

WHAT'S NEW

2016



**VECTORWORKS**<sup>®</sup>  
A NEMETSCHEK COMPANY

# YOU SEE THE WORLD DIFFERENTLY ALL DESIGNERS DO

You're driven to analyze the form and function of your surroundings to create unmatched experiences. Vectorworks® 2016 presents a unique set of tools to realize those visions. It feels like you think. It's in tune with the designer's eye.

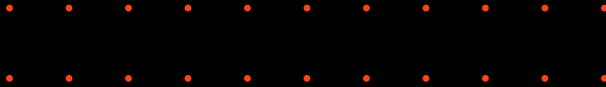
The latest release of the Vectorworks line of CAD and BIM design solutions delivers an exciting suite of capabilities that will enhance your workflows and improve your design process. From streamlined project sharing, which allows your team to work concurrently on the same Vectorworks file, to subdivision modeling tools based on the design techniques of Pixar Animation Studios, designers will be poised to transform the world like never before.

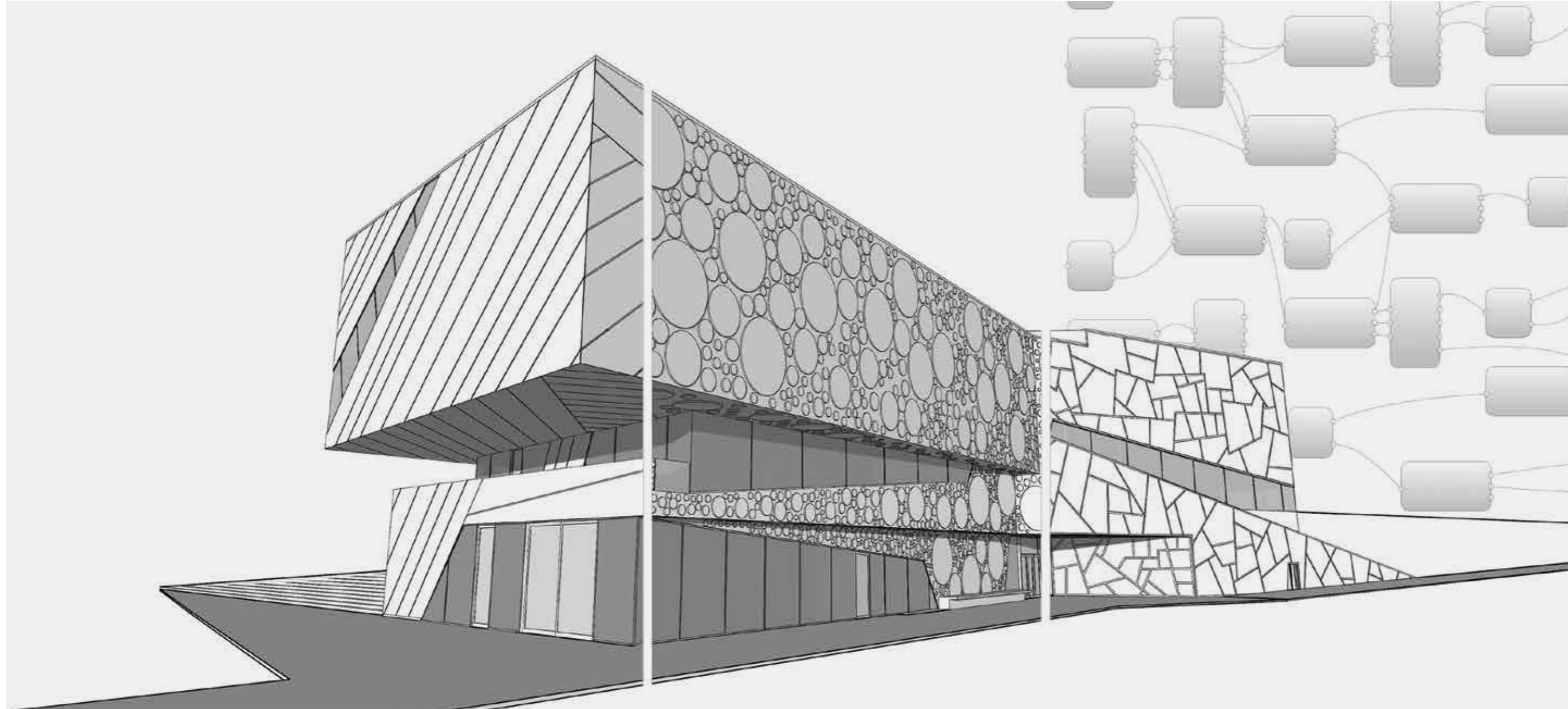
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01 EXPLORE THE  
**POSSIBILITIES**

Exploration is essential for the evolution of design. The Vectorworks family of software empowers you to bring your design ideas into the virtual world to investigate and discover, manipulate and examine. With us on your side, you have a suite of intuitive, flexible tools that encourage you to create, explore, and evolve any form.





# MARIONETTE

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Graphical scripting will play a significant role in the workflows of the future. This functionality, when built into an intelligent information modeling application, presents designers with unlimited opportunities to generate, define, build, and explore form and function throughout the design process.

Integrated directly into Vectorworks 2016, Marionette is the first and only cross-platform graphical scripting tool for the AEC, entertainment, and landscape design industries.

Marionette is a Python®-based scripting tool that operates within the Vectorworks platform; it delivers a robust and scalable way to program well beyond the confines of traditional design software. When you use Marionette, you can create visual scripts that take advantage of the superior 2D interface and robust 3D modeling capabilities that Vectorworks software offers, ushering in a new world of discovery that enhances your workflows and integrates seamlessly into your BIM environments.

The ability to orchestrate and dictate any form you envision is now in your hands.

02 CAPTURE YOUR  
**INSPIRATION**

Go beyond exploration, channeling your inspiration into unmatched designs. With the Vectorworks family of software, you'll keep your creative edge with the support from the industry's most powerful partner in the journey from simple sketch to final experience.



Design by Nick Whitehouse, Illuminate Entertainment, Inc. Photo by Ralph Larmann.



## POINT CLOUD SUPPORT

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FA L S D R

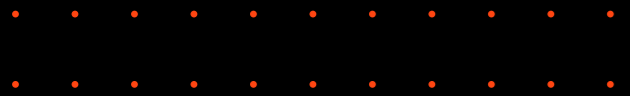
Field surveys and other manual methods used to capture existing spaces can now be replaced by Point Cloud Support. Using your preferred 3D scanning device, you can capture a physical location and import a 3D point cloud into Vectorworks software using PTS, E57, LAS, and XYZ file formats. Capture a perfect, full-color representation of any location and manipulate and measure it.

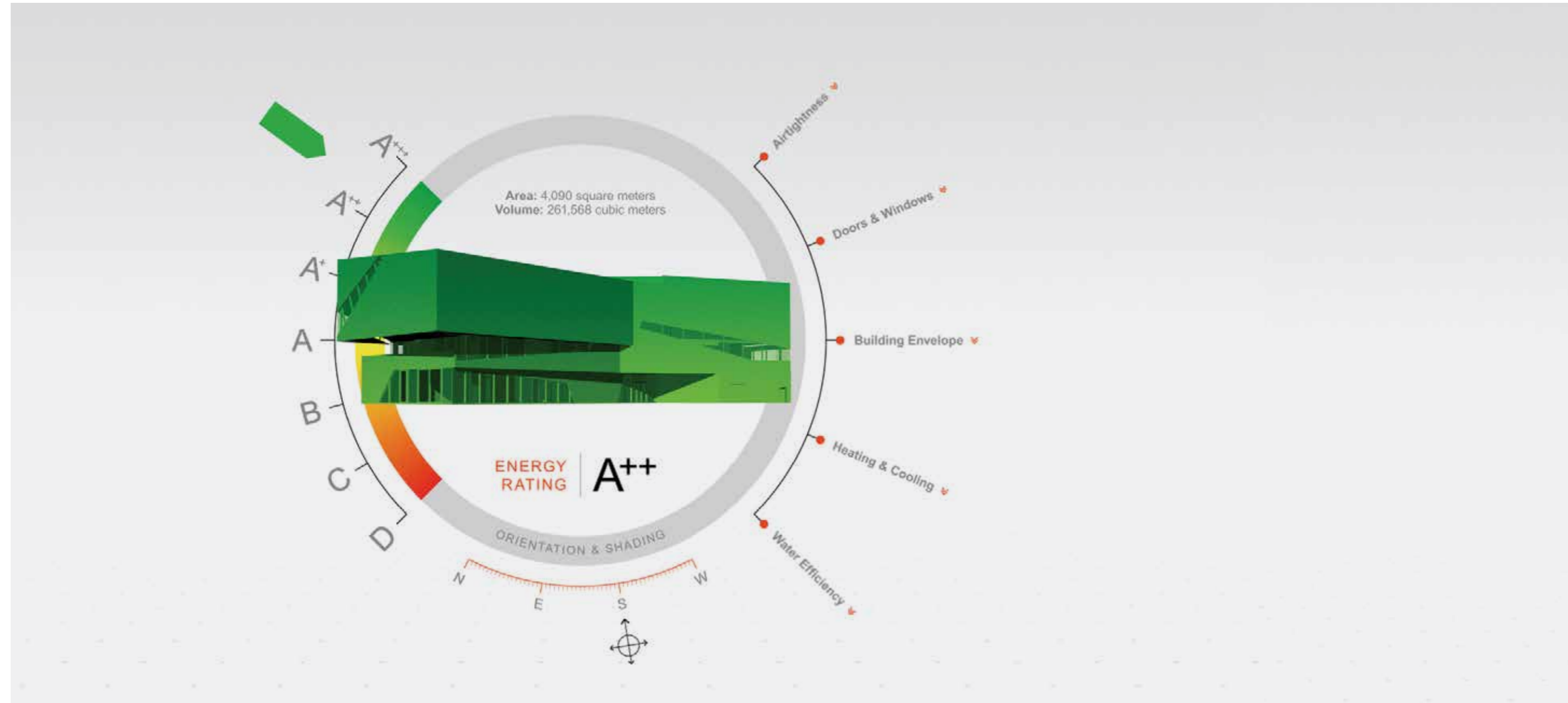
03 DEVELOP  
**YOUR DESIGN**

The transition from virtual to actual presents distinct challenges. The Vectorworks family of software offers first-class tools and customizable workflows to go beyond exploration and into development. The pragmatic issues of materiality, fabrication details, structure, and constructability come into play as your concepts mature into viable solutions.



Design by Holzer Kobler Architekturen. Photo by Jan Bitter. janbitter.de.





