style Table** and everything else you normally use when printing. Be sure to use the "**Layout**" option for "**What to Plot**" because this is the only option that will allow you to use this Page Setup as an Override (or "Alternate Page Setup").

The problem with being limited to the "Layout" Plot Area is that you cannot use the "Fit to Paper" Scale option or the "Center the Plot" Offset option and you need those to create Page Setups that allow for things like Reductions - this is a very disappointing limitation. The thing you can use these Page Setup



CREATING PAGE SETUP OVERRIDES (OR ALTERNATES) FOR USE ON THE SHEETS TAB OF THE PROJECT NAVIGATOR

Overrides for is when you want users to be able to choose among different Printers to output the same Sheet on the same Paper Size. In my office, for example, having a Page Setup that is configured to create PDF documents is a fantastic use of this feature.

When you have created one or more custom Page Setups, Save the current drawing file as a Template (.dwt) and place in an obvious location. You can now set this Template File for use on the Sheet Set Properties dialog and begin using this feature. If you find that no Alternate Page Setups show up on the Publish list, confirm that you used 'Layout" for your Plot Area. Also, try closing your whole program and restarting - something I have actually found necessary on some office networks.

Automatic Xref'd Titleblock for Sheet Files

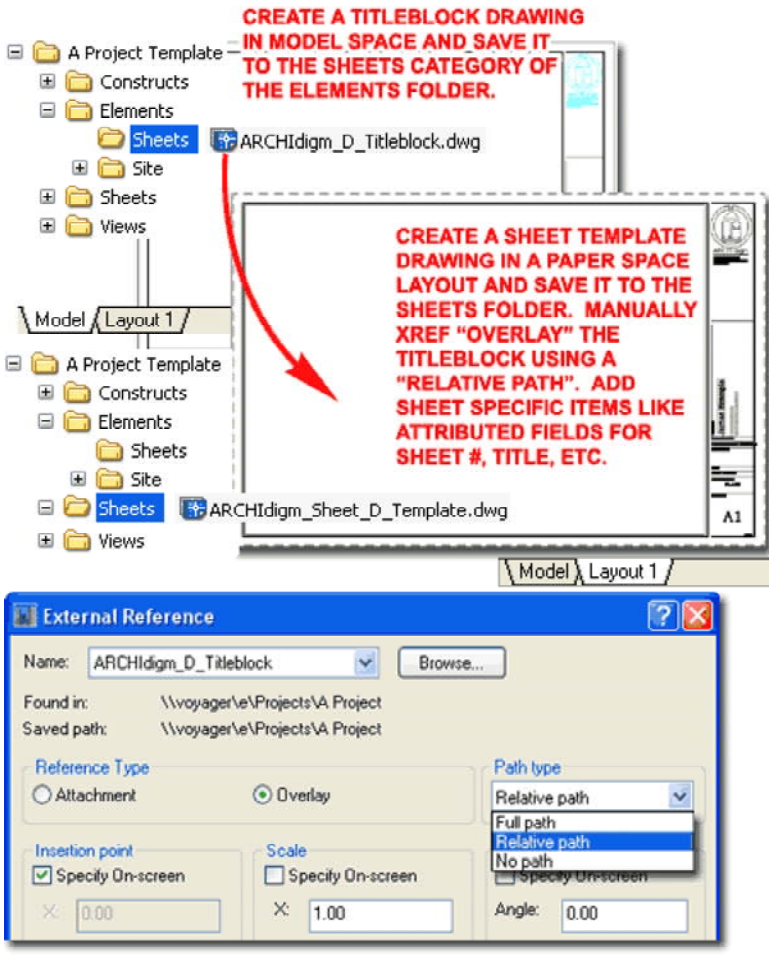
Back before the days of Architectural Desktop's "Drawing Management System" I created a system of folders and default drawing files (including templates) that I set up in numerous offices. Illustrated to the right and below I show how you can adapt an older system for **managing Titleblocks** within the new Project System. Be aware that this is not a solution that appeals to everyone but it is of particular value to those who still prefer to link **one Titleblock to all Sheet files**.

