

Visualization key not only during the project, but also before

CADWorx provided Malcolm Pirnie with the benefits that it expected—namely speed and accuracy in laying out hundreds of pipes. But it also provided some extra benefits that the firm didn't count on. "A lot of the time," reports Shafer, "you have to present projects to town boards and public forums and explain the work that you're planning—and the 3D visualization capabilities of **CADWorx** are very helpful in that respect. You can show people exactly what you're talking about, and show a project from both the inside and outside. People can understand a 3D model a lot better than a series of 2D drawings."

Future plans for CADWorx

Shafer and his staff admit that they are early adopters of new technology and enjoy trying new software products as they come down the pike. Based on their experience with **CADWorx**, they're sticking with that approach. In fact, Shafer plans to tell the rest of the company his experiences with **CADWorx** at an upcoming Malcolm Pirnie meeting. "Our company holds a firm-wide technical symposium every two years, and about 500 people attend from various offices across the country. At this year's symposium, we will be doing a workshop on **CADWorx**."

"**CADWorx** is giving Malcolm Pirnie a competitive edge," concludes Shafer. "If companies don't embrace this kind of technology now, they are going to find themselves being left behind."

PC Hardware/Software for the Engineering User (Part 31)

A number of COADE software programs allow users to send output directly to MS Word. Recently a problem has been noted with Office XP, which results in the error message "Failed to Create Object" being displayed.

Research on this issue reveals a new security feature added by Microsoft, which prevents macros from running, unless specifically enabled by the user. The "cause" and "resolution" as detailed by Microsoft is as follows:

CAUSE

Office XP adds a security option to deliberately lock out programmatic access to the VBA object model from any Automation client unless a user chooses to permit such access. This is a per user and per application setting, and denies access by default.

This security option makes it more difficult for unauthorized programs to build "self-replicating" code that can harm end-user systems.

RESOLUTION

For any Automation client to be able to access the VBA object model programmatically, the user running the code must explicitly grant access. To turn on access, the user must follow these steps:

1. Open the Office application in question. On the **Tools** menu, click **Macro**, and then click **Security** to open the **Macro Security** dialog box.
2. On the **Trusted Sources** tab, click to select the **Trust access to Visual Basic Project** check box to turn on access.
3. Click **OK** to apply the setting. You may need to restart the application for the code to run properly if you automate from a Component Object Model (COM) add-in or template.

COADE software programs ship with several "macro" files, to enable the proper setup of the resulting WORD document. This setup includes page headers and footers, report titles, and so forth. These setup macros are read from the file WORD.BAS, found in the "\system" subdirectory, beneath the program's installation directory. Two additional .BAS files are provided: WORDNPS.BAS and WORDNPS.BAT. When installed directly from the COADE CD, WORD.BAS and WORDNPS.BAS are identical. WORDNPS.BAS includes "page setup" information, such as margin settings and paper size settings. WORDNPS.BAS does not contain this "page setup" information. To implement WORDNPS.BAS (which only saves time when WORD creates a new document), simply copy WORDNPS.BAS to WORD.BAS. To switch back to the "page setup" version, copy WORDPS.BAS to WORD.BAS.

This switching back and forth between "page setup" and "no page setup" can be accomplished easily by invoking either of two batch files, also provided in the "\system" subdirectory. WordNoPageSetup.bat copies WORDNPS.BAS to WORD.BAS. WordPageSetup.bat copies WORDPS.BAS to WORD.BAS.

The .BAS files are simple text files, that can be edited if necessary. (*Note, make a backup copy before you modify these files. Fouling up these files will render the Word interface inoperable.*) One reason you may want to modify these files is to change the default paper size, say to A4. This can be accomplished by the following steps:

1. Open WORD.BAS with a text editor. (NotePad will suffice if you have nothing better.)
2. Find the "SetupThePage" macro. (This begins on Line 100 if your editor displays line numbers.)

3. In this macro, find the line for ".PageWidth" (line 117 if your editor displays line numbers). Change the value of "8.5" to "8.27".
4. On the following line for ".PageHeight", change the "11" to "11.69".
5. Save the file
6. Exit your editor.
7. Test your changes.
8. Optionally, you may want to copy WORD.BAS back to WORDPS.BAS, so both files remain identical.

CAESAR II Notices

Listed below are those errors & omissions in the **CAESAR II** program that have been identified since the last newsletter. These corrections are available for download from our WEB site. Unless otherwise stated, all of these changes and corrections are contained in the 010703 build of Version 4.30.

- 1) **AISC Module:**
 - Corrected the determination of the shear center for angle cross sections.
- 2) **Structural Input Module:**
 - Corrected the drawing routines to apply units conversion constants.
 - Corrected graphics toolbar buttons for "zoom" and "reset".
 - Added double line plotting to the graphics.
 - Corrected plotting of channel and tee sections when rotated with a beta angle.
- 3) **Buried Pipe Modeler:**
 - Corrected the generation of "explicitly defined" bend elements to avoid the generation of "zero length" elements.
 - Corrected the insulation density specification on above ground elements with no specified insulation thickness.
 - Corrected a memory allocation error for buried jobs with wind loading.
- 4) **Stress Computation Modules:**
 - Corrected the SRSS stress summation for pressure when using B31.4, B31.4 Ch9, B31.8, B31.8 Ch8, Z662, and BS7159.
- 5) **Animation Module:**
 - Added a check for "zero length" elements in the plot view.
 - Corrected bend plotting to avoid "break-away" animation when bend angles approached zero.
- 6) **Element Generator:**
 - Corrected the initialization of the flag that invokes the modified form of "Airy" and "Stokes" waves.
 - Corrected a "sign error" in the computation of the "Z" fixed end moment for uniform loads when pressure stiffening of straight pipes is activated.
- 7) **Error Checker Module:**
 - Corrected the implementation of WRC329 for B31.1 reduced intersection SIF computations.
- 8) **Input Echo / Neutral File Module:**
 - Relinked to avoid the need for the Microsoft "debug" DLL.
- 9) **Intergraph Interface:**
 - Expanded allowed model size.
- 10) **Static Load Case Setup Module:**
 - Corrected a problem causing F9 to be listed as an available load twice.
 - Corrected a problem in the "load case options" where highlighting an entire column caused a crash.
- 11) **Output Modules:**
 - Corrected the SRSS stress summation for pressure when using B31.4, B31.4 Ch9, B31.8, B31.8 Ch8, Z662, and BS7159.
 - Corrected a problem causing BS7159 allowables to print as zero.
 - Corrected a problem sending "Miscellaneous" reports to WORD, causing titles to be reprinted with every data line.
- 12) **PCF Interface:**
 - Corrected bend coordinate associations when breaking attached piping for restraints.
 - Corrected reading operations to handle input lines with trailing blanks.