# ENERGOS

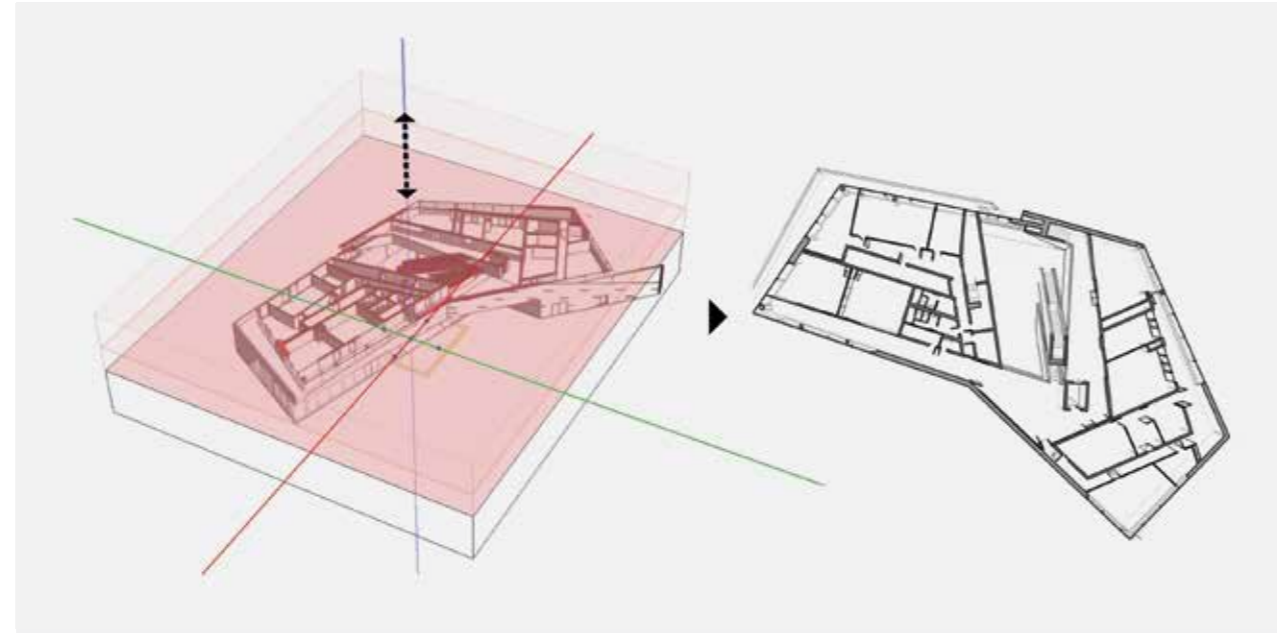
ⓕ ⓐ Ⓛ Ⓢ ⓓ Ⓡ

With the Vectorworks 2016 release, we're empowering our users to make sustainability a priority throughout the design process with our latest feature: Energos.

Based on the Passivhaus calculation method, the Energos module gives you – and your clients – a dynamic, intelligent gauge of a building's energy performance. Using convenient, color-coded graphics, you can measure a project's energy efficiency and make critical decisions about sustainability as your design evolves.



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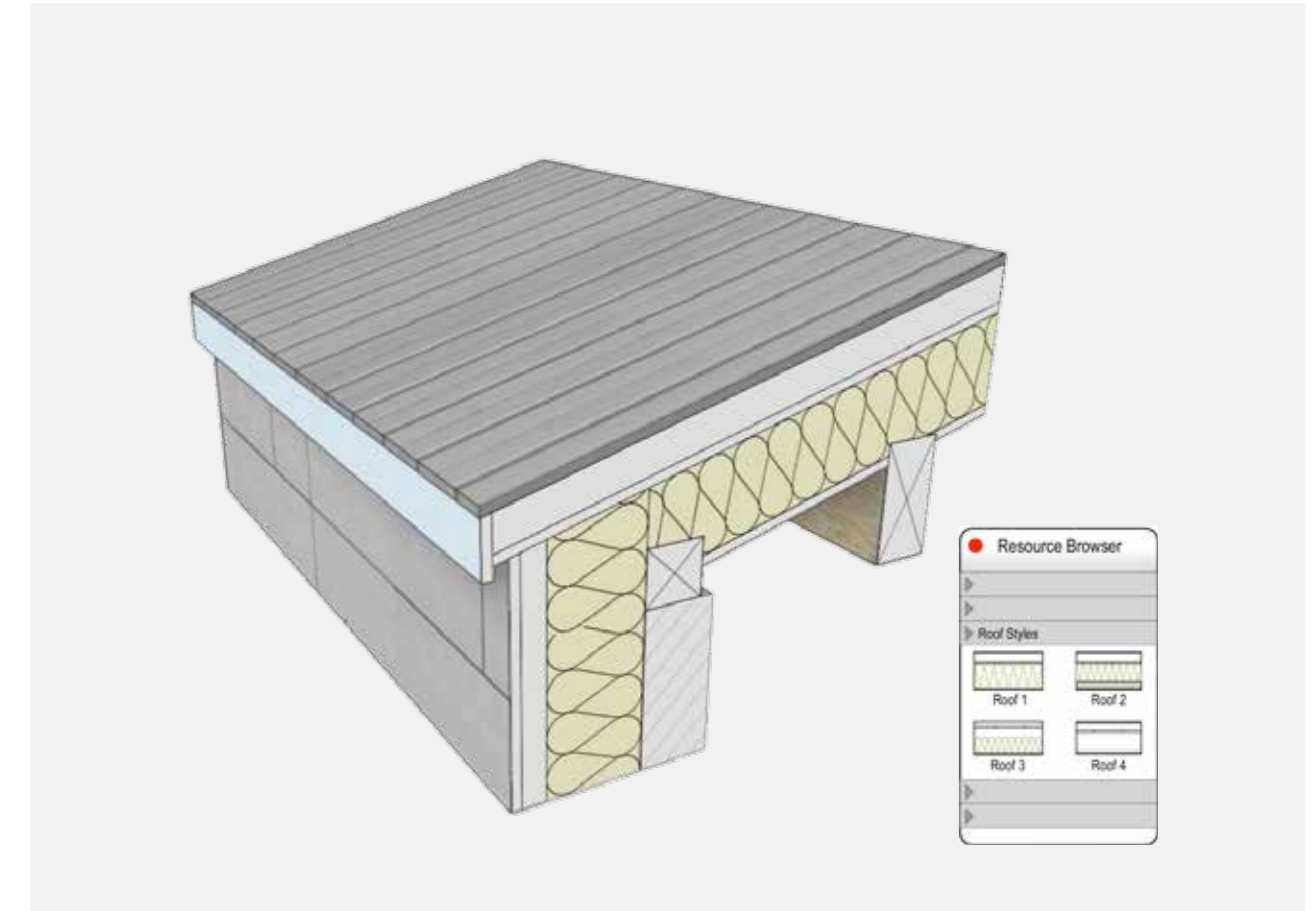
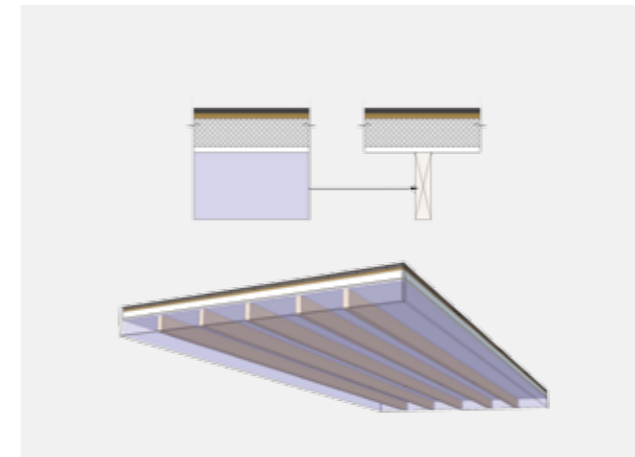
# HORIZONTAL SECTIONS FROM THE CLIP CUBE

Explore your design floor by floor, space by space, and section by section with horizontal sections from the clip cube. Use this command to isolate horizontal segments of your models to create conceptual, diagrammatic views, giving clients a deeper understanding of your design throughout the development process.

# ROOF COMPONENTS AND STYLES

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Ensure accuracy in the documentation of your sections and elevations with the new ability to define more realistic roof components that will interact with your wall components. Roof faces and roof objects now have the same component representation as walls and slabs, further extending the power of BIM in your designs.



# DOOR AND WINDOW IMPROVEMENTS

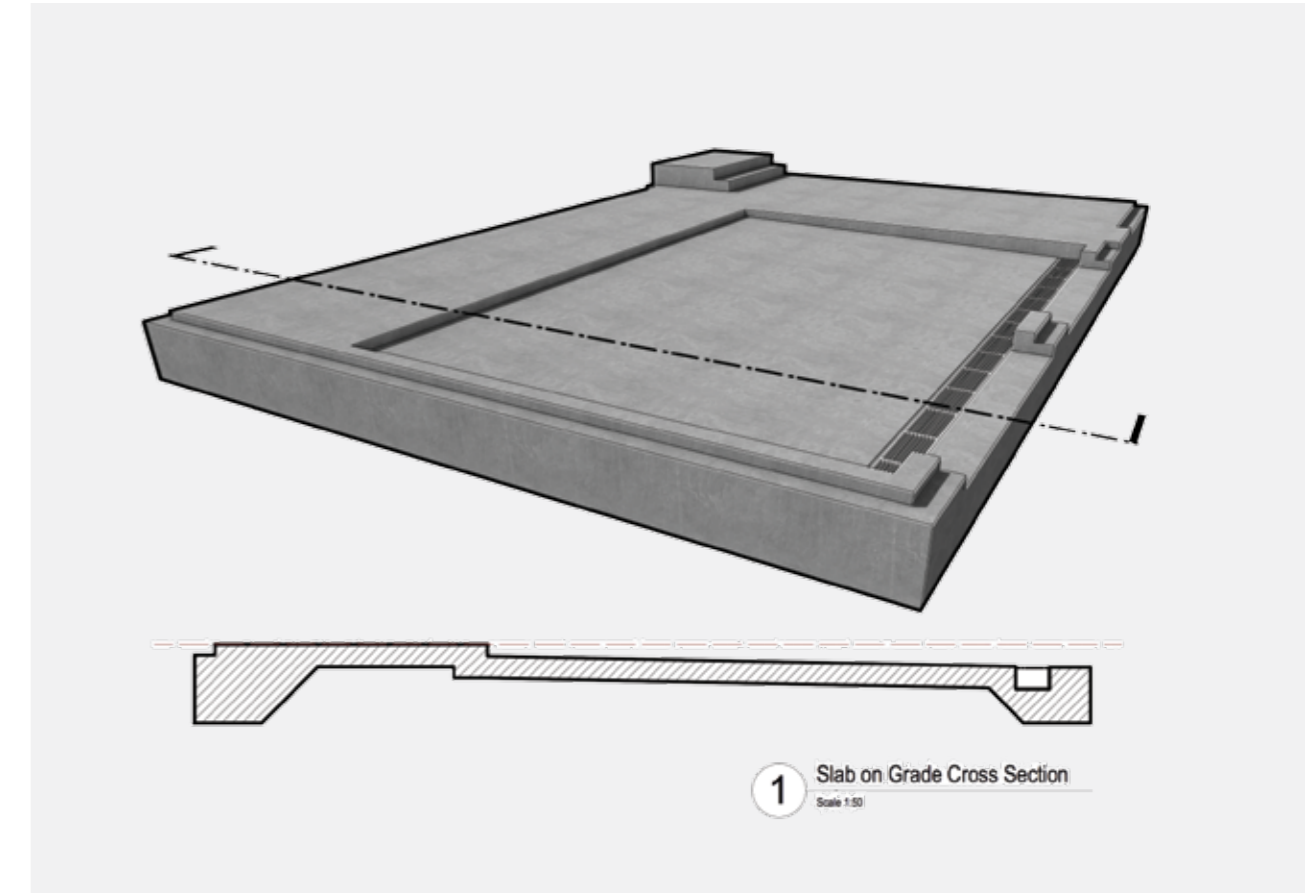
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In Vectorworks 2016, improved window and door functions give you more options to create compelling designs. From three- and four-panel sliding windows, to span wall options for corner windows, to control over door hardware positioning,\* designers will be able to add more depth (and more data) to their projects than ever before.

