1.1 Setting Up a Template Drawing

A **template** is something that can be used as a pattern for future projects. In Thermal Desktop, a *template drawing file* should be created as a starting point for creating new Thermal Desktop drawings. If all of your models must be in English (Imperial) units, make a template with English units already selected. If you also deliver models in SI units, make a template with SI units selected and use the appropriate template when starting a new model. Of course, units can be changed while working on a model but having a known starting point is the idea of the template.

Templates don't have to be restricted to units. Any defaults can be changed and saved in the template to suit your preferences. Templates help keep models consistent and easy to use.

In this tutorial, a template drawing file (file extension DWG) will be created. The template will be used in other tutorials and may be used as a permanent template for use in future thermal analysis tasks.

Note: This tutorial is creating a Thermal Desktop template with the extension DWG. A Thermal Dektop template can be empty or it can contain objects already created. This should not be confused with an AutoCAD template with the extention DWT.

Keep your template(s) in an easy to find location. When starting a new thermal analysis task, follow these steps:

1. Copy the template to a directory chosen to store the work for the new task or project.
2. Rename the copied template file.
3. Start Thermal Desktop by double-clicking on the renamed drawing file.

   Thermal Desktop will start with the preferences saved in the template and the current working directory will be set to the directory which contains the drawing file. All database files created by Thermal Desktop for view factors, radiation conductors, and orbital heating rates will be placed in this working directory.

Important: If Thermal Desktop is not launched using the drawing file for the task and instead is started from the AutoCAD Icon, the current working directory will be the user's Documents directory. This is not recommended, since multiple thermal analysis tasks may overwrite each other's database files.

The following exercise creates a template file with preferences set to be convenient for working with Thermal Desktop. The user is encouraged to experiment with the available options as a means to discover which settings are compatible to each individual's work style.

Typographical Conventions:

- "Select **Thermal** > **Edit Any**" means to expand the `Thermal` menu and select `Edit Any`.
- "Select **Thermal** : **Common** : **Edit**" means to select the `Thermal` tab and select `Edit` in the `Common` panel. If the command requires expanding the panel, you will be told to do so.
- Type **RcEditAny** means to type the command. As long as the drawing area is active the command will be entered. You do not have to click in the command line first.

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Important: The process described below should only be used when creating a template. In future tutorials or modeling when an existing model is not available, this template drawing file should be copied to the desired folder, renamed and the file icon double-clicked to start Thermal Desktop.

1. From the Windows desktop go to **Start** menu and look for AutoCAD. Follow that path to the version of AutoCAD installed, and then follow that to the executable (i.e. **Start** > **AutoCAD 20xx - English** > **AutoCAD 20xx - English**).

   The AutoCAD window appears.

2. Type `VisualStyles` and select **2D Wireframe** to be consistent with the images in this tutorial.	
3. Type `SaveAs`. 4. Change the name of `Drawing1.dwg` to `thermal.dwg` in the `\Tutorials\Thermal Desktop - legacy\template` directory. and select **Save**. The drawing area title bar is updated with the new name of the drawing, thermal.	Be sure to save the files in your copy of the tutorials directory. This save occurs before any Thermal Desktop commands are issued, therefore, at this point the file is strictly an AutoCAD file. **Note:** If your models may be opened with older versions of AutoCAD, choose the version predates the oldest version that may be used. Thermal Desktop 6.3 works with AutoCAD versions 2018 through 2023.

