Vectorworks 2013

ƎVOLVE WITH VECTORWORKS
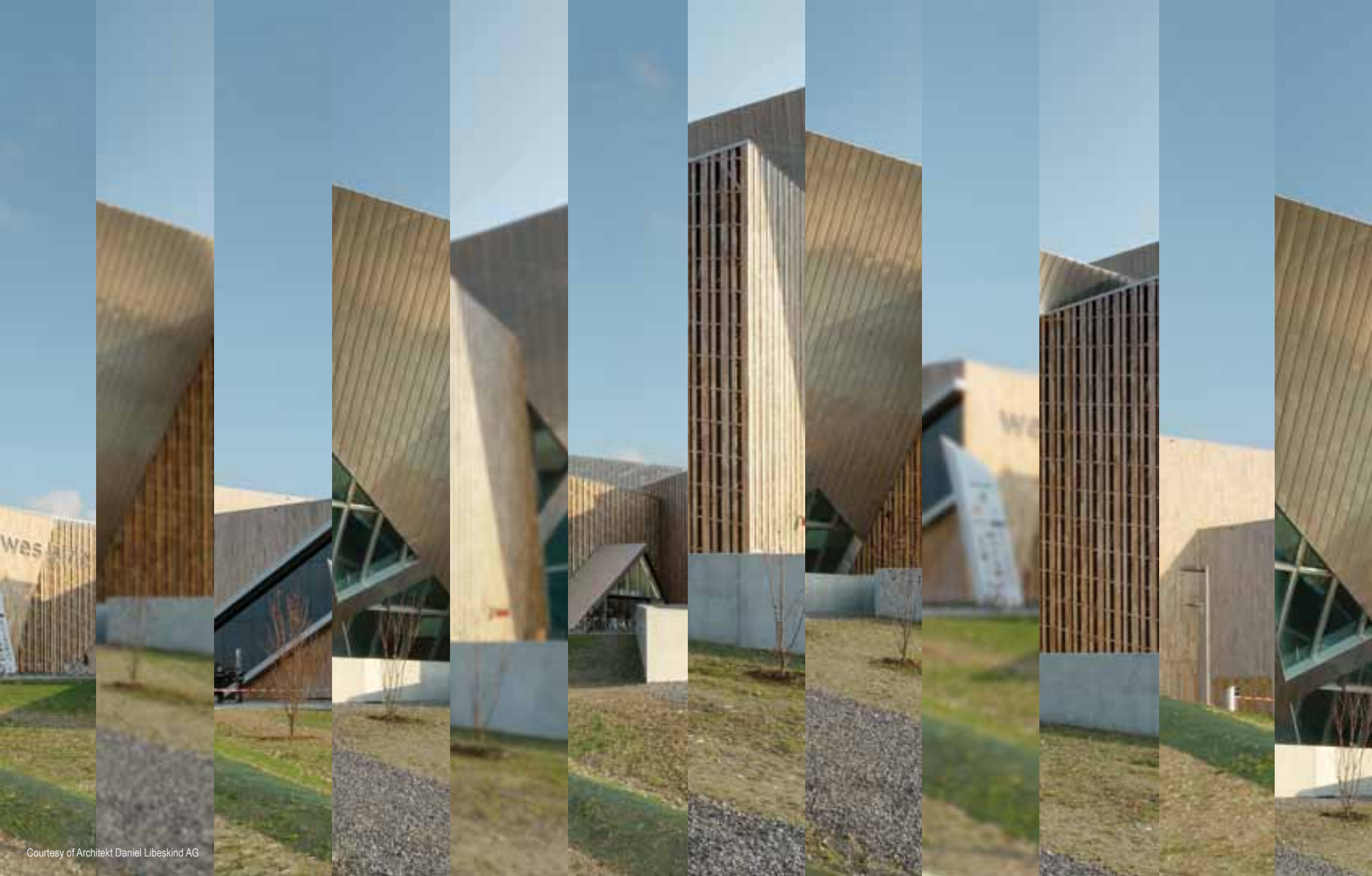
CONTENT

COLOR KEY

Please refer to the guide to discover what features are in your Vectorworks product.

F Vectorworks Fundamentals

A Vectorworks Architect

L Vectorworks Landmark

S Vectorworks Spotlight

D Vectorworks Designer

R Renderworks

WHAT'S NEW IN VECTORWORKS 2013

This year, we've taken a slightly different approach to the newest version of Vectorworks software. Don't worry – as in previous years, we've added many exciting new features and improved existing capabilities to make your workflow easier; this brochure will be your guide to what's new in Vectorworks 2013.

Instead of just giving you a rundown of the new features, we'd also like to share with you some of our thinking behind this release. To put it simply, the world of design is changing. Building Information Modeling (BIM) is revolutionizing the AEC industry. Cloud technology is adding freedom and convenience to the design process. And the competitive economy is increasing the need to create stunning presentations to win business.

Whether you're an architect implementing a BIM workflow, a landscape professional striving for sustainable sites, or an entertainment designer pushing the limits of innovation in lighting, we know your process as a designer is evolving.

As your process evolves, the tools you use to realize your creative visions need to evolve, as well. We understand this, and we've worked throughout the past year to adapt the Vectorworks family of design solutions to your needs. As you flip through this brochure and try out the new version of the program, you'll discover more than 80 improvements along with new commands and tools, as well as new forms of collaboration to support your design practice.

 Streamline your workflows…improve your efficiency…evolve with Vectorworks 2013.

EVOLVE WITH THE BEST IN 3D MODELING

What tools impact change and provide more efficient and effective modeling? With Vectorworks 2013 software, you gain intuitive interface controls in 3D, plus a new Clip Cube mode and Surface Array command, along with improvements to perspective projection and substantially faster graphics display during navigation.

Improved Navigation Graphics

For Vectorworks 2013, we've dramatically increased the speed at which you can move around your drawing. No matter what your design discipline is, you'll love this feature. Panning and zooming improvements are applied in 2D and 3D, so you get significantly faster graphic re-draw. Plus, you'll get much quicker OpenGL and 3D wireframe previews while rotating.

F A L S D

Full-screen Perspective Projection

You can now work with your models in a full-screen perspective view with a configurable horizon, with the option to turn on the cropping window when setting up views for presentation renderings.

F A L S D

Surface Array

The surface array object brings tremendous 3D modeling power to your fingertips. With this new command, you can easily duplicate 2D and 3D geometry onto planar or NURBS-based surfaces, giving you the power to easily model curtain walls, complex roof systems, stadium-like structures, or any other array model you can imagine.

A L S D

Surface Array
Model curtain walls, complex roof systems, stadium-like structures, or any other array model you can imagine.

Navigation Graphics
Significantly faster graphic re-draw with improved navigation graphics.

Full-screen Perspective Projection
Now you can work with your models in a full-screen perspective view with a configurable horizon.

Clip Cube

The clip cube provides additional visibility control over large, complex models, allowing you to work on isolated parts within the interactive boundaries of the clip cube.

F A L S D

Improved Walkthrough Tool

The Vectorworks Walkthrough tool has evolved to provide an interactive experience that's more responsive and predictable when navigating inside a model.

F A L S D

Display Planar Objects in Section Viewports

We've added a new option to show or hide planar objects for design and sheet layer section viewports, enabling you to further customize the appearance of your work.

A L S D

## Performance Improvements in Hidden Line Rendering

Hidden line rendering now uses multi-threading on the Windows operating system to give you faster and more reliable results.

F A L S D

Enhanced Graphical Feedback for the Rotate Tool

The improved Rotate tool provides enhanced graphical feedback while rotating objects. A protractor preview clearly shows the rotation center, the axis of rotation, and the rotation lever. This way, the rotation angle can be interactively applied to your selection.