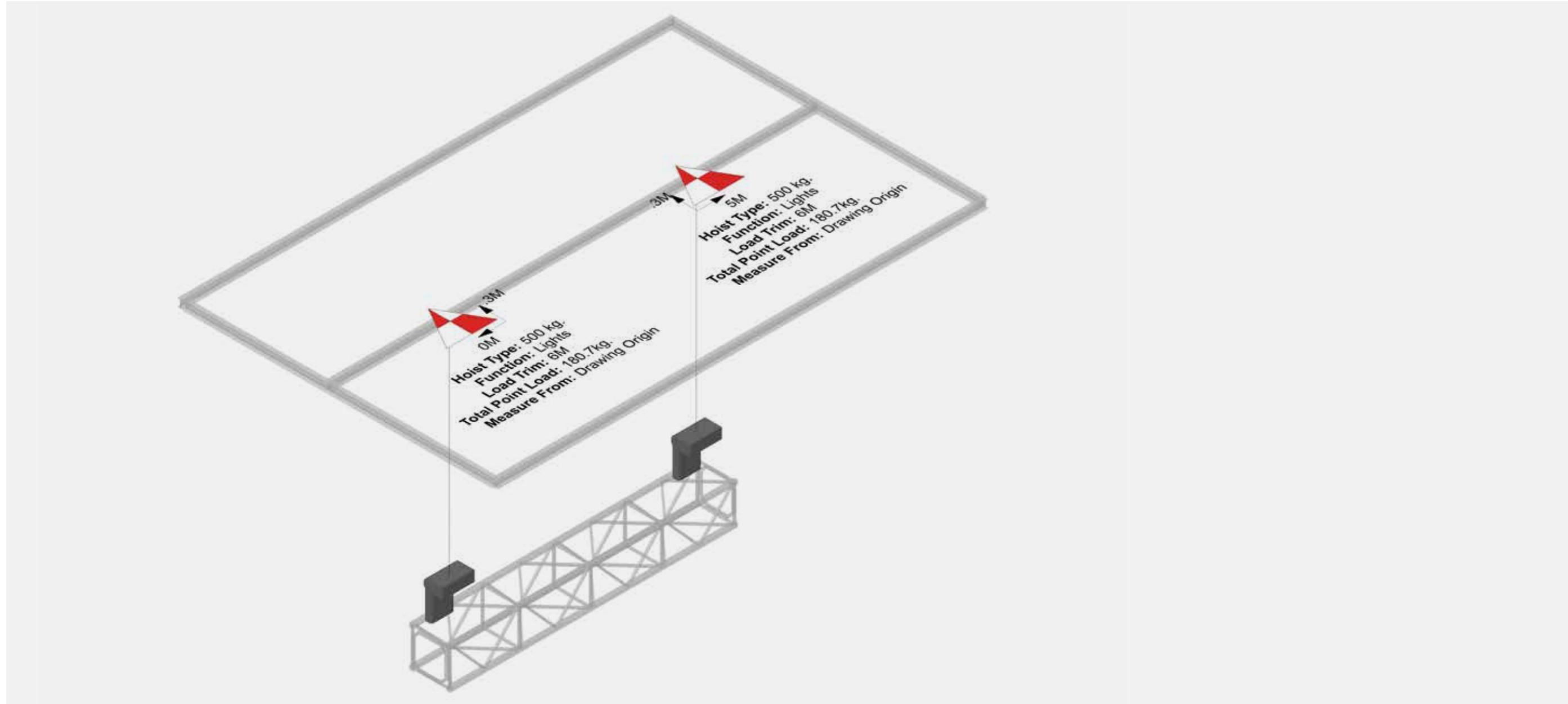
\* Hardware positioning features also available in Vectorworks Fundamentals

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# 3D MODIFIERS FOR SLABS

Geometric flexibility now extends to slabs, allowing you to shape their surfaces to match design and construction requirements.

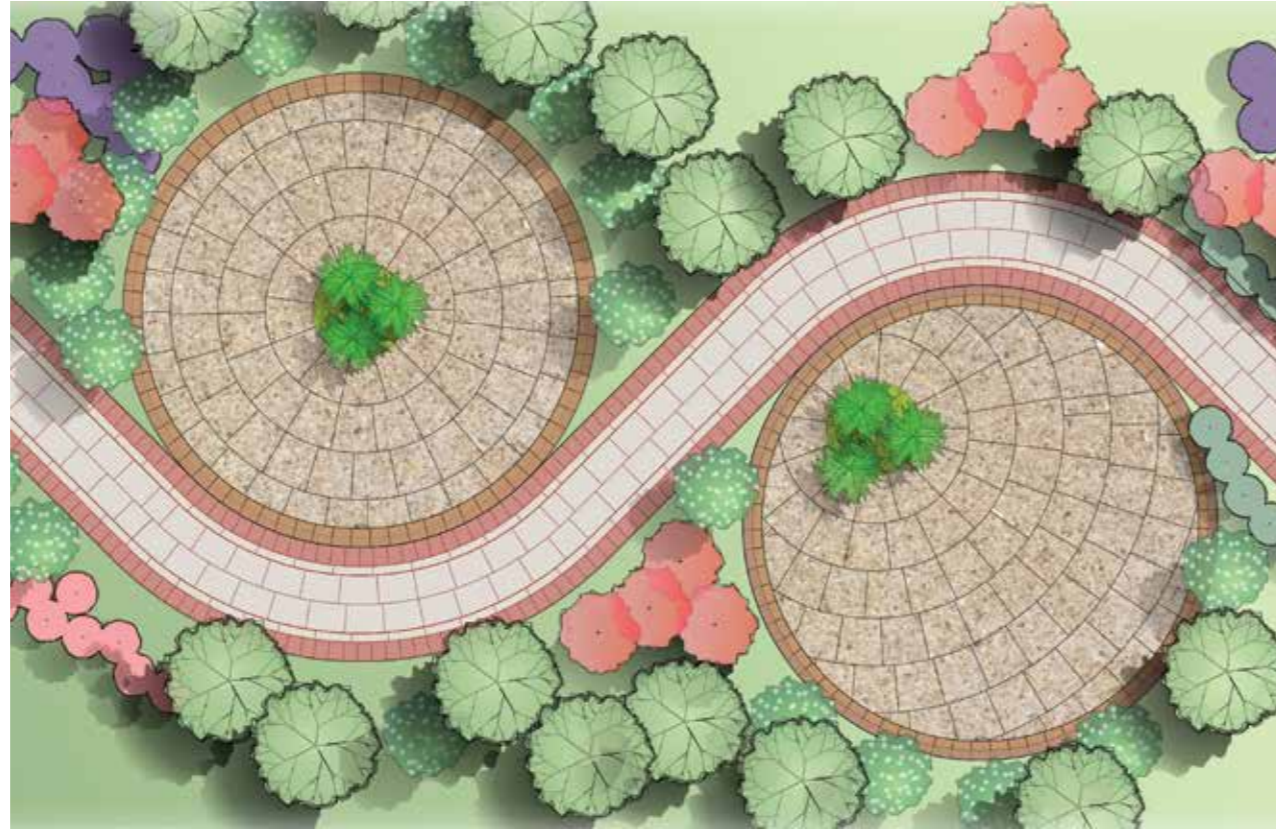


# HOIST TOOLS

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For entertainment industry designers, the Hoist tool now gives you the ability to design and document overhead stage rigging equipment for greater levels of detail.

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# HARDSCAPE IMPROVEMENTS

The enhanced Hardscape object now includes options to accomplish radial paving patterns and paving patterns based on curvilinear paths, enabling site designers to be more creative in laying out pavements and walkways. You can also convey your signature style with sloping pavement models.