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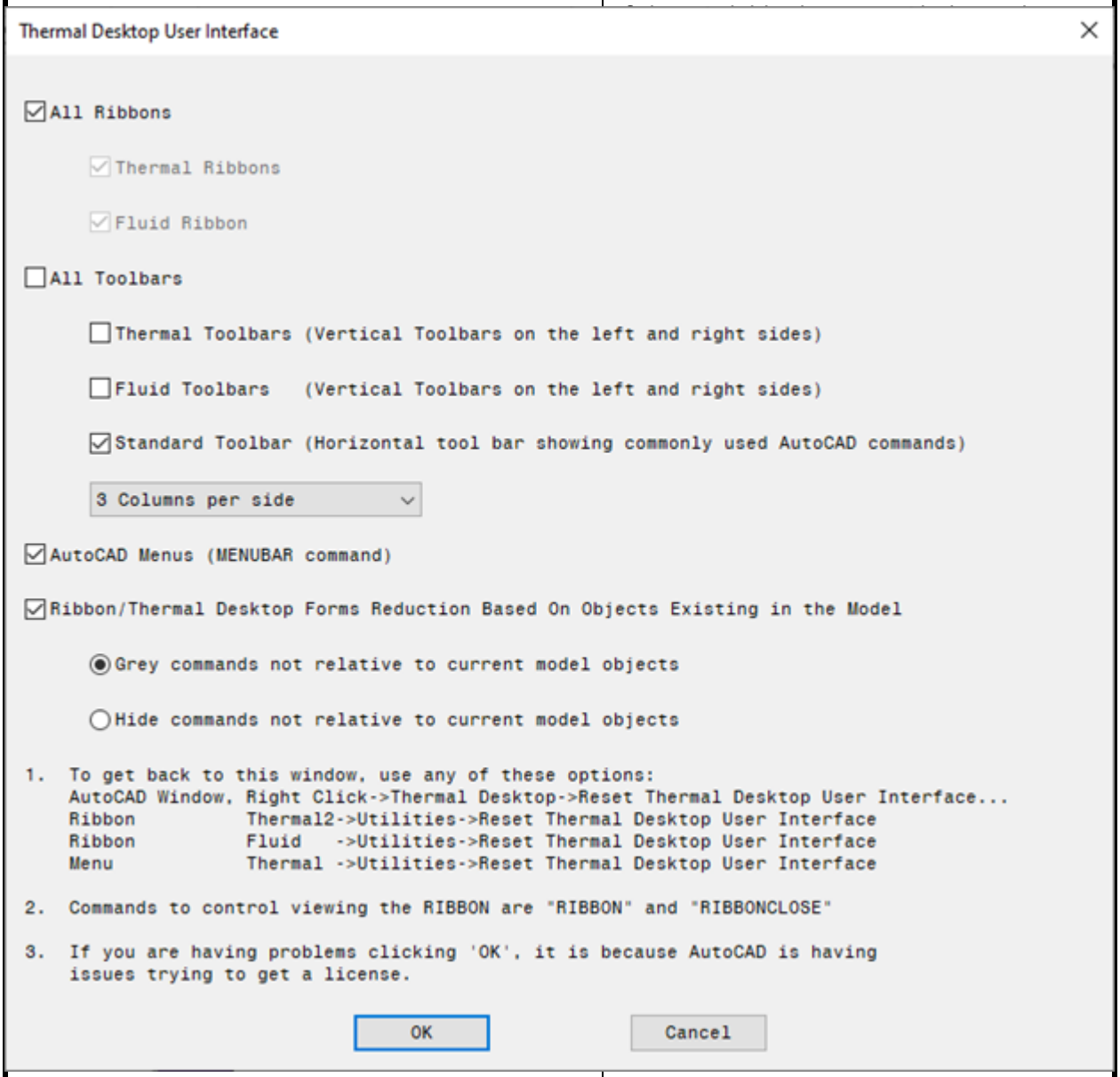
5. Type `RcResetToolbars` 6. In the **Thermal Desktop User Interface** window, check **All Ribbons**, **Standard Toolbar**, **AutoCAD Menus**, and **Ribbon/Thermal Desktop Forms Reduction** and uncheck the other boxes. 7. Select **Grey commands not relative to current model objects**.	**Note:** This step may have already been completed if you are taking the training or you've started Thermal Desktop before now. The Thermal Desktop splash screen will be displayed when the first Thermal Desktop command is issued.