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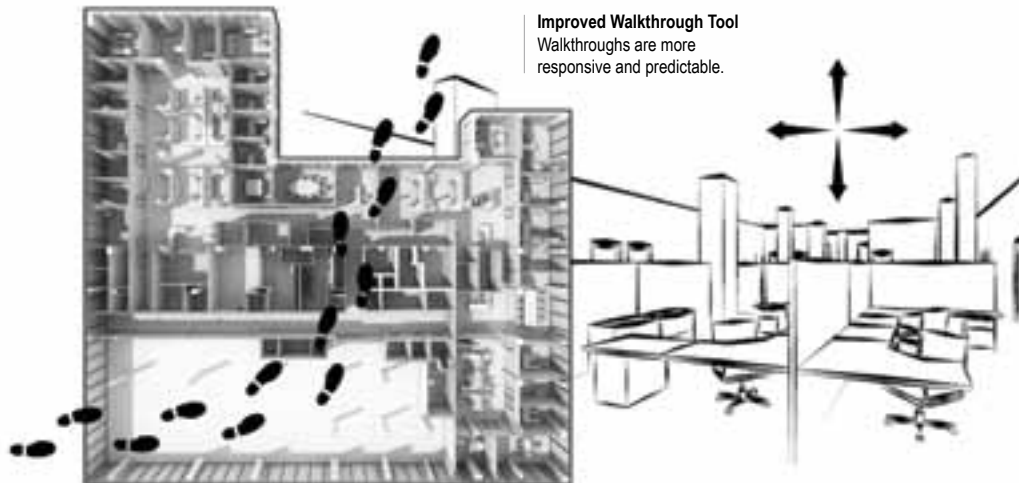
Improved Walkthrough Tool
Walkthroughs are more
responsive and predictable.
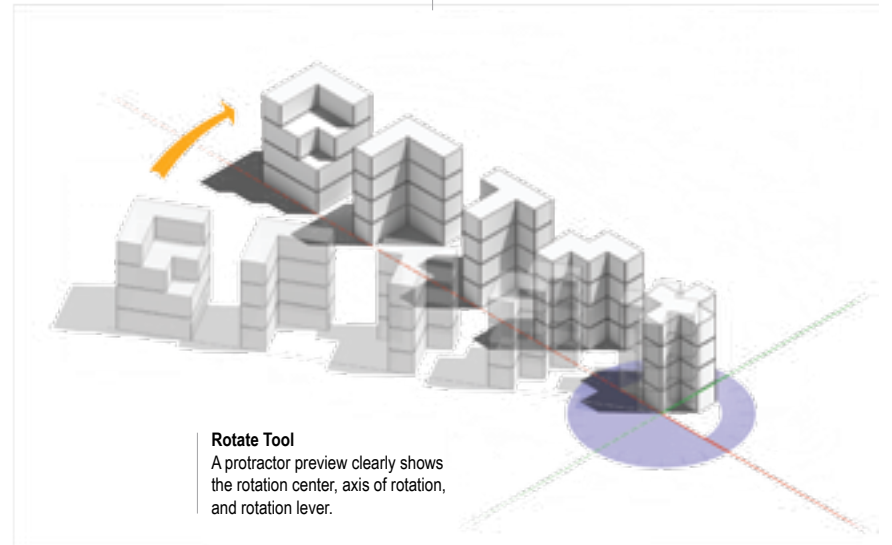
Rotate Tool
A protractor preview clearly shows
the rotation center, axis of rotation,
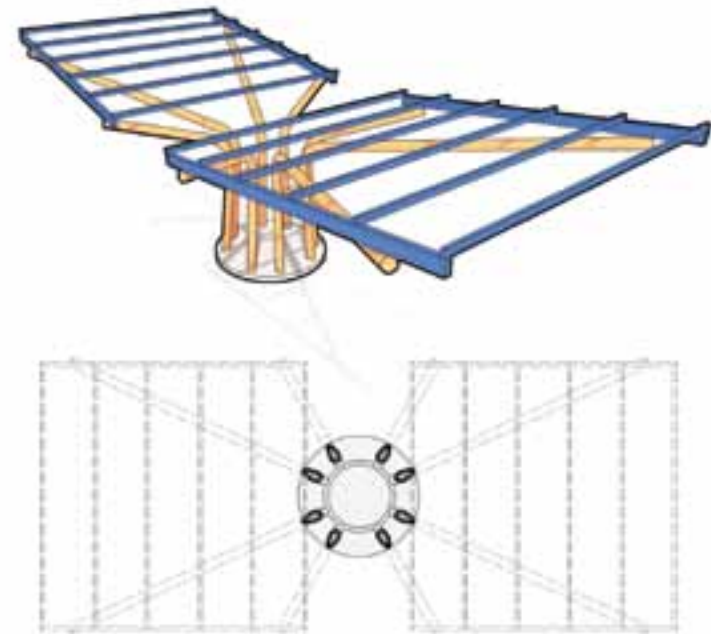and rotation lever.

EVOLVE WITH BETTER BIM TOOLS

Simplify complex BIM tasks and BIM interoperability with one of the most advanced IFC support systems in the market. Graphically convert complex, free-form modeling shapes into proper 2D and 3D representations using the new Auto Hybrid command, plus more 3D support with 3D door and window tags, and a completely re-engineered roof object based on the Parasolid® engine. Vectorworks 2013 software delivers exactly what you need to evolve to BIM.

Auto Hybrid

The new Auto Hybrid command provides an easy, yet powerful way to turn arbitrary 3D geometry into a hybrid BIM object with a custom 2D plan appearance. Its controls give you the flexibility to determine specific aspects of the plan appearance to meet the needs of your documentation, while maintaining the powerful and intuitive 3D geometry editing capabilities of Vectorworks software.
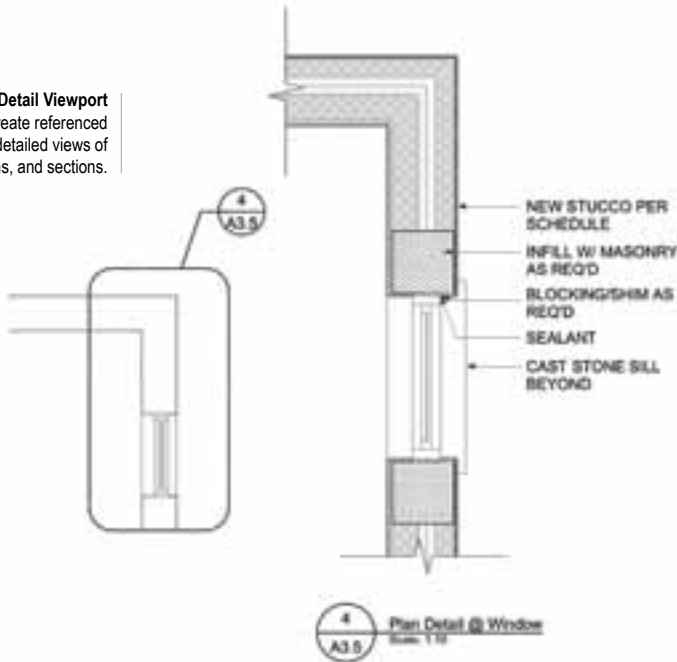
A L S D

Create Detail Viewport

The new Create Detail Viewport command provides an extremely efficient way to automatically create cropped viewports, allowing for better navigation between detailed views and the model. This improvement gives you detailed views of plans, elevations, and sections with markers that automatically reference and coordinate to your viewports' drawing and sheet numbers.

A L S D

Improved Bounding of Spaces

It is now more efficient and convenient to create, update, and edit spaces. In addition to the manual and select wall modes, with a single click you can now create spaces that are defined by a set of walls. Auto-bound spaces adjust their boundaries automatically when walls are moved or changed, saving you time.

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Create Detail Viewport
Automatically create referenced and coordinated detailed views of plans, elevations, and sections.

Auto Hybrid
Easily turn arbitrary 3D geometry into a hybrid BIM object with a custom 2D plan appearance.

NEW STUCCO PER SCHEDULE

INFILL W/ MASONRY AS REQ'D

BLOCKING/SHIM AS REQ'D

SEALANT

CAST STONE SILL BEYOND

4 / A3.5
Plan Detail @ Window

Inserting Dormers and Skylights in Roof Faces
Easily insert dormers and skylights in roof faces.

Enhanced IFC Usability
Enhancements to IFC increase your flexibility to communicate with many other IFC-compatible products.

Parasolid-based Roofs
Significantly improved performance for all roof configurations and modifications.

