

What's new in form•Z v6.5.

This document contains a summary of what is new and changed in version 6.5. Rather than providing an addendum, the complete User's Manual has been updated with the version 6.5 information. The manual is available in the documents section of this DVD as well as through the electronic help environment built into **form•Z**.

Installation

A majority of the plugins have been incorporated into the main **form•Z** installer so it is no longer necessary to run separate installers to install the plugins. Installed plugins can be enabled in the Extensions Manager dialog that is accessed from the Extensions menu (right side of the menu bar). Plugins that were installed with previous versions of **form•Z** should be automatically enabled when 6.5 is installed. **form•Z** automatically detects multiprocessor machines when it is launched so there is no longer an option to install single or multi-processor versions. Note that on OS X the 3D Connexion and Microscribe plugins require separate installation of their system extensions. The installers for these can be found in the "Support" folder on this DVD.

form•Z

The STEP (Standard for the Exchange of Product Data) translator, previously available only as a separately purchased plugin, is now included with all **form•Z** 6.5 versions. This translator allows for importing and exporting of 3D data to the STEP file format within **form•Z**. The documentation for this translator can be found in the "Documentation\Plugins" directory of this DVD.

The **Sweep tool** has been improved with a new option that yields better results when creating a nurbz sweep. See section 4.9.1 for details.

A new option has been added to the **Deformation** and **Bend Along Path** tools to optionally not introduce new points into the deformed or bent objects. This allows for a well-meshed and textured object to be deformed and animated without disturbing the texturing of the object. See section 4.11 for details.

The options of the **Smooth Shade tool** discussed in section 4.25.2 and the Smooth Shading parameters in the **Project Rendering Options** dialog, as described in section 3.6.5 have been simplified. Smooth shading rendering effects are now easier to control.

The **RenderZone** and **Shaded Render** display modes now have the Silhouette and Surface Quality parameters, previously located in the **Project Rendering Options** dialog. See sections 3.6.4 (Shaded render) and 6.1.7 (RenderZone) for details.

The application folder has a simplified structure. Most files have been moved into the "*formZ Support*" directory. It is easier to navigate in the Application folder (access plugins, scripts etc.).

form•Z RenderZone Plus

In addition to the base **form•Z** changes, the new **form•Z RenderZone Plus** product replaces the former RenderZone and RadioZity versions with the following features.

form•Z RenderZone Plus now includes more than **600 new predefined materials**. They are installed by default in the **form•Z Materials** folder, together with their corresponding texture maps. Predefined materials are accessed through the Surface Style Parameters dialog, as described in section 6.2.7 of the RenderZone manual. A catalog of all of the predefined materials can be found in the “formZ RenderZone Material Guide.pdf” in the Documentation folder of this DVD.

A new symbol library with 24 new **tree symbols** is included. The symbols are each defined with multiple levels, where each level uses increasingly higher resolution texture maps. A catalog of the new tree symbols can be found in the “formZ Tree Symbols Guide.pdf” in the Documentation folder of this DVD. The new library is called “Trees2.zlb” and can be found in the Symbol Libraries directory of this DVD.

The **Interactive Shaded** OpenGL based renderer has been reengineered to improve performance and attain new features. This improves its use as a working environment and also makes it a more accurate method for previewing RenderZone Plus renderings and texture placements. Specific improvements are as follows:

- Shadows from point and cone lights are now supported and shadows can now be shown with accurate intensities.
- Procedural textures generated by RenderZone are now also rendered.
- Transparent and bump textures, both map based and procedural, are now rendered.

See section 3.6.2 for more details.

Numerous interface changes, improvements and updates have been incorporated in **form•Z RenderZone Plus**, primarily in the RenderZone and radiosity area. The RenderZone documentation (chapters 6 and 7) has been extensively reviewed and updated to reflect these changes together with presenting the major new **global illumination** features.

Ambient Occlusion is a global illumination method, which is now available as a RenderZone option. It performs a better distribution of the otherwise uniformly applied ambient light. For a given point to be rendered, the ambient light is decreased, based on close by objects that may occlude the point. This leads to improved illumination from ambient light. Ambient Occlusion is described in more detail in section 6.1.5 of the RenderZone manual. A tutorial is available in the same section with a file located in “Sample Files/RenderZone/6.1.5 AO Tutorial” of this DVD. Further sample files illustrating ambient occlusion effects can be found in “Sample Files/RenderZone/6.1.5 AO Examples”.