8. Select **View > 3D Views > SW Isometric**. Note the UCS icon changes to reflect the view.	Selecting **View > 3D Views > SW Isometric** here sets an isometric view parameter for the new template.

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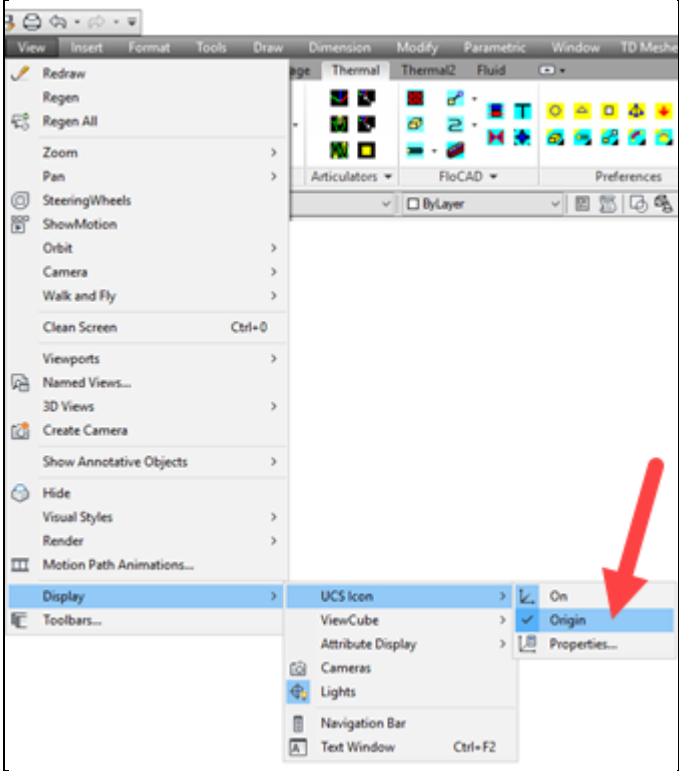
9. View the menu selection **View** > **Display** > **UCS Icon**> **Origin**. 	This step locates the User Coordinate System (UCS) display icon at the origin of the model, rather than in the lower left corner of the screen. If the UCS origin is not in the display area, then the UCS will be displayed in the lower left corner.
10. Confirm a check mark is displayed next to **Origin**. If a check mark is not visible, click **Origin** to select the option. Otherwise click anywhere in the Thermal Desktop window or press <**ESC**>.	
11. Select **File** > **Exit**. 12. Select **Yes** to save changes to the template file. Thermal Desktop is closed.	Exiting AutoCAD without preceding the Exit command with a Save will bring up a dialog to save any changes.

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13. Open the \Tutorials\Thermal Desktop - legacy\template folder and examine the contents.

    The \completed folder is a folder included in many tutorials. It contains the dwg file the user would have after finishing the tutorial.

    The thermal.bak file is a backup file generated by AutoCAD when a Save is performed. This file is the previous version of the template.dwg file and can be used by changing the extension from .bak to .dwg in case the main file becomes corrupted.

    The thermal.dwg file is a model file created by this tutorial. This file will be copied to other directories to use as a starting point for other tutorials and models.

    The RcOptics.rco and TdThermo.tdp files are optical and thermophysical properties databases, respectively, that are automatically generated if they do not already exist, unless the model points to databases in specific file locations.

As experience is gained with Thermal Desktop and some of the advanced options, you can create a new template file with different parameters such as Units and other property settings as desired. A user may find it useful to have a template for SI units, a template for English units, or possibly a template with certain default settings.

Important: Remember to create a copy and rename the template before beginning design work to insure the template remains in its original state. If copying the template at the directory/file level by dragging the template file icon to the working directory, be sure to hold the <Ctrl> key down when dragging the template drawing file so that the template is copied, rather than moved.