Inserting Dormers and Skylights in Roof Faces

You can now easily insert dormers and skylights in roof faces and control their size from the Object Info palette.

F A L S D

Inner Boundary Mode for the Slab Tool

The Inner Boundary mode has been added to the Slab tool, allowing you to create an auto-bound slab from a set of walls with a single click.

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Wall Re-engineering

Wall operations in Vectorworks 2013 now boast improved performance, especially for operations involving multiple walls. When moving connected walls or making view changes, wall display is nearly instant.

F A L S D

Improved Stair Railings

The interface for customizing stair railings has been improved to provide more intuitive control over handrails and guardrails when parameters differ for each side of the stair.

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Enhanced IFC Usability

IFC data can now be attached to Vectorworks symbols, enabling you to automatically define IFC data for all existing instances of symbols in your model. Plus, you can now see a short description of assigned IFC data, and run the IFC Data command from the Object Info palette.

A new IFC option to export solids operations as BREPs has been added to the Export IFC Project command. In addition, the layout and controls in the IFC Export dialog box have been improved to meet the requirements of the new IFC2x3 Certification 2.0 process. Additional IFC export options increase the flexibility of your Vectorworks software to communicate with many other IFC-compatible products.
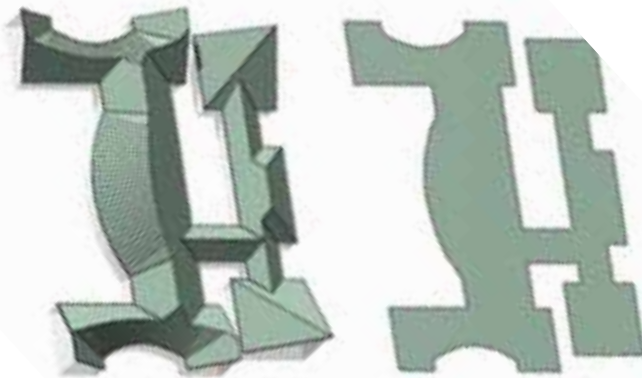
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Parasolid-based Roofs

Roof objects have been completely re-engineered and are now based on the Parasolid modeling kernel. You benefit from significantly improved performance, and you gain reliability for all roof configurations and modifications.

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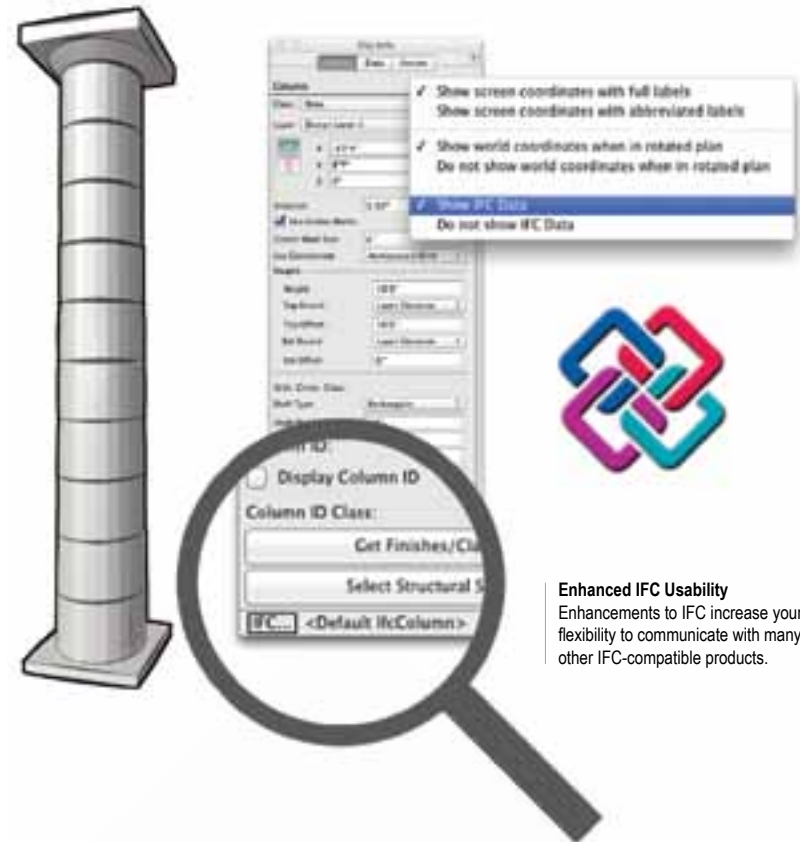
Enhanced Door and Window Capabilities

The door and window objects in Vectorworks 2013 have received a series of significant improvements that deliver greater flexibility in how you create, configure, view, edit, and report doors and windows in your models. Specific improvements include:

• **3D Door and Window Tags**: ID tags for windows and doors are now available in 3D views, allowing you to display them in elevation viewports for thoroughly coordinated documentation.

`A` `L` `D`

• **Door and Window Report Improvements:** The Create Report command now provides a comprehensive list of all door and window data fields, giving you more options to configure documentation schedules, as well as use the resulting database worksheets to track and edit more aspects of the door and window objects.

`F` `A` `L` `S` `D`

• **Door Threshold Under Leaf:** For more accurate representations of different door system manufacturer configurations, you can now limit the threshold width to the door leaf width.

`A` `L` `D`

• **Door and Window Jamb Extensions:** The door and window objects now support jamb extensions, providing accurate representations of door and window installations in thick walls.

`A` `L` `D`

• **Multiple Selection Editing for Doors and Windows:** You can now edit multiple selections of doors or windows using the standard settings dialog box.

`A` `L` `D`

• **New Window Sash Operations and Shutter Improvements:** The new sash operations offer more window configurations for the Window tool, including Tilt/Turn, Vertical Pivot, Picture Window Slider, and Cottage Double Hung.

`A` `L` `D`

• **Window Shutter Improvements:** You now have the flexibility to create window designs with custom shutter widths for both the interior and exterior.

`A` `L` `D`

Optimized Space Object

We've introduced a vastly improved methodology for reading and writing customizable lists such as room finish, names, and occupance organizations for space objects. In addition, multiple default text files containing room finishes, names, and occupancy organization data can be stored for use in project teams or across multiple projects. Plus, spaces and their boundaries can now be controlled by separate classes, which provide greater control over graphic visibilities and styles for documentation. Even more, the space object height can now be associated with the building model story, just like for walls and columns.

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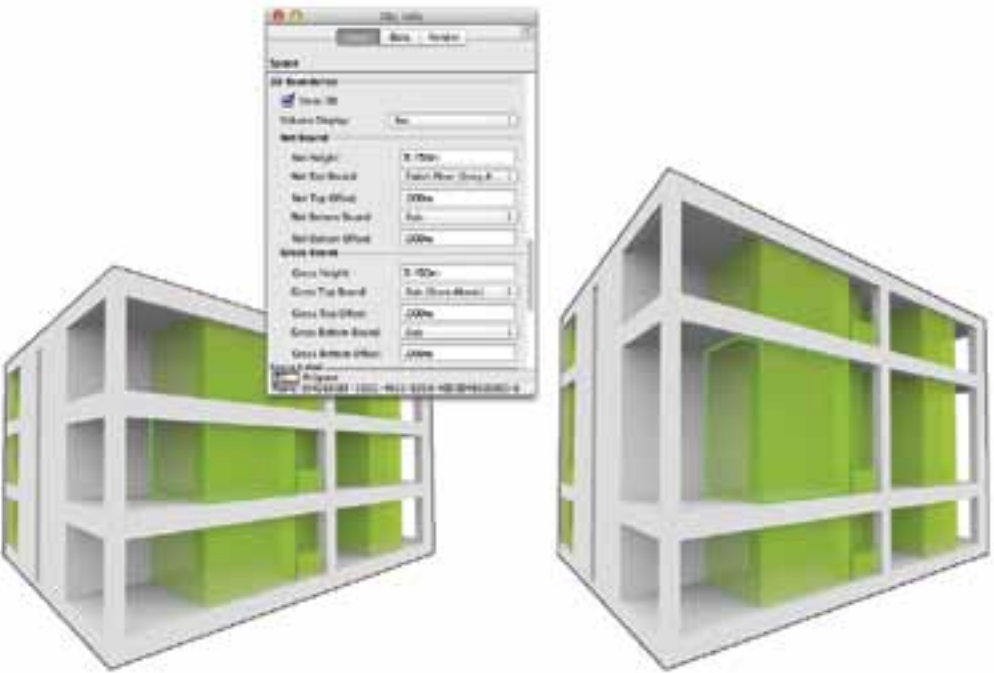
Optimized Space Object
A series of improvements optimize your ability to control space configurations and data.