# EXACTING SITE MODELING

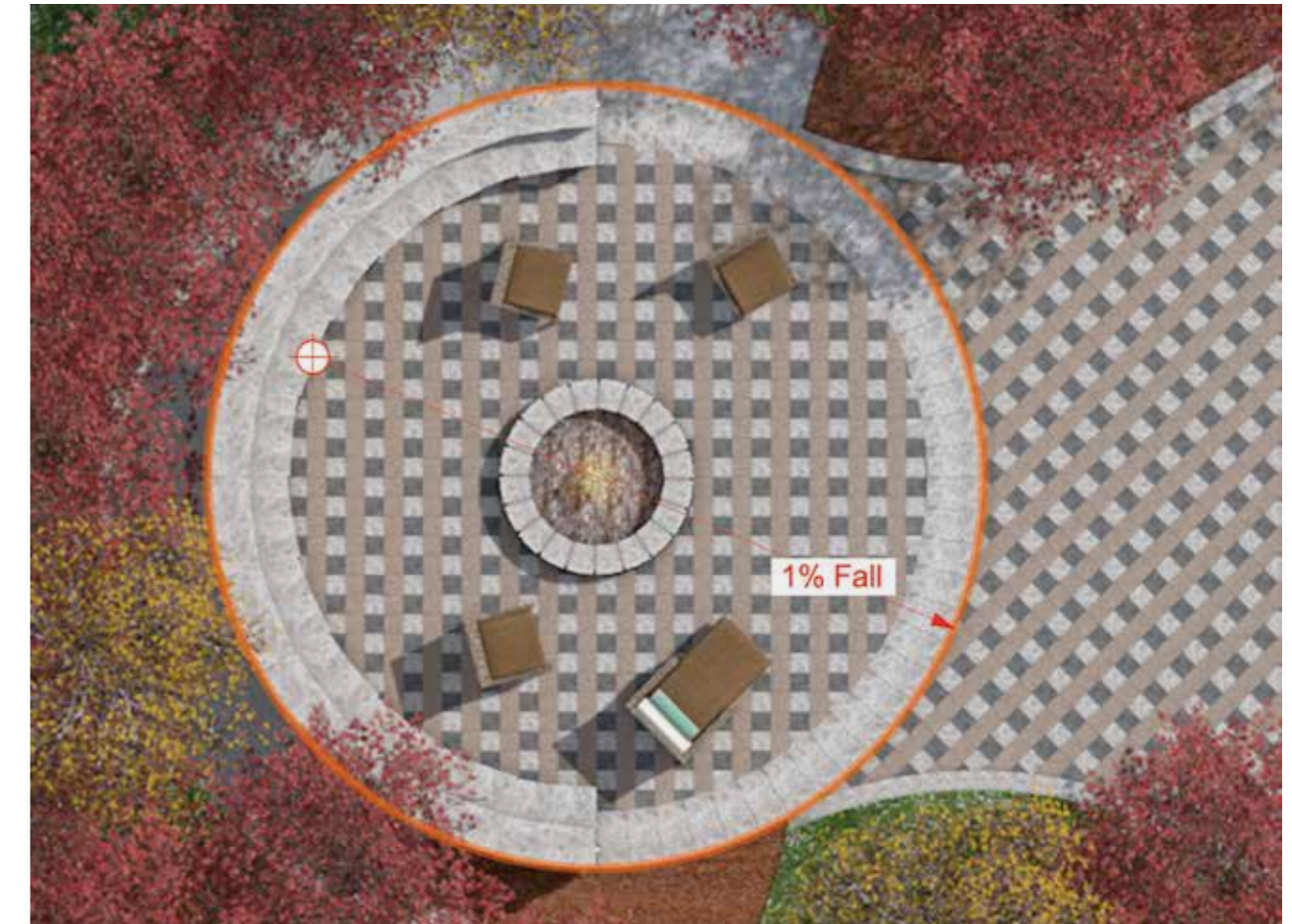
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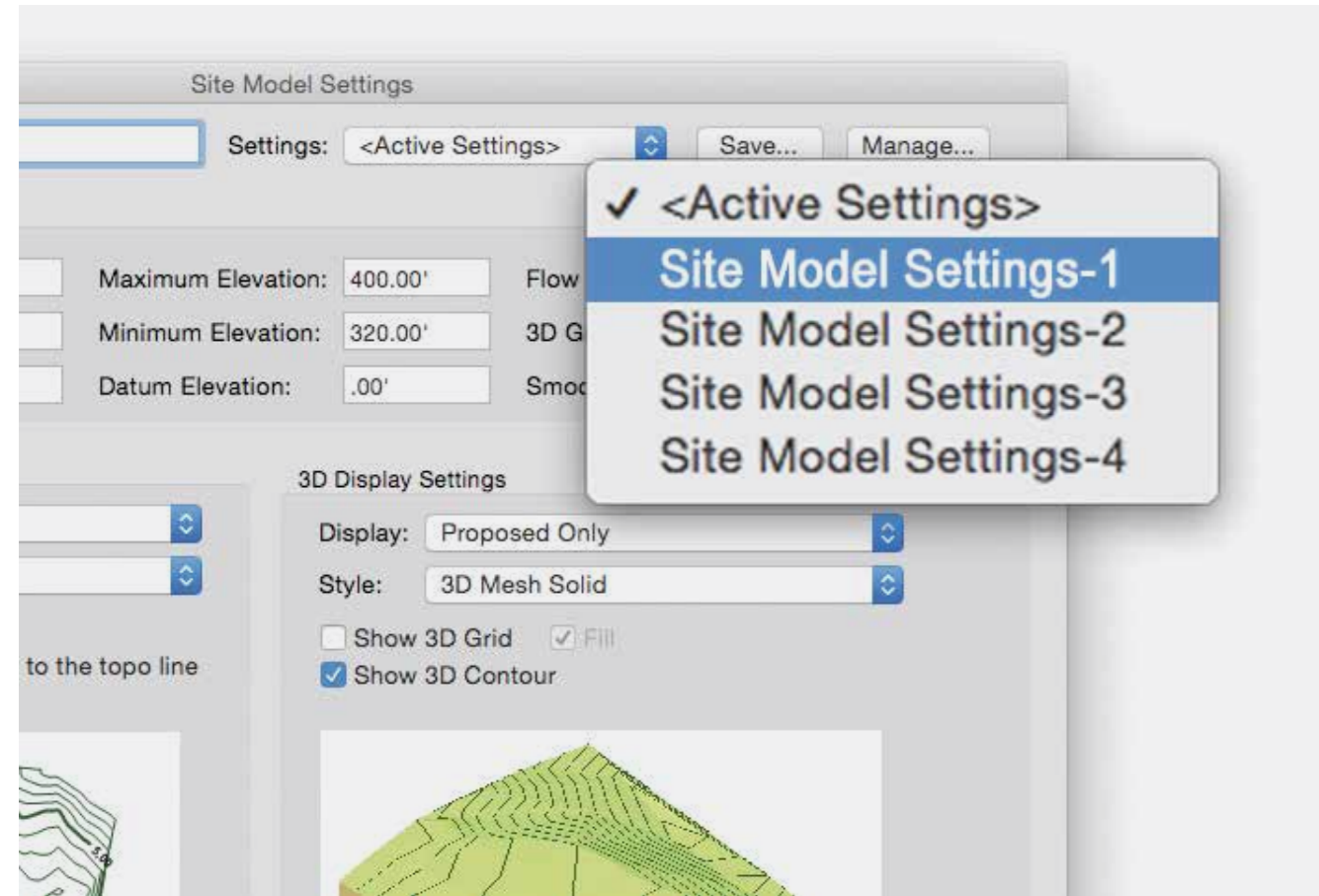
## IMPROVED SLOPE MODIFIERS

Take your site designs to new heights with improved slope modifiers, tool modes, and definitions. Accurately manage multiple sloping surfaces, choose how you prefer to display your slope labels, and more, to generate the most exacting site designs with less work.

## SITE MODEL FLOW ARROWS ENHANCEMENTS

Proposing changes to a site's terrain represents changes in the flow of rainwater. With advancements in the graphic settings of the site model, you can use color and other line type changes to quickly recognize the difference in water flow direction from existing to proposed to better plan how you manage water on a site.





### COLLECT MODIFIERS FROM CUSTOM SETS OF DESIGN LAYERS

Gain greater site modeling efficiency with enhanced file organization to collect modifiers from custom sets of design layers, as well as streamlined controls over fine grading.

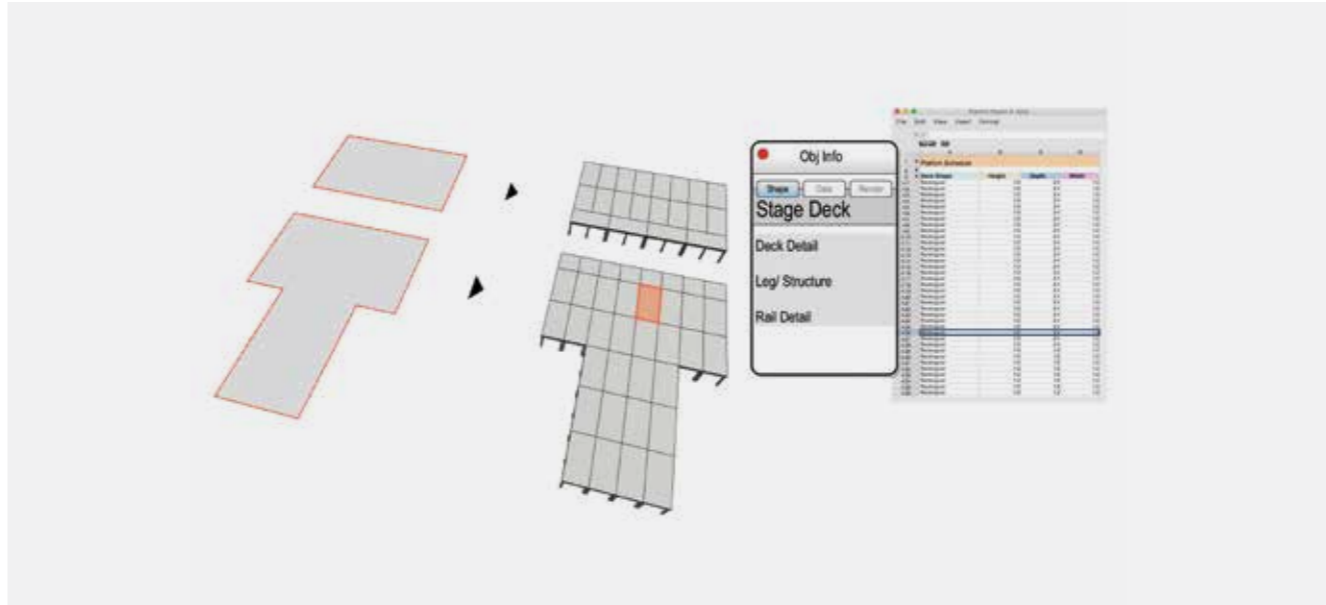
### SAVED SETTINGS FOR SITE MODEL DIALOG BOXES

Save changes to your site model settings for future use, maintaining the consistency of terrain studies from project to project, without having to memorize the settings for each scenario.

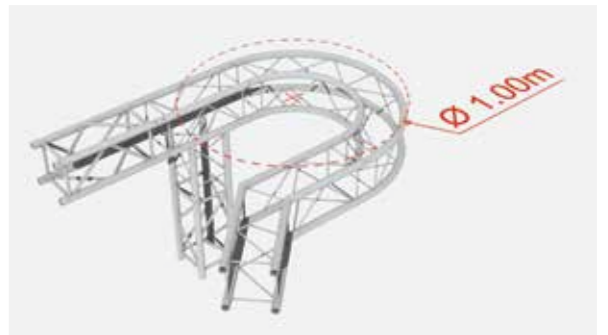
## IMPROVED SITE MODIFIER CAPABILITIES



## IMPROVED VECTORWORKS SPOTLIGHT OBJECTS



Streamline the virtual-to-built process with object improvements, including the ability to automate how your lighting devices respond to changing focus points in the design, precision placement of curved trusses by diameter, and improved control over the threshold and slope settings in your photometric objects.