Final Gather is the second new global illumination technique in **form•Z RenderZone Plus**. It computes a one bounce light reflection to create indirect illumination, not unlike radiosity. The reflected light is stored as sample points in a cache. The sample points

are used to gather light during a RenderZone rendering to provide more accurate illumination from reflected light. Final gather may also use a radiosity solution to provide illumination from multiple light bounces. Details about final gather are documented in section 6.1.6 of the RenderZone manual. A tutorial is shown in the same section and the corresponding sample file is in “Sample Files/RenderZone/6.1.6 FG Tutorial” on this DVD. Further sample files are located in “Sample Files/RenderZone/6.1.6 FG Examples”.

The **radiosity** interface has been restructured. Its primary purpose is now to support the final gather RenderZone option. In this mode, radiosity can be executed quickly with a minimal set of user options. The resulting radiosity mesh may be coarse and contain inaccurate shadows. This is of no concern as the solution serves only as input to a final gather based rendering, where the mesh is never rendered directly. Radiosity is described in more detail in chapter 7 of the User’s Manual.

The new **Radiosity Attributes** modeling tool allows the user to set object and face level radiosity attributes. Individual objects can now be excluded entirely from radiosity. This is beneficial to speed up a solution where an object with many faces, but which is small on the screen, would unnecessarily slow down radiosity for no apparent gain in illumination quality. Objects may also be set to receive light in a radiosity solution, but not reflect it. This also speeds up the solution, but still allows the objects to receive better illumination. This new tool is described in section 7.1.4. The Radiosity Attributes tool is also used in the final gather tutorial shown in section 6.1.6.

The new **Radiosity Bounding Box** modeling tool can be used to further optimize a radiosity solution. It allows a user to interactively define a 3D box. Objects inside the box fully participate in radiosity. Objects outside the box are excluded. This is a quick method to focus a radiosity solution to only a portion of a larger model. For example, a solution may now be calculated efficiently for only a room of a building, if the bounding box is fit tightly around the room. The Radiosity Bounding Box is used in the final gather tutorial described in section 6.1.6.

The **Exposure Correction** method of the RenderZone Postprocess option has been extended with two new types, Automatic and Brightness & Contrast. They are easy to control with just two parameters each and improve over or underexposed images with little effort. They are described in more detail in section 6.1.10.

The **Sketch render**, previously available only as a separately purchased plugin, is now included with **form-Z RenderZone Plus**. The Sketch rendering mode creates images that have a variety of **expressionistic effects** that make the image appear as if it were done by hand sketching or painting techniques. The documentation for this translator can be found in the “Documentation\Plugins” directory of this DVD.

The following new RenderZone shaders were added and are described in more detail in sections 6.2.3 through 6.2.6 of the RenderZone manual :

The **Gradient** color shader blends different colors in a straight, radial or circular pattern. It is also available as a transparency, bump and background shader.

The **Brick, Paver** color shader creates a layout of 12 different brick patterns for use as wall or ground paving textures. It is also available as a bump shader.

The **Paving** color shader creates an irregular pattern of natural paving stones separated by mortar joints. It is also available as a bump shader.

The **Frosty** reflection shader produces blurry transparency. It can be used for frosted windows, glasses or thin translucent materials, such as curtains.

The **Shingles** bump shader generates a pattern that simulates roof and wall shingles. The pattern is formed from individual tiles of a certain shape, which are separated by grooves.

The **Preferences** dialog has a new option where the number of processors that are used during multi processing calculations, such as raytraced rendering and ambient occlusion, can be selected. This is described in section 3.2.7.

The **Light Parameters** dialog has been reorganized into a series of tabs that contain intensity, location, shadow and parameter settings. The **Atmospheric light** option is now accessible as a parameter of a distant light and no longer depends on the accurate light intensity option. This is described in more detail in sections 6.6.2 and 6.6.3 of the RenderZone manual.

The **Environment light** now has a **Spin** parameter that can be used to rotate the environment light around the world Z-axis. This is described in section 6.6.7 of the RenderZone manual.