EVOLVE WITH GREATER FILE INTEROPERABILITY

Enhancements to already robust file imports and exports, such as IFC, DXF/DWG, and the ODBC communication standard, plus new file format support for Rhinoceros®, DWF®, FBX®, COLLADA, and gbXML®, make the Vectorworks platform the most interoperable software in the AEC marketplace.

New gbXML Export

With direct support for gbXML, you can now easily export required information to communicate with a wide variety of energy modeling and analysis applications.

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New DWF Import and Export Support

With Vectorworks 2013, you can now import and export the Autodesk® DWF file format.

F A L S D

New Rhino Import/Export Support

Effortlessly work with Vectorworks and Rhinoceros with the addition of import and export support for Rhinoceros 3DM files.

F A L S D

New FBX and COLLADA File Export

With Renderworks 2013, you can now easily work with additional, popular 3D applications such as Google Earth, SketchUp, 3ds Max, and others using the COLLADA and FBX file export.

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Importing/Exporting
New file format support for Rhinoceros, DWF, FBX, COLLADA, and gbXML.

New DXF/DWG Import and Export Capabilities
Several DXF/DWG improvements include batch exporting, support for true colors, conversion resolution adjustments, and flattening 3D objects.

New DXF/DWG Import and Export Capabilities

You asked and we listened. With Vectorworks 2013, we've added several improvements and capabilities to the DXF/DWG import and export process that will dramatically improve the interoperability process.

- Now you can export Vectorworks 3D objects as 2D flattened graphics in the DWG model space.

- A new command lets you perform a batch export for DXF/DWG from multiple files at the same time.

- A new option allows you to make 2D and 3D conversion resolution adjustments during DXF/DWG imports.

- A new option lets you choose true (RGB) or indexed colors on DXF/DWG exports.

- A new DXF/DWG import feature improves the speed of your imports by alerting you when complex hatches with multiple boundaries are found. This alert gives you the option to skip importing the hatch, convert hatches to lines, or proceed with the import.

F A L S D

Dynamic Database Table Update

Databases connected to Vectorworks files through ODBC now dynamically update their database table rows when adding or removing record instances of a connected record format. In addition, you can now automatically create record formats from database tables and create database tables from record formats.

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Improved ODBC Edit Object Connection

Enhancements let you edit the connection for multiple objects at one time, allowing generalized value definition of the SQL query sentence for the objects simultaneously.

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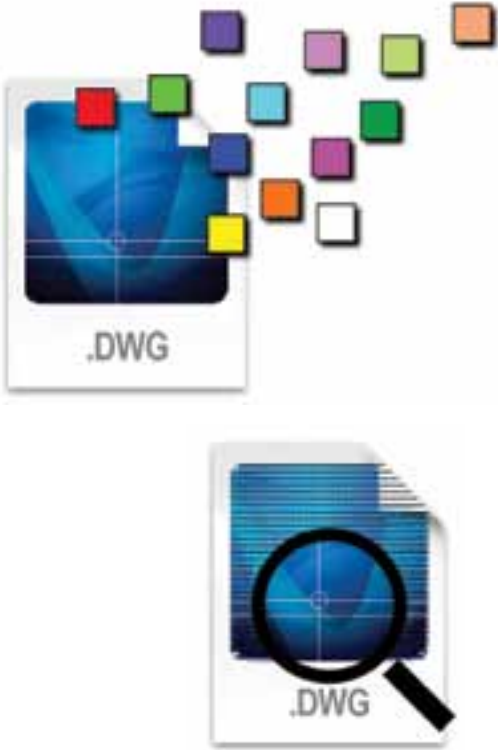
EVOLVE WITH INTEGRATED, ROBUST RENDERING TOOLS

Rendering and visualization have never been this easy. Achieve high-quality renders at the click of the mouse with new, easy-to-use, time-saving rendering features such as non-blocking rendering, physical sun and sky, and fantastic new textures from *Arroway Textures™*. Then, collaborate with other rendering and modeling solutions with seamless export to CINEMA 4D, and new support for the FBX/COLLADA file format.

Improved CINEMA 4D Export

The Export to CINEMA 4D and Send to CINEMA 4D commands are now available to our Fundamentals customers in addition to our Renderworks users. Improvements when exporting from Vectorworks and Renderworks to CINEMA 4D ensure that the structure and naming of geometry, materials, and textures is consistent with the data that comes from the Vectorworks file, with the assistance of an intelligent Merge Changes dialog box in CINEMA 4D.
In addition, the resulting .C4D file size has been reduced by up to 50%.

F R

Non-blocking Rendering

Perhaps one of the most significant time-savers is the addition of non-blocking rendering. Now you are free to continue working in your project while a scene is rendering sheet layer viewports or images from the Render Bitmap tool.

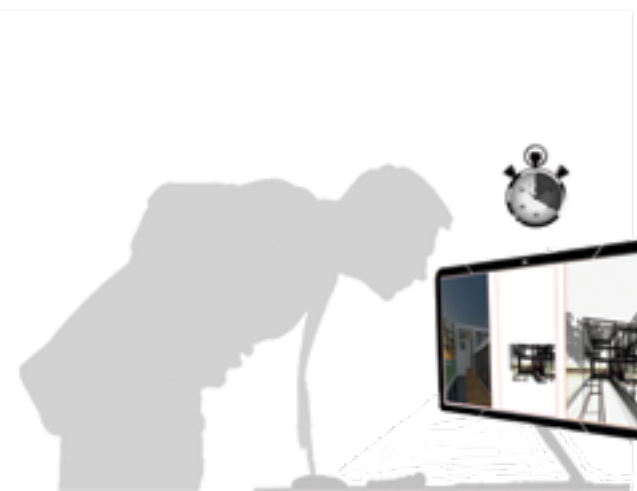R

Improved CINEMA 4D Export
Structure and naming of geometry, materials, and textures is consistent with the data that comes from the Vectorworks file.

Non-blocking Rendering
Continue working in your project while a scene is rendering.

Physical Sun and Sky

The physical sun and sky backgrounds provide more natural lighting that automatically responds to a site's location, as well as the date and time of day.

R

New *Arroway Textures* Import

We've added one of the highest-quality texture libraries to Renderworks version 2013. Now you have access to a default library of image-based *Arroway* Textures for wood veneers, concrete, wood flooring, stonework, tiles, and other construction materials. An integrated menu item lets you easily import higher-resolution versions of these textures purchased directly from *Arroway* Textures.

R

Physical Sun and Sky
Get more natural lighting in your renderings from the new physical sun and sky backgrounds.

New *Arroway Textures* Import
Now you have access to the highest-quality textures on the market from *Arroway* Textures.

EVOLVE WITH IMPROVED EFFICIENCY

Vectorworks 2013 reduces the time you spend clicking around and answers some of the most sought-after requests. Improvements let you create custom line types, add images in worksheet cells, enjoy uncropped perspective projection, and generate hyperlinks.

Images in Worksheet Cells
Add images from any type of Vectorworks object to the cells in a Vectorworks worksheet.

Hyperlinks

A great addition to the Vectorworks program is a new hyperlink feature. With Vectorworks 2013, you can create hyperlinks with associated thumbnails or symbols to launch websites containing product manufacturer data, open other Vectorworks documents, open a folder, display saved views or sheet layers, or open files such as images, PDFs, movies, and more. Plus, certain hyperlinks are preserved when exporting to PDF.