## CREATE STAGE IMPROVEMENTS

The Create Stage command now supports the placement of multiple, standard-sized stage deck and stage plug objects to fill your defined stage space, creating a more accurate design document that can be used for rental orders and final stage assembly.

# RENDERWORKS

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Powered by MAXON's CINEMA 4D® render engine, Renderworks® is an industry-leading rendering application that produces amazing, high-quality renderings directly inside your Vectorworks design files. With new full-screen preview, as well as auto-start and quick-cancel features, our latest release streamlines the production of clear and accurate renderings.

Available as an add-on to the Vectorworks line of software products, Renderworks makes it simple to achieve breathtaking results with a simple drag and drop. Improved camera features allow you to manipulate the depth of field, apply vibrant back lighting, alter exposure, and generate panoramic images, creating striking visualizations and dynamic animations.

Further improvements that add new dimensions to your designs include:

- **Caustics Capabilities** – Refracts light through translucent surfaces like crystal and water
- **Ambient Occlusion** – Adds depth to your designs with more realistic shadowing
- **New Grass Shader** – Makes it simple to render realistic scenes with grass, carpeting, or hair

No matter what your visualization needs are, Renderworks gives you the power to deliver.

Visit [vectorworks.net/renderworks](http://vectorworks.net/renderworks) to learn more.

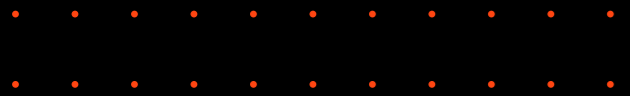


04 ENHANCE YOUR  
**WORKFLOW**

Vectorworks 2016 gives you more resources than ever to streamline and optimize your workflow. With project sharing capabilities, access to reliable cloud-based storage solutions, improved communication and visualization tools, and the industry-leading development team that is always working to make your design software experience better, you'll design smarter than ever before.

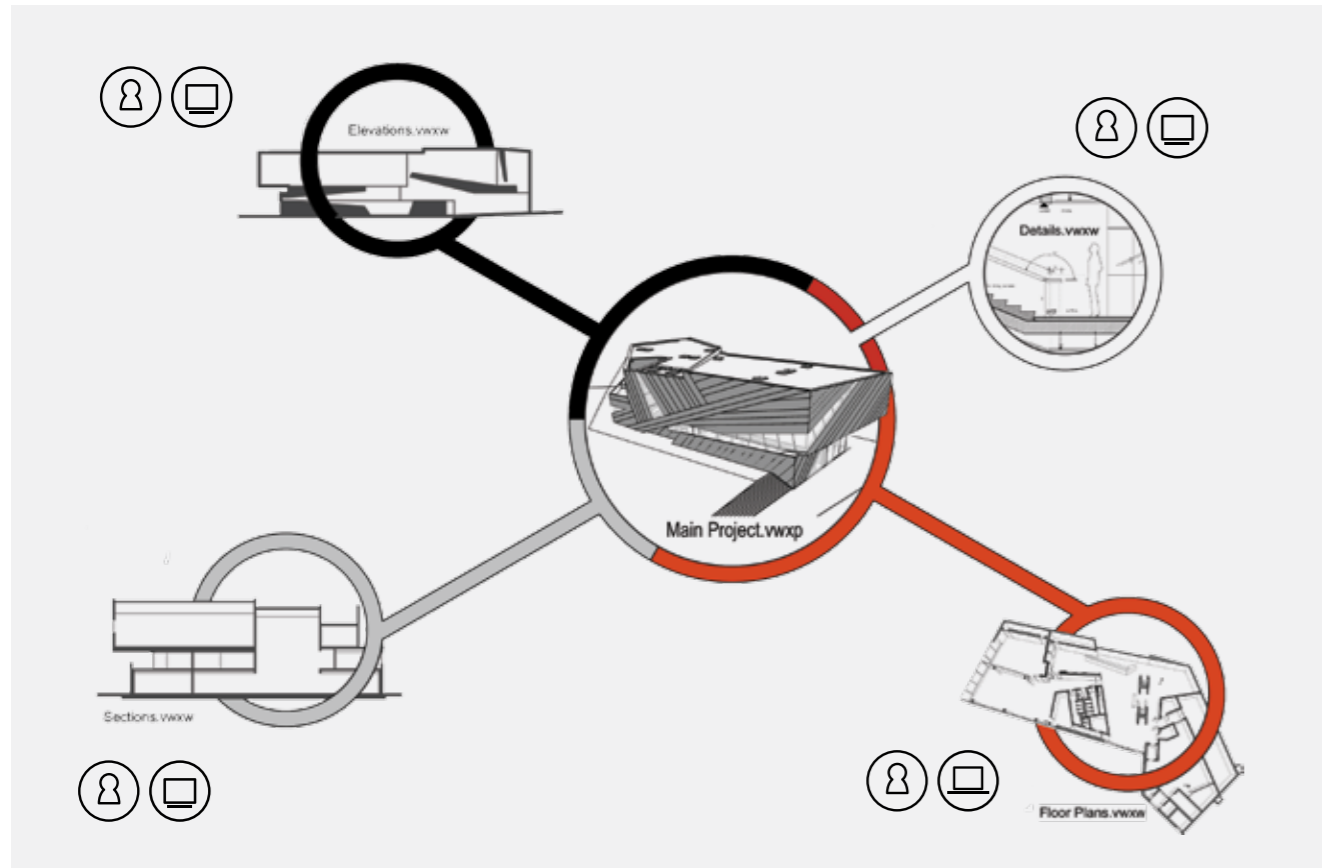


National Gallery Australia - Australian Garden by McGregor Coxall.  
Artwork by James Turrell titled 'Within Without.' Photo by John Gollings.



# PROJECT SHARING

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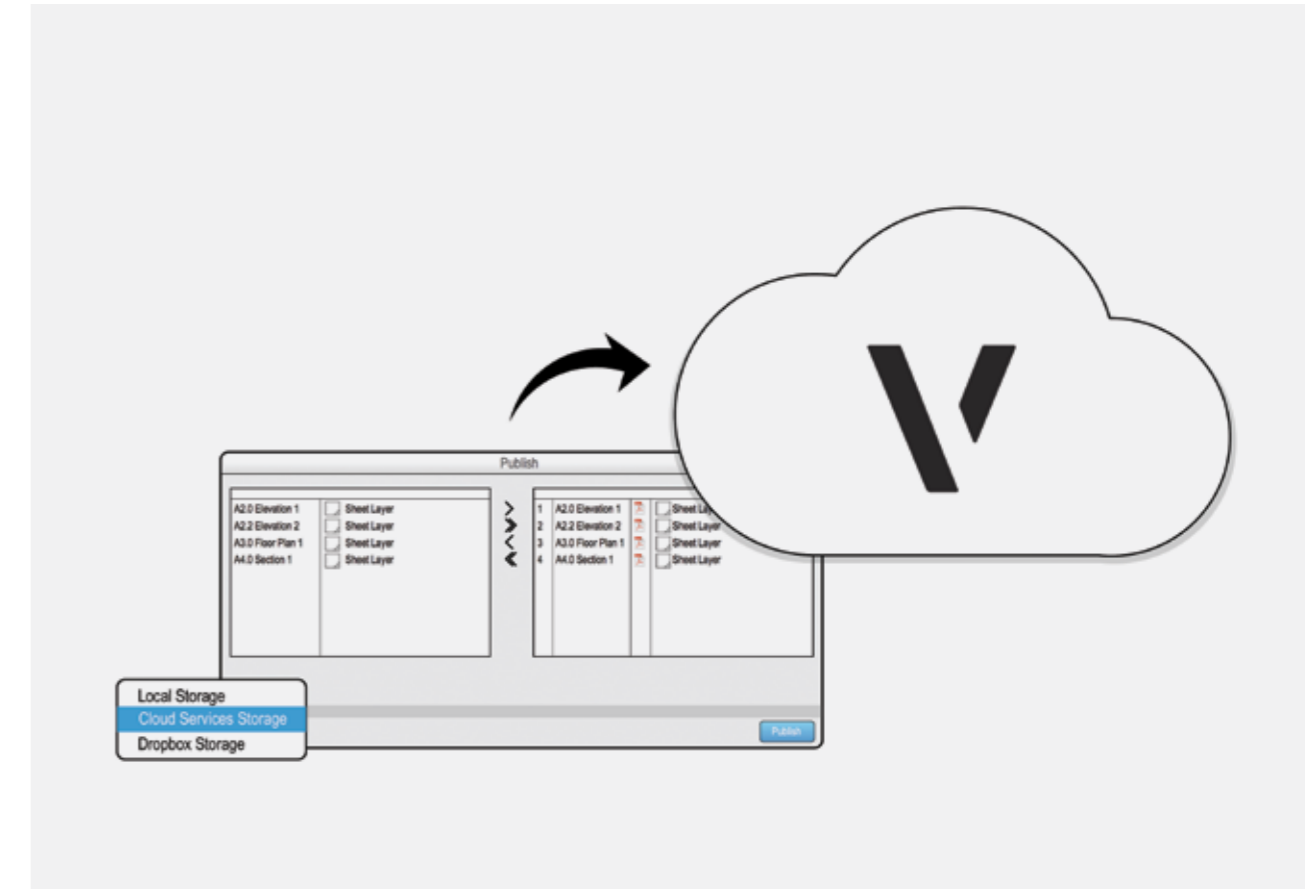


Project Sharing is an intuitive means to communicate and collaborate with your team across the design process. Work concurrently on the same Vectorworks file to streamline your journey from simple sketch to final product.

## CLOUD SERVICES IN VECTORWORKS

Vectorworks Service Select members can now take advantage of our cloud services directly within Vectorworks software. A single click publishes your Vectorworks files for easy sharing, collaborating, and viewing using our Vectorworks Nomad app or cloud web portal.