To start, you will need to use an existing Project like the "Example Project" discussed above or the "A Project Template" illustrated to the right. On the **Constructs tab** of the Project Navigator you will need a **new Category** (or folder) under **Elements** that has a name of "**Sheets**". You may want to use another name but that is what I will be calling it in this example.

Create a New Drawing by either using the **New Element** option or simply by starting a drawing from Scratch. In the **Model Space** of this drawing file create your standard Titleblock layout with all of the things that you know will be common to all of your Sheet files; things like the company logo, address and so on. If you know your stuff by now, you could also add Fields for **Project Start Date**, **Project Number**, **Project Name** and so on. Save this file to the "Sheets" subfolder of the "Elements" folder using a name that is clearly indicative of its function; something like "**Your_Company_Name_24x36_Titleblock.dwg**".

The next part can be a little tricky because it involves establishing a "**Relative path**" using the **External Reference Manager** and this "Path type" is not allowed inside the Project Navigator. What you will need to do is use the "**Close Current Project**" context menu option on the Project Browser and then **create a New Drawing File** that will be used as a "Sheet Creation Template File". With all Projects Closed, Create a New Drawing and **Save it to the Sheets folder of the Project** you just Closed; in this example it would be under the "A Project Template" Folder. Activate the first **Paper Space Layout** and configure it for printing with a Paper size that matches the Titleblock you just created.

Use the **Xref Manager** (XR) to **Browse...** for the Titleblock located under the **Sheets folder of the Elements folder**, use **Overlay**, Scale of 1 and Set the Path Type to "**Relative Path**". Place the Titleblock on your Layout as it should sit for best printing results. In this file I would add things like Attributed Fields to capture the Sheet Number, Drawing Title and so forth. Save this work to the real Sheets folder under the same Project Folder where you placed the Titleblock. Close this drawing.



Note:
Using the "illegal" Relative Path in a Project may be problematic for the Project Navigator and some Project Browser tools, like those that allow for Category (Folder) Renaming but otherwise this trick will work well. When things are configured properly, all new Sheet Files will automatically pull in the Xref of the Titleblock.

To finish the work we started on the **Sheet Creation Template File**, you will need to **Move** it to a logical location where you store all of your other Template Files; such as those for Constructs, Elements, Views and so forth. Once you have Moved this file, **Rename** it so that it will be read as a Template file; you can do this by simply changing the three letter extension from ".dwg" to "**.dwt**".

After you have completed all of the work outlined here, you will need to test the results. A good way to do this is to use the **Project Browser** and **create a temporary Project** that will only be used for testing purposes and then Deleted later.

In your New Project, c**reate a Category under Elements** and name it "**Sheets**". Using Explorer, locate the Titleblock drawing created earlier and drag it directly this new folder. I like to think of this as my Sheet Elements and not only keep Titleblocks there but General Notes and other items that are commonly used on my Sheets.

On the **Sheets tab of the Project Navigator** use the **Sheet Set Properties dialog** to assign the new Sheet Creation Template File as the source for "**Sheet creation template**". If you have Subsets, as illustrated to the right, you will need to make this assignment for each subset that you want to use this Sheet Template.

If all has been put together correctly you should now be able to Create a New Sheet and find that it automatically pulls in the Titleblock from the Sheets folder under the Elements Folder.

To make this system a more permanent part of your Project Structure, you will need to assign this Sheet Creation Template to your master Sheet Set Template. If you created a Project Template as discussed in this material, all you have to do is Open it and repeat the steps outlined here for the Sheet Set Properties (and remember those Subsets).

The only irritating aspect of this system is that each time you create a new Project using the "Copy Project Structure...", you have to place the Titleblock drawing manually as illustrated above.