F A L S D

Improved Navigation Graphics

For Vectorworks 2013, we've dramatically increased the speed at which you can move around your drawing. No matter what your design discipline is, you'll love this feature. Panning and zooming improvements are applied in 2D and 3D, so you get significantly faster graphic re-draw. Plus, you'll get much quicker OpenGL and 3D wireframe previews while rotating.
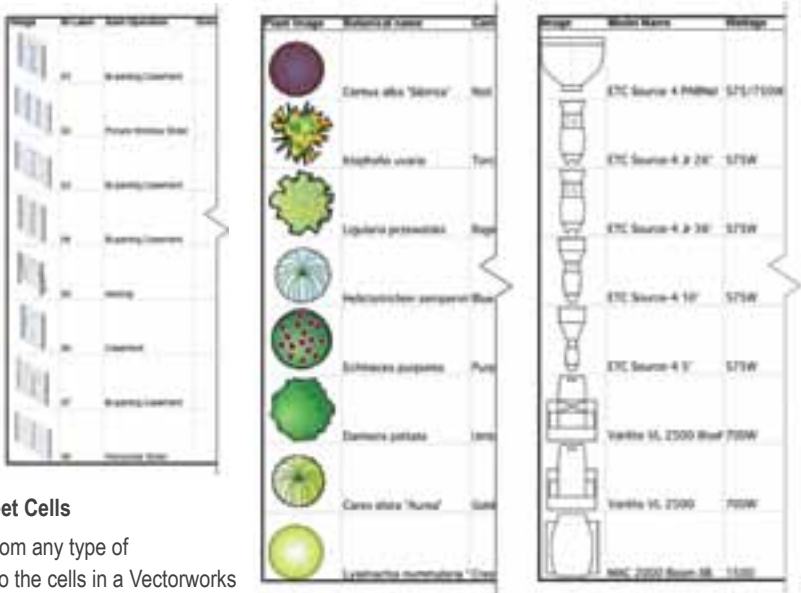
F A L S D

Images in Worksheet Cells

Easily add images from any type of Vectorworks object to the cells in a Vectorworks worksheet. The image can be either a thumbnail of the object or a sample of the object's 2D attributes. There are preferences for customizing the image display, including the size, view, render mode, and margin. With this new capability, you can easily incorporate door and window elevations, rendered isometric views of any symbol, legends for plant lists, hatches, fill patterns, wall or slab types, and more.

A L S D

Improved Navigation Graphics
Significantly faster graphic re-draw with improved navigation graphics.

Hyperlinks
Create hyperlinks to websites, files, or locations in your project with this new object.

Class Standard Naming for Symbol Import

The standard naming for classes now also applies when importing symbols from default content. When you insert these symbols, their class names will automatically comply with standards.

A **L** **D**

Windows Explorer Document Plug-in

A Windows Explorer plug-in for Vectorworks documents has been added, providing you with additional details about the file when in Windows Explorer, displaying an image preview of the file or an icon, and adding the ability to search for text strings inside Vectorworks files.

F **A** **L** **S** **D**

Custom Line Types

Dashed lines and custom line types are now resources that can be easily created and shared. The new feature enables you to base line types on Vectorworks objects to create a repeating pattern. Since line types are resources, you can easily edit them, share them, and set teamwork standards.

F **A** **L** **S** **D**

Windows Explorer Document Plug-in
Windows users now see an image preview of the Vectorworks file.
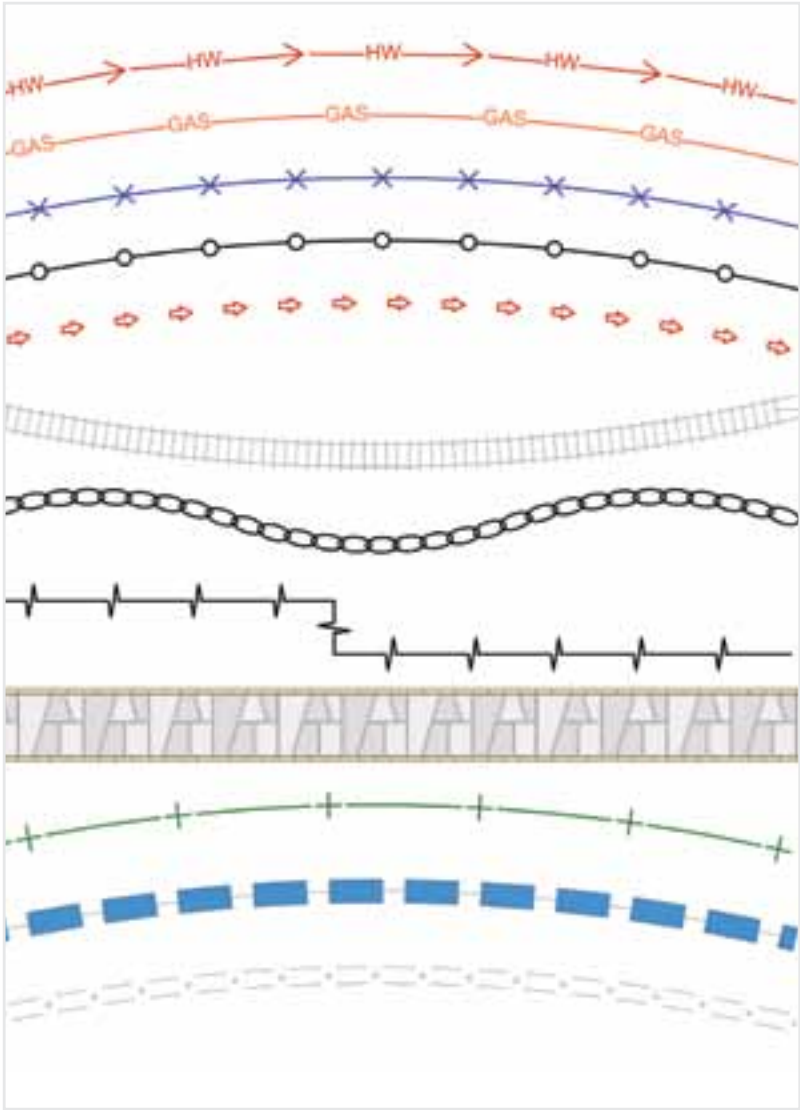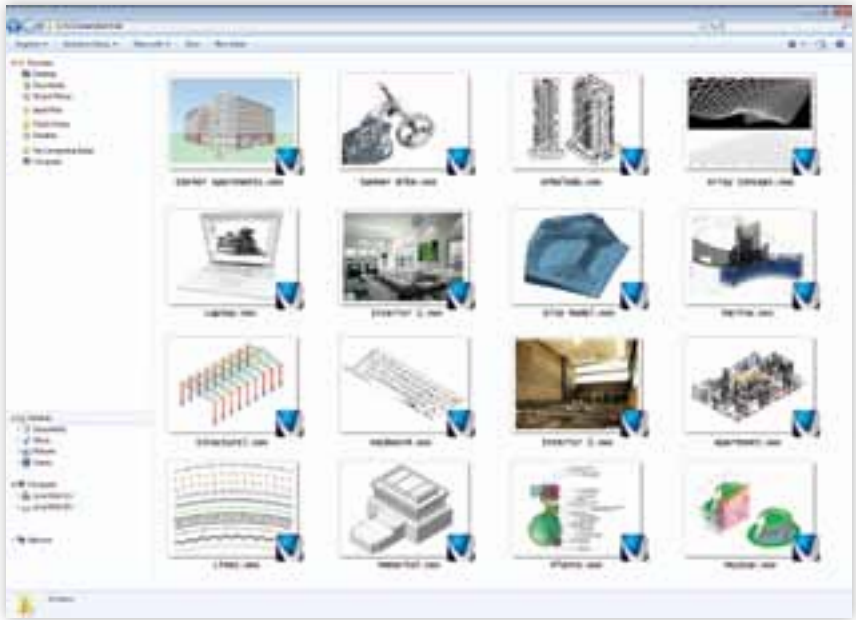
Custom Line Types
You can create and save custom repeating patterns using the new custom line types.

**New Class Creation Options
for Advanced Section Properties**

A new option allows you to create a new class
from within the advanced section properties
of a section viewport.

`A` `L` `S` `D`

Golden Rectangle

A new rectangle creation constraint lets you easily
create rectangles with golden ratio proportions
(approximately 1:1.618).