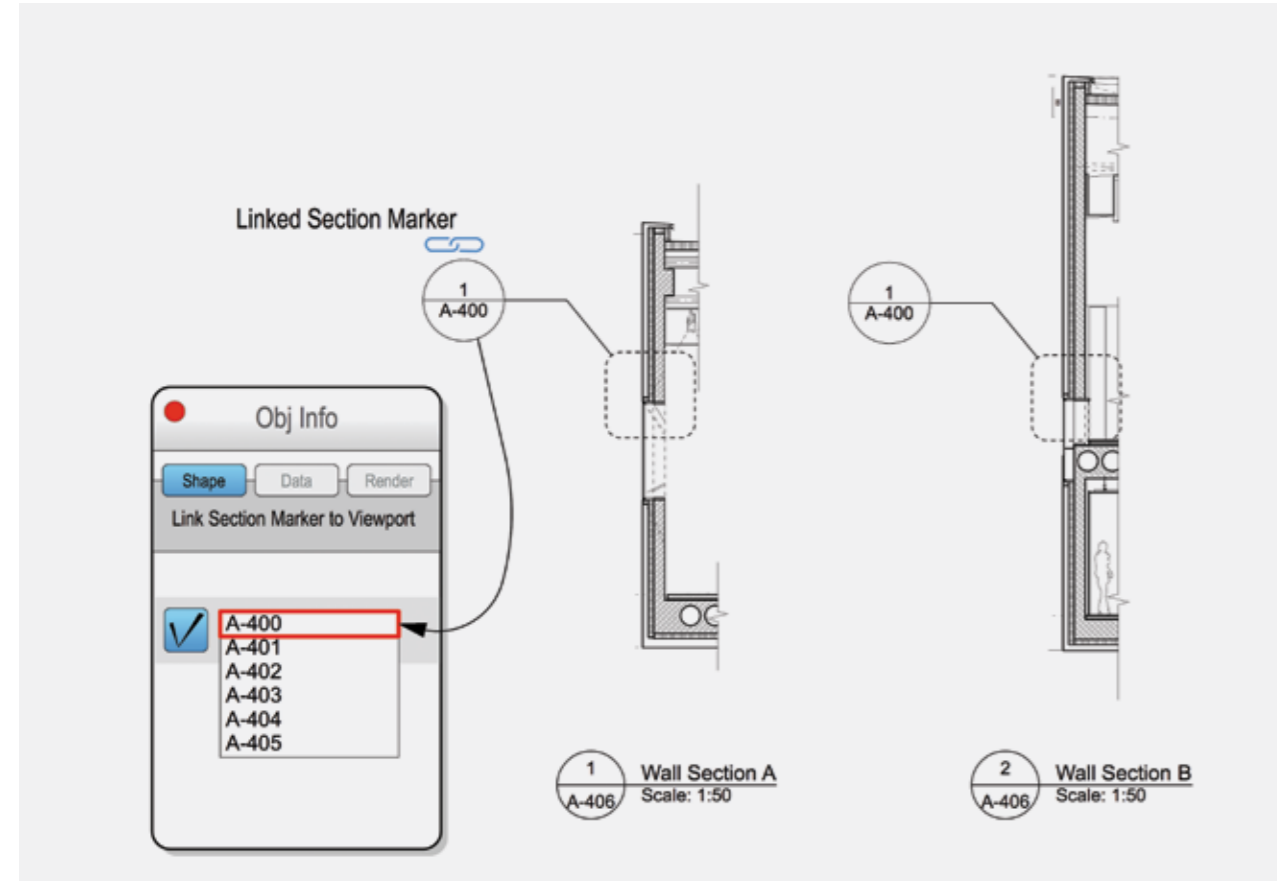
Learn more at [vectorworks.net/service-select](http://vectorworks.net/service-select).





# LINKED SECTION/DETAIL MARKERS

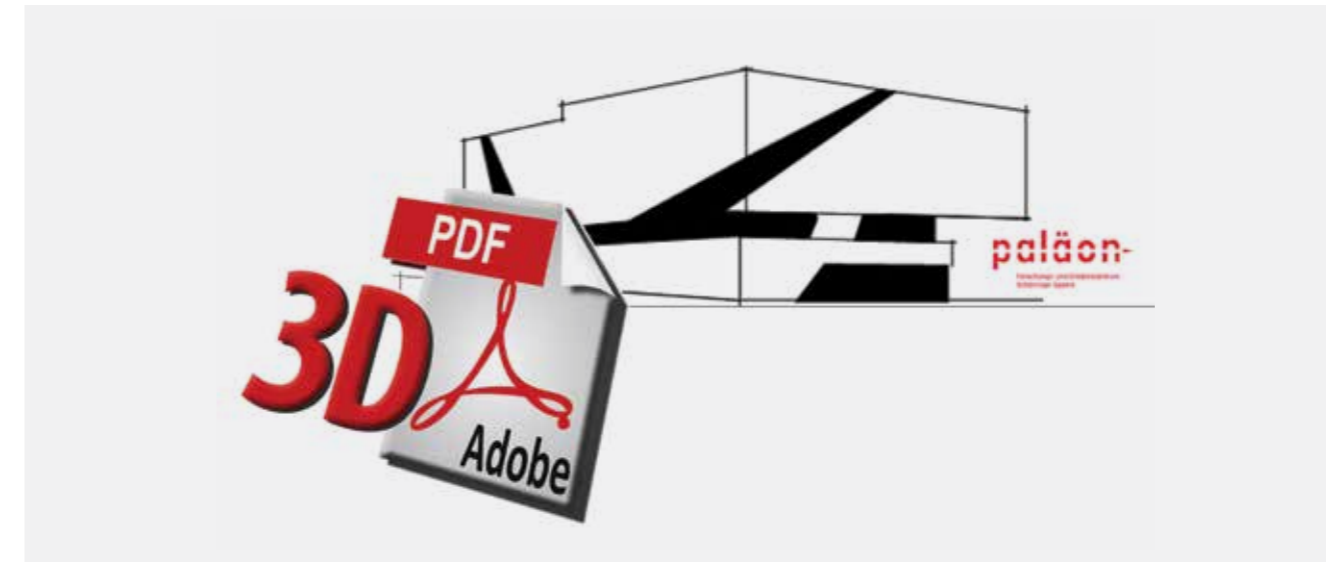
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Add section-elevation and detail-callout markers linked to your section viewports or detail viewports for easy drawing navigation.

# OBJ AND STL FILE IMPORT

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# 3D PDF EXPORT

Share your designs across platforms and devices using 3D PDFs, enhancing PDF-centric workflows with applications like Bluebeam® Revu®.



# DATABASE AND WORKSHEET IMPROVEMENTS



## IMPROVED ODBC FOR IFC

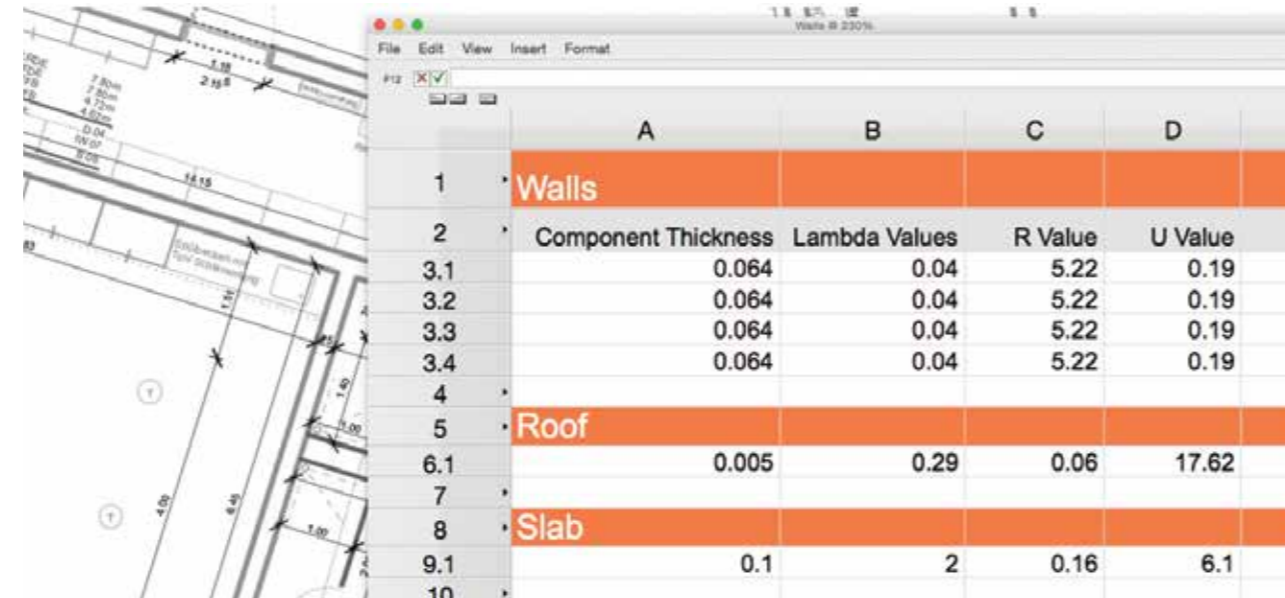
Advanced data exchange workflows will more easily take advantage of ODBC connectivity to IFC and COBie data in building information models.

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## BIM WORKSHEET FUNCTIONS

Worksheets gain greater BIM functionality, giving users more options to schedule and edit the various information-rich aspects of their designs.

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## NEW WORKSHEET FORMULA TO RUN SCRIPTS

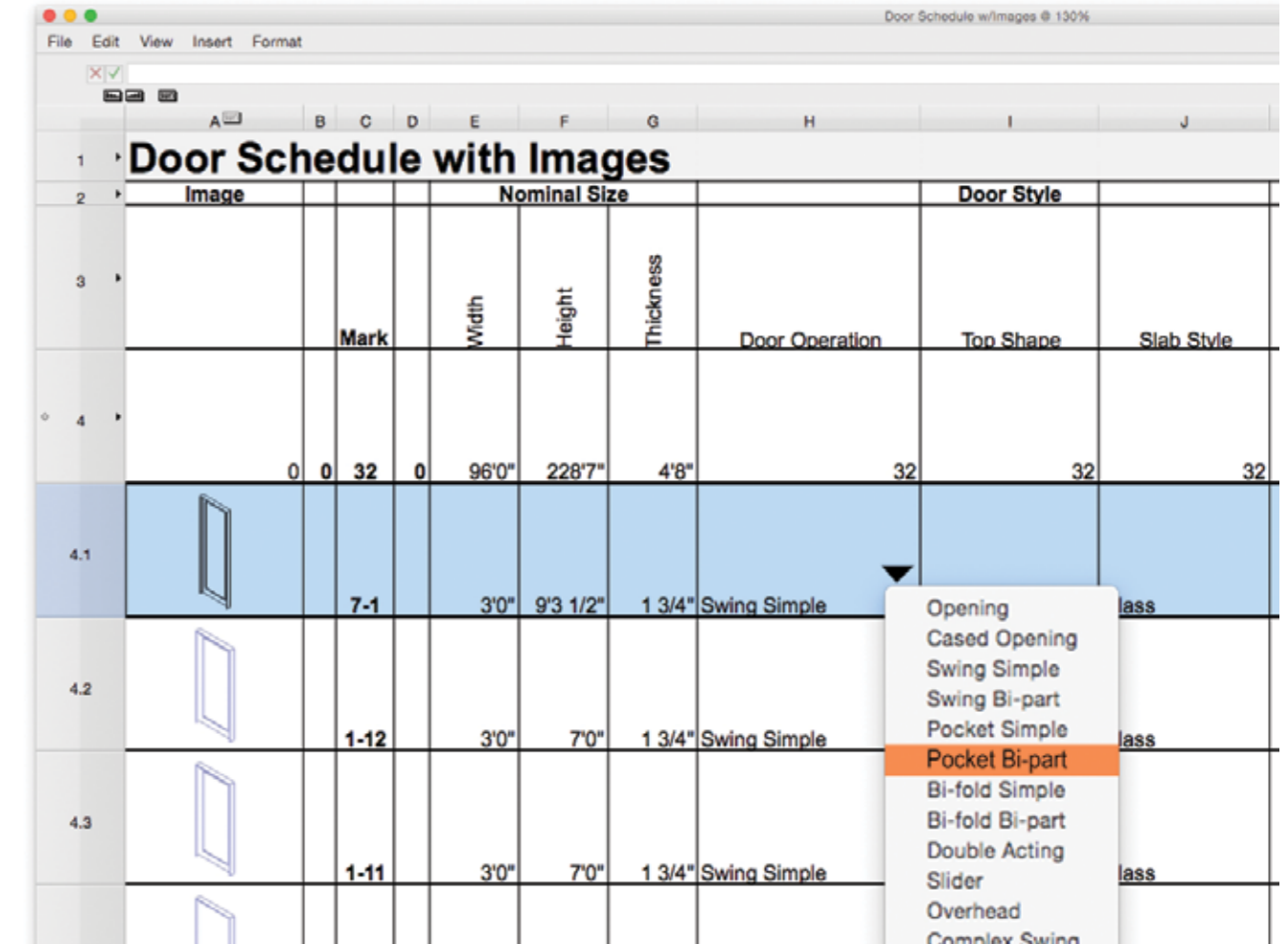
With Vectorworks 2016, database worksheet rows allow those familiar with scripting to create custom worksheet functions.