`F` `A` `L` `S` `D`

Align/Distribute Leader Lines Command

The new Align/Distribute Leader Lines command
enables you to automate the alignment and
distribution of a tag's leader lines for objects such as
callouts, leader lines, plants, hardscapes, stakes,
landscape areas, existing trees, and redlines.

`F` `A` `L` `S` `D`

Sheet Layer Ordering

A new stacking order column has been added to
the Organization dialog box and Navigation palette,
so you can easily change the sheet layer stacking
order by drag and drop.

`F` `A` `L` `S` `D`

Collapsible Classes

You can now choose to display classes inside the
Organization dialog box and Navigation palette in
hierarchical form. You'll be able to hide groups of
classes you don't need to see.

`F` `A` `L` `S` `D`

Collapsible Classes
You can now display classes
in hierarchical form.

**Align/Distribute Leader
Lines Command**
Automate the alignment and
distribution of a tag's leader lines.
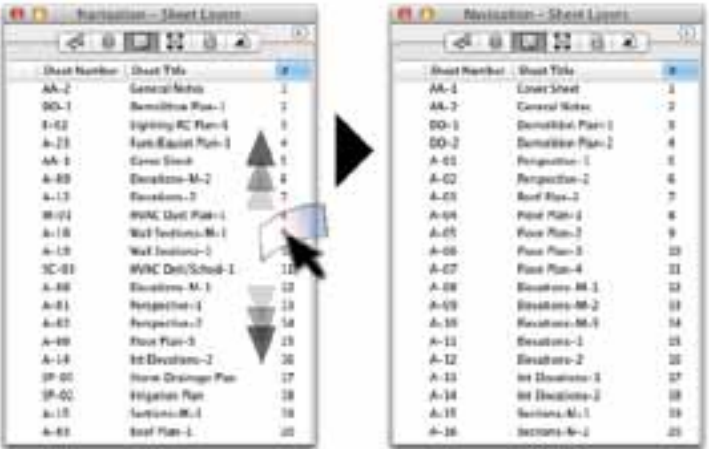
Sheet Layer Ordering
Easily change sheet layer stacking order by drag and drop.

Courtesy of PRG, Hamburg

EVOLVE WITH THE LEADER IN ENTERTAINMENT DESIGN

How do you make the industry standard for lighting, scenic, and event design better? Simple. You re-engineer the cornerstone tools such as the lighting device to provide robust new capabilities and significant speed improvements. Plus, you add great new tools like the speaker and speaker array objects to address the growing needs of A/V professionals.

Lighting Device Parameters

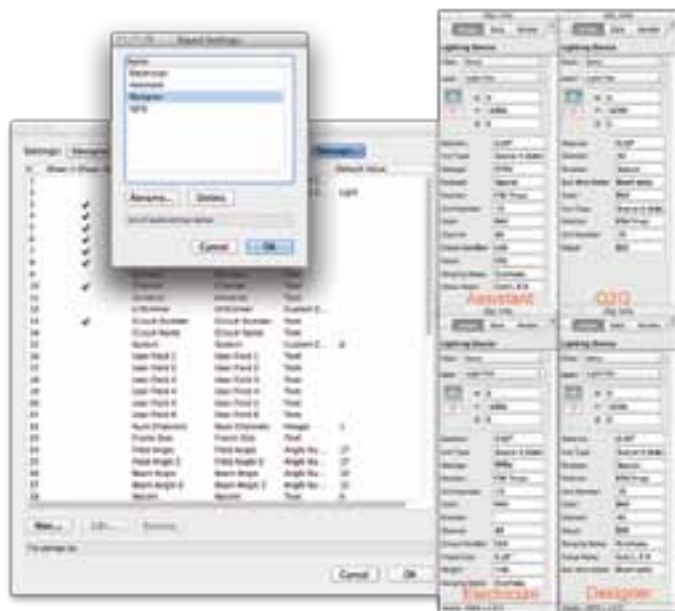The lighting device has received some major upgrades. You can now fully customize the lighting device parameter display with a new dialog box that allows you to add custom fields and re-order and re-name existing parameters. You can also add unlimited label legend labels to lighting devices.

Lighting Device Speed Enhancements

The lighting device object has been completely re-engineered to offer you enhanced capabilities and speed for new reset and regeneration times that are ten times faster than in the 2012 version.
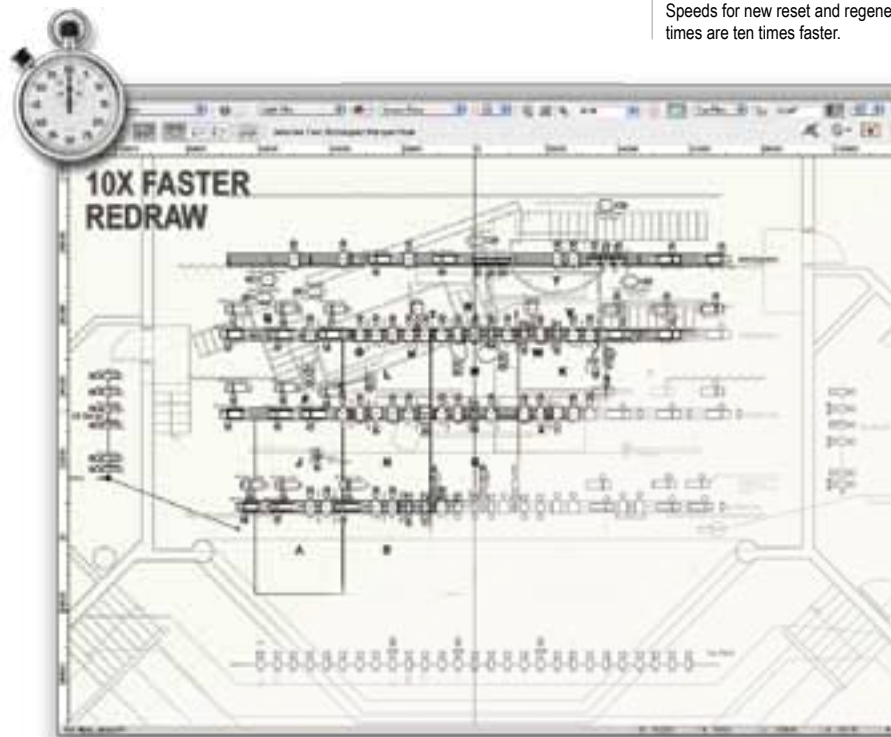
Lighting Device Speed Enhancements
Speeds for new reset and regeneration times are ten times faster.

Lighting Device Parameters
Fully customize the lighting device parameter display.

Lighting Device Colors

You can now automatically assign colors to your lighting devices through preferences or by class. You can also assign parts of the lighting device to different classes, giving you complete control over the look of your light plot.

S D

New Speaker Objects

New speaker and speaker array objects, originally from Landru Design, let you effortlessly create speaker system layout drawings and perform basic audio coverage analyses.

S D

New Speaker Objects
Effortlessly create speaker system layout drawings.

Lighting Device Colors
Automatically assign colors to your lighting devices.

EVOLVE WITH THE LEADER IN SITE DESIGN

Vectorworks 2013 has simplified the way you design, plan, document, and analyze sites with a series of improvements to site modifiers, pad generation, and planting definitions.

Improved Plant Settings

The Plant Settings and Plant Definition dialog boxes have been reorganized and improved to make the customization and editing of plant definitions and plant settings easier.

`L` `D`

Site Model Import Improvement

3D locus objects can now be created from an imported survey file, resulting in nimble files without stake object data for situations where the data is not needed.

`A` `L` `D`

Create Pad from Grade Limits

A new Create Pad from Grade Limits command automatically creates a balanced pad modifier from selected grade limits, so the amount of cut is equal to the amount of fill.
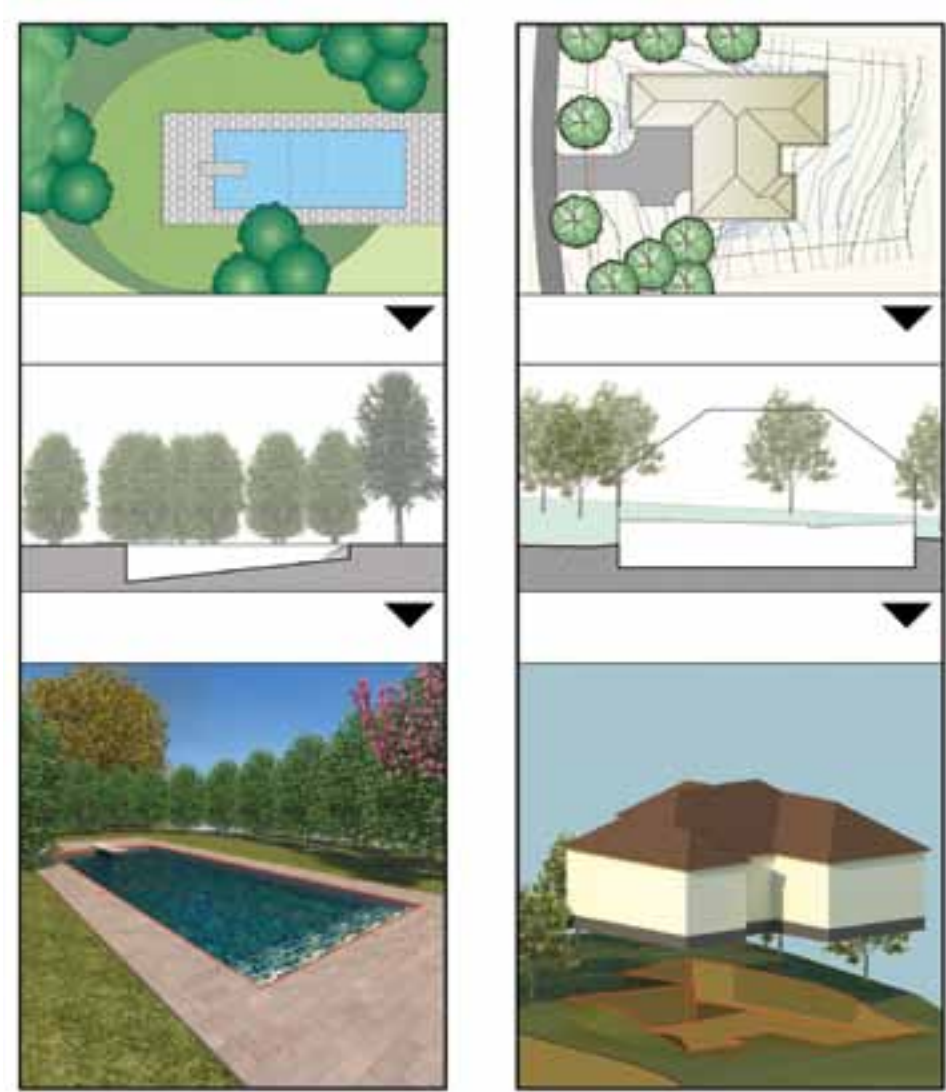
`L` `D`

Improved Site Modifier

You now have a new option to create a pad with a retaining edge site modifier, providing you with an easy way to define an edge around the pad that can form pits in the site model surface.

`L` `D`

Improved Site Modifier
Create a pad with a retaining edge site modifier.

Miscellaneous Site Model Improvements

A series of beneficial enhancements have been made to improve the functionality of site models. Of particular note, you now have the ability to specify graphic attributes of the site model by class.

`A` `L` `D`

Improved Plant Behavior

Individual plants within plant groups can be randomly scaled and rotated for a more realistic look. Plants in curved rows can now be positioned tangentially, which is particularly effective for hedges. 2D plant shadows can be optionally varied depending on the plant height. Additionally, variations of plant settings can exist for the same definition, reducing extra work.

`L` `D`

Improved Plant Behavior
Choose alignment options and randomly scale and rotate plants for a more realistic look.

Miscellaneous Site Model Improvements
Automatically create a balanced pad modifier from selected grade limits.
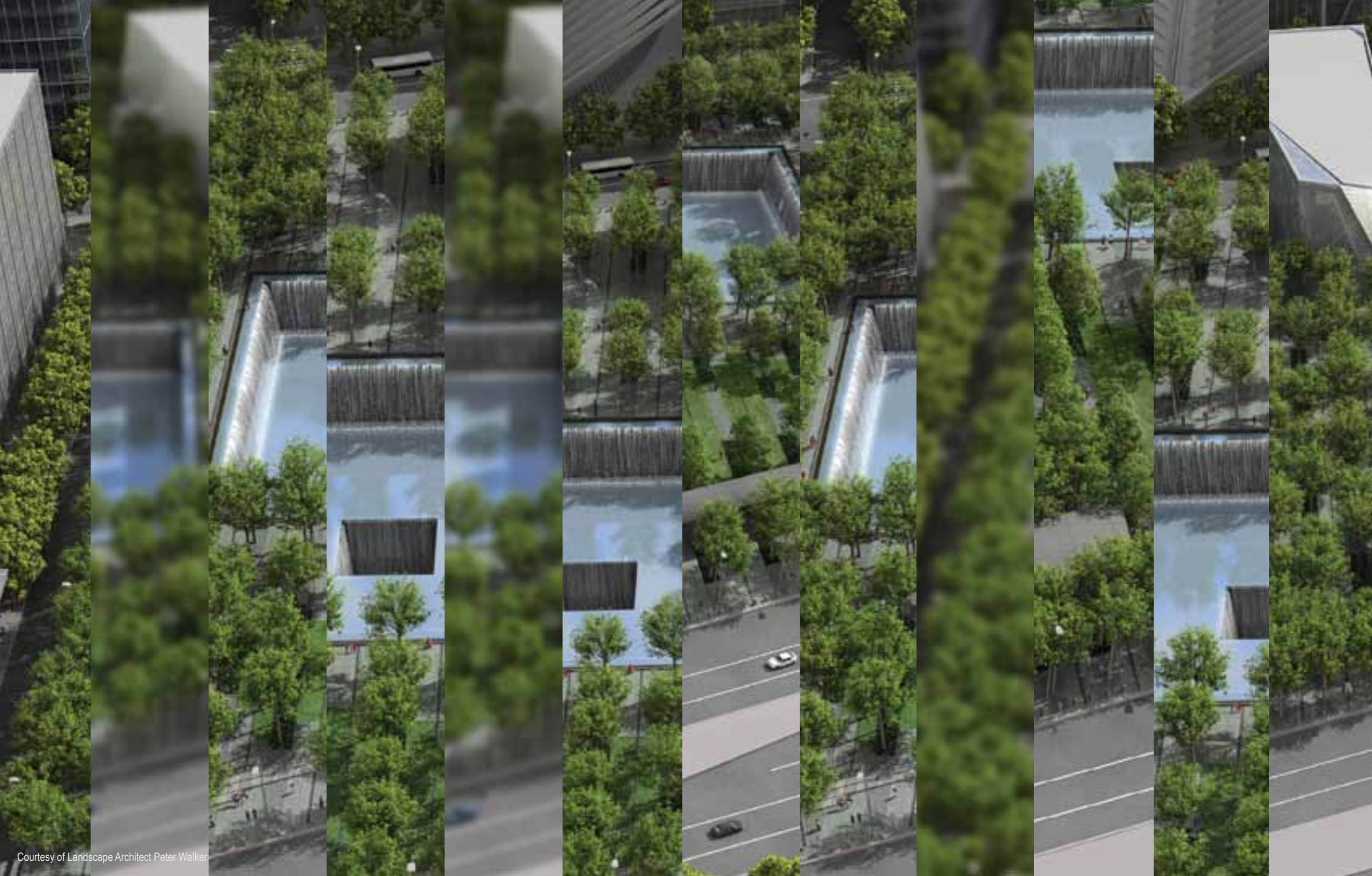
EVOLVE WITH NEW AND UPDATED CONTENT

With the release of Vectorworks 2013, a variety of new and improved content in the form of symbols, textures, and other resources has been added. And better yet, a long list of manufacturer-specific content is now available for subscribers of Vectorworks Service Select.