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## DIRECT EDITING FOR WORKSHEET CELLS

Now you can double-click any cell in a worksheet and type what you want.

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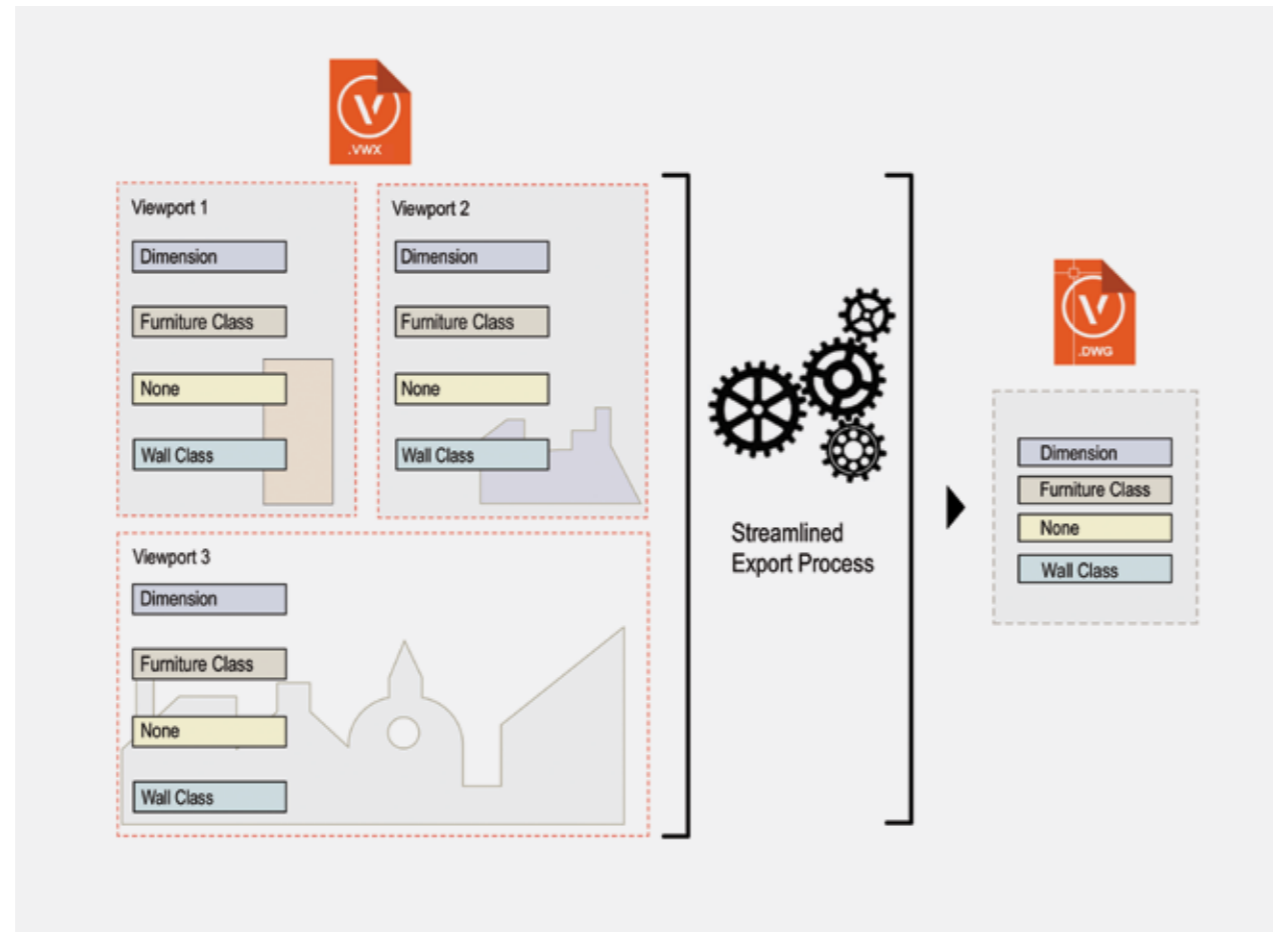
# DXF/DWG IMPROVEMENTS

Vectorworks provides quality, multi-version support for AutoCAD® files through our DXF/DWG translator. This year, we've further improved the quality of file translation with:

## IMPROVED DXF/DWG EXPORT OF CLASSES FROM DESIGN LAYER VIEWPORTS

Your design partners will appreciate DXF/DWG files with fewer layers, a result of automatically consolidating duplicate classes across multiple exported viewports.

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## IMPROVED DXF/DWG EXPORT OF SHEET LAYER VIEWPORTS

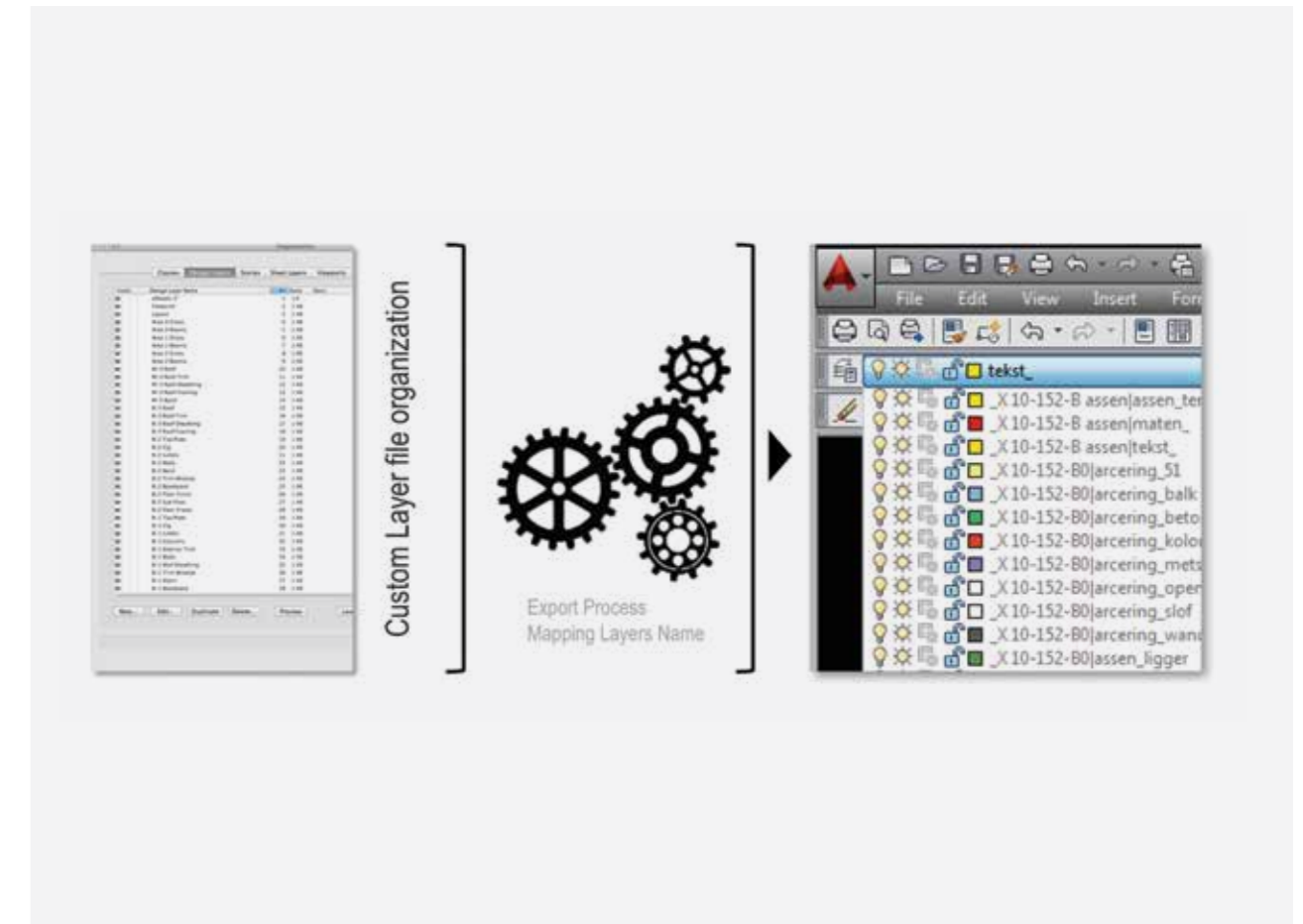
You will enjoy a seamless experience, sending your drawing set to your collaborators with sheet layers now exporting only those classes that are visible in the viewports or are used on the exported sheet layer.

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## MAPPING OF VECTORWORKS CLASSES/LAYERS TO DXF/DWG LAYERS

You can maintain your own Vectorworks class names and provide DXF/DWG files with layer names based on your collaborators' standards.

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# IMPROVED USER EXPERIENCE

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## NEW MIGRATION MANAGER

In Vectorworks 2016, we've made upgrading your software much simpler. The new Migration Manager command imports your workspaces, preferences, templates, favorites, and library content from previous versions into the latest release.

## MAC OS X PALETTE DOCKING

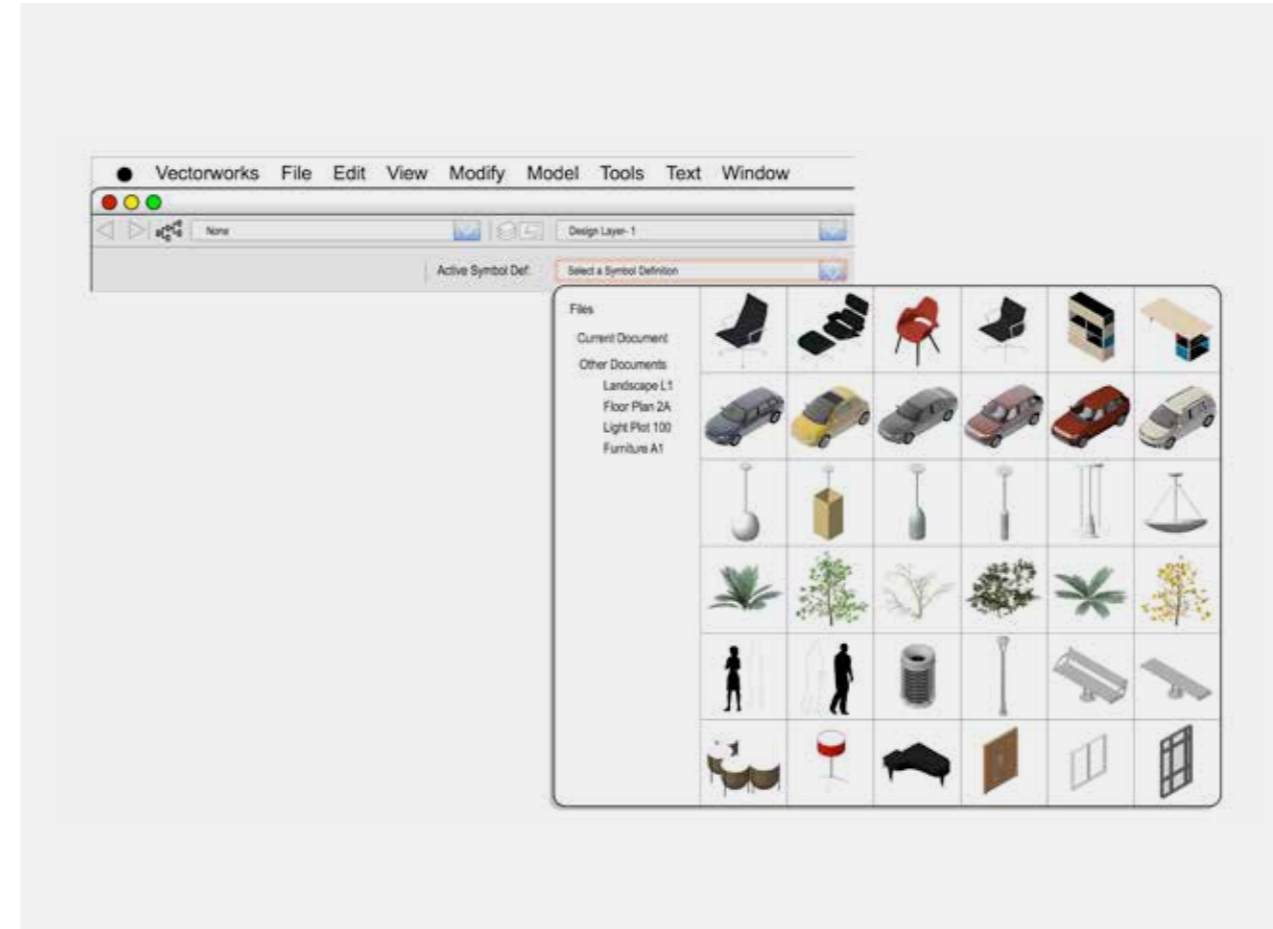
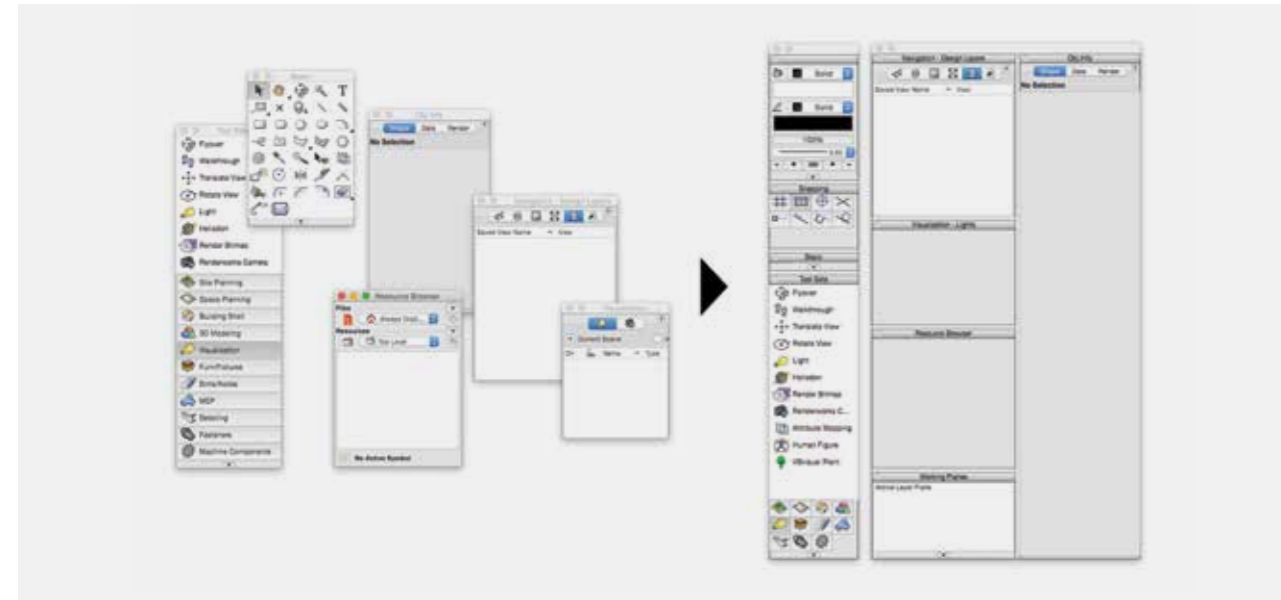
The new palette docking capability is a wonderful addition to the Mac user's experience with Vectorworks software. Palettes can now be easily grouped, modified, and docked to the application window.

## IMPROVED CONTENT INSTALLATION MANAGER

Content installation is cleaner, making it easier to identify the libraries you want to install. Plus, we've added over 150 new content libraries, giving you more options than ever to create inspirational designs.

## NEW VECTORWORKS INSTALLATION SYSTEM

For existing users, we've streamlined the upgrade process and integrated a native installer for your operating system to have you designing in Vectorworks 2016 quickly.



## IMPROVED SUPPORT FOR HIGH-RESOLUTION DISPLAYS ON WINDOWS

Windows users will be able to view their projects with enhanced quality on high-resolution displays.

## EYEDROPPER AND SELECT SIMILAR TOOL ARCHITECTURAL ATTRIBUTES AND DIMENSIONS

The Eyedropper and Select Similar tools are going to turbo-boost your productivity with the new ability to work with walls, slabs, and roofs.

## REPLACE DELETED RESOURCES

Streamlined document resource replacement allows you to choose a replacement when deleting an existing resource.

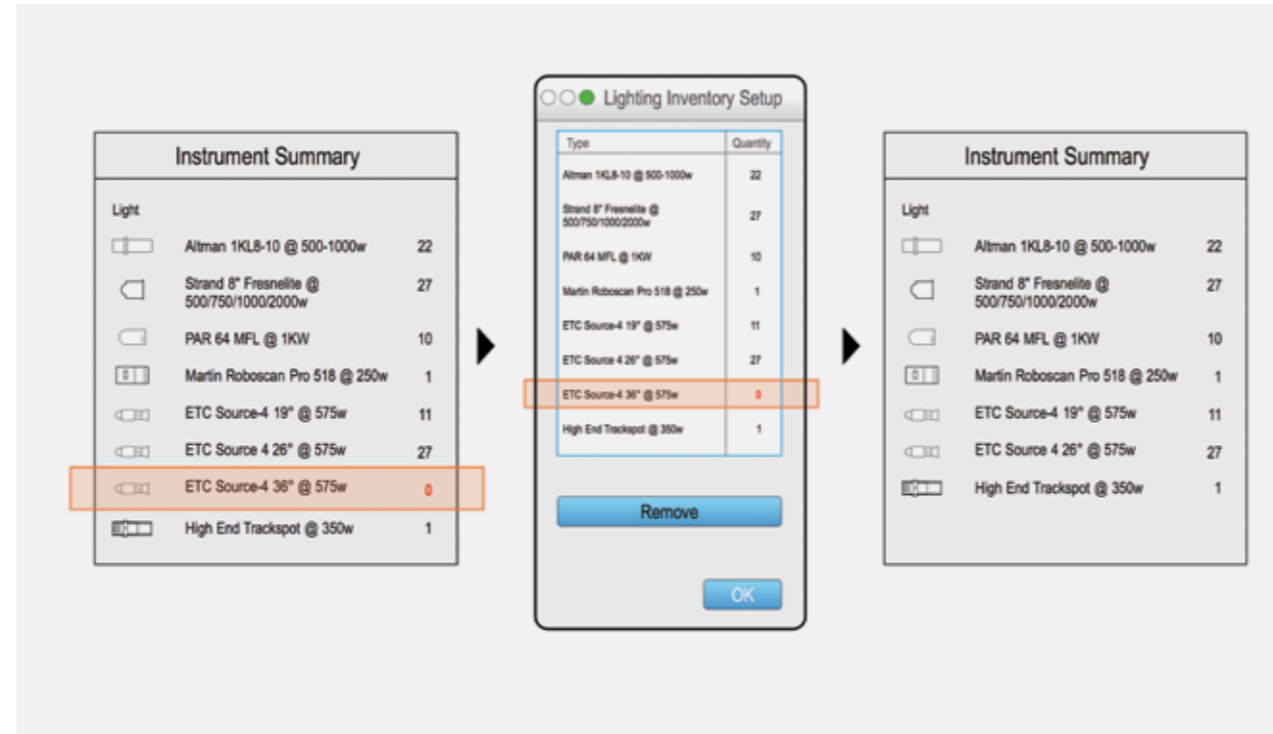
## IMPROVED RESOURCE THUMBNAIL LIST

Easily access your favorite and most used symbols through the symbol insertion toolbar.

## AUTO-SCALING VIEWPORT MARKERS