New Default Content

New resources are installed by default with this release of Vectorworks 2013. New content includes:

- Pre-set schedules and legends with images for the new worksheets image feature

  `F` `A` `L` `S` `D`

- Detail symbols for detail callout markers

  `A` `L` `S` `D`

- A series of natural daylight resources based on the new physical sun and sky feature

  `R`

- A variety of custom line type resources

  `F` `A` `L` `S` `D`

- A variety of configurations and styles for door leaves

  `A` `L` `S` `D`

- Default hyperlink symbols

  `F` `A` `L` `S` `D`

- Default textures from **Arroway** *Textures*, and high-quality default textures for water and glass

  `R`

- Updated Pantone® colors including new 336 coated and 336 uncoated colors added to the COLOR BRIDGE® set

  `F` `A` `L` `S` `D`

- High-quality metal textures

  `R`

Plus, when you're a member of **Vectorworks Service Select**, you'll also have access to these exclusive content resources:

- The latest products for the Herman Miller Typicals systems furniture including Abak Environments, Action Office System, Canvas Office Landscape, Compass System, My Studio Environments, and Resolve System products

  `A` `D`

- An architectural lighting library of decorative and track lighting that includes new fixtures and light objects you can use for improved rendering

  `A` `D`

- Vectorworks Spotlight library updates to JB Lighting, Strong/Xenotech, Chroma Q, Morpheus, ARRI, Color Kinetics, High End, and Selecon lighting instruments

  `S` `D`

- New InLight gobos for Vectorworks Spotlight

  `S` `D`

- Additional textures from **Arroway** *Textures*

  `R`

EVOLVE WITH VECTORWORKS 2013.

New Software Icon
The Vectorworks software icon has a new look, which will debut in the 2013 version.

VECTORWORKS 2013 FEATURE MATRIX

	F Fundamentals	A Architect	L Landmark	S Spotlight	D Designer	R Renderworks
BEST IN 3D MODELING						
Surface Array		✓	✓	✓	✓	
Full Screen Perspective Projection	✓	✓	✓	✓	✓	
Clip Cube	✓	✓	✓	✓	✓	
Improved Walkthrough Tool	✓	✓	✓	✓	✓	
Enhanced Graphical Feedback for the Rotate Tool	✓	✓	✓	✓	✓	
Display Planar Objects in Section Viewports		✓	✓	✓	✓	
Performance Improvements in Hidden Line Rendering	✓	✓	✓	✓	✓	
BETTER BIM TOOLS						
Auto Hybrid		✓	✓	✓	✓	
Create Detail Viewport		✓	✓	✓	✓	
Improved Bounding of Spaces		✓			✓	
Parasolid-based Roofs	✓	✓	✓	✓	✓	
Inserting Dormers and Skylights in Roof Faces	✓	✓	✓	✓	✓	
Enhanced IFC Usability		✓			✓	
Enhanced Door and Window Capabilities		✓	✓		✓	
Inner Boundary Mode for the Slab Tool		✓			✓	
Wall Re-engineering	✓	✓	✓	✓	✓	
Improved Stair Railings		✓			✓	
Optimized Space Object		✓			✓	

| | **F** Fundamentals | **A** Architect | **L** Landmark | **S** Spotlight | **D** Designer | **R** Renderworks |

GREATER FILE INTEROPERABILITY

	F	A	L	S	D	R
New gbXML Export		✓			✓	
New DWF Import/Export Support	✓	✓	✓	✓	✓	
New Rhino Import/Export Support	✓	✓	✓	✓	✓	
New FBX and COLLADA Export						✓
Dynamic Database Table Update		✓	✓	✓	✓	
Improved ODBC Edit Object Connection		✓	✓	✓	✓	
New DXF/DWG Import/Export Capabilities	✓	✓	✓	✓	✓	

INTEGRATED, ROBUST RENDERING TOOLS

	F	A	L	S	D	R
Non-blocking Rendering						✓
Improved CINEMA 4D Export	✓	✓	✓	✓	✓	✓
Physical Sun and Sky						✓
New *Arroway* Textures Import						✓

IMPROVED EFFICIENCY

	F	A	L	S	D	R
Improved Navigation Graphics	✓	✓	✓	✓	✓	
Images in Worksheet Cells		✓	✓	✓	✓	
Custom Line Types	✓	✓	✓	✓	✓	
Hyperlinks	✓	✓	✓	✓	✓	
Windows Explorer Document Plug-in	✓	✓	✓	✓	✓	
Class Standard Naming for Symbol Import		✓	✓		✓	
Align/Distribute Leader Lines Command	✓	✓	✓	✓	✓	
Collapsible Classes	✓	✓	✓	✓	✓	

	F Fundamentals	**A** Architect	**L** Landmark	**S** Spotlight	**D** Designer	**R** Renderworks
IMPROVED EFFICIENCY (CONTINUED)						
New Class Creation Options for Advanced Section Properties		✓	✓	✓	✓	
Sheet Layer Ordering	✓	✓	✓	✓	✓	
Golden Rectangle	✓	✓	✓	✓	✓	
THE LEADER IN ENTERTAINMENT DESIGN						
Lighting Device Parameters				✓	✓	
Lighting Device Speed Enhancements				✓	✓	
Lighting Device Colors				✓	✓	
New Speaker Objects				✓	✓	
THE LEADER IN SITE DESIGN						
Improved Site Modifier			✓		✓	
Improved Plant Behavior			✓		✓	
Improved Plant Settings Dialog			✓		✓	
Miscellaneous Site Model Improvements		✓	✓		✓	
Site Model Import Improvement		✓	✓		✓	
Create Pad from Grade Limits			✓		✓	
NEW AND UPDATED CONTENT						
Pre-set schedules and legends with images for the new Images in worksheets feature		✓	✓	✓	✓	
Detail symbols for detail callout markers		✓	✓	✓	✓	
A series of natural resources based on the new physical sun and sky feature						✓

	F Fundamentals	A Architect	L Landmark	S Spotlight	D Designer	R Renderworks

NEW AND UPDATED
CONTENT (CONTINUED)

	F	A	L	S	D	R
A variety of custom line type resources	✓	✓	✓	✓	✓	
A variety of configurations and styles for door leaves		✓	✓	✓	✓	
Default hyperlink symbols	✓	✓	✓	✓	✓	
Default textures based on **Arroway** Textures, and high-quality default textures for water and glass						✓
Updated Pantone® colors including new 336 coated and 336 uncoated colors added to the COLOR BRIDGE® set	✓	✓	✓	✓	✓	
High-quality metal textures						✓
*Herman Miller Typicals system furniture		✓			✓	
*Architectural lighting decorative and track		✓			✓	
*Updated JB Lighting				✓	✓	
*Updated Strong/Xenotech				✓	✓	
*Updated Chroma Q				✓	✓	
*Updated Morpheus				✓	✓	
*Updated ARRI				✓	✓	
*Updated Color Kinetics				✓	✓	
*Updated High End				✓	✓	
*Updated Selecon				✓	✓	
*New InLight Gobos				✓	✓	

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System Recommendations

Mac OS X 10.6.8 or later
QuickTime
Intel Core 2, 2.0GHz or better
DVD-ROM drive (dual layer)

Windows XP SP 3
Windows Vista SP 2
Windows 7 SP 1
QuickTime 7.7.0 to 7.7.2 (higher versions not recommended)
Pentium 2GHz or better
DVD-ROM drive (dual layer)

RAM*

1GB minimum
4GB highly recommended
8GB recommended for large files and complex renderings

Graphics

1024x768 minimum
1280x800 recommended
512MB VRAM minimum, 1GB+ VRAM recommended for high-quality rendering

* Vectorworks 2012 and Vectorworks 2013 contained improvements that placed
significantly higher demand on the graphics hardware. The performance and
quality of the graphics provided by accelerated navigation and improved
OpenGL shadows depend directly on the speed and memory of the graphics
card. These new features have the potential to provide a very fast and fluid
experience when used on capable hardware, and a noticeably slower experience
when used on older or incompatible hardware. In general, the more powerful
your video card is, the better your Vectorworks experience will be.

For the latest information on our video card recommendations for
Vectorworks 2013, see the following Knowledgebase article:
http://kbase.vectorworks.net/questions/714.

See www.vectorworks.net/sysreq/ for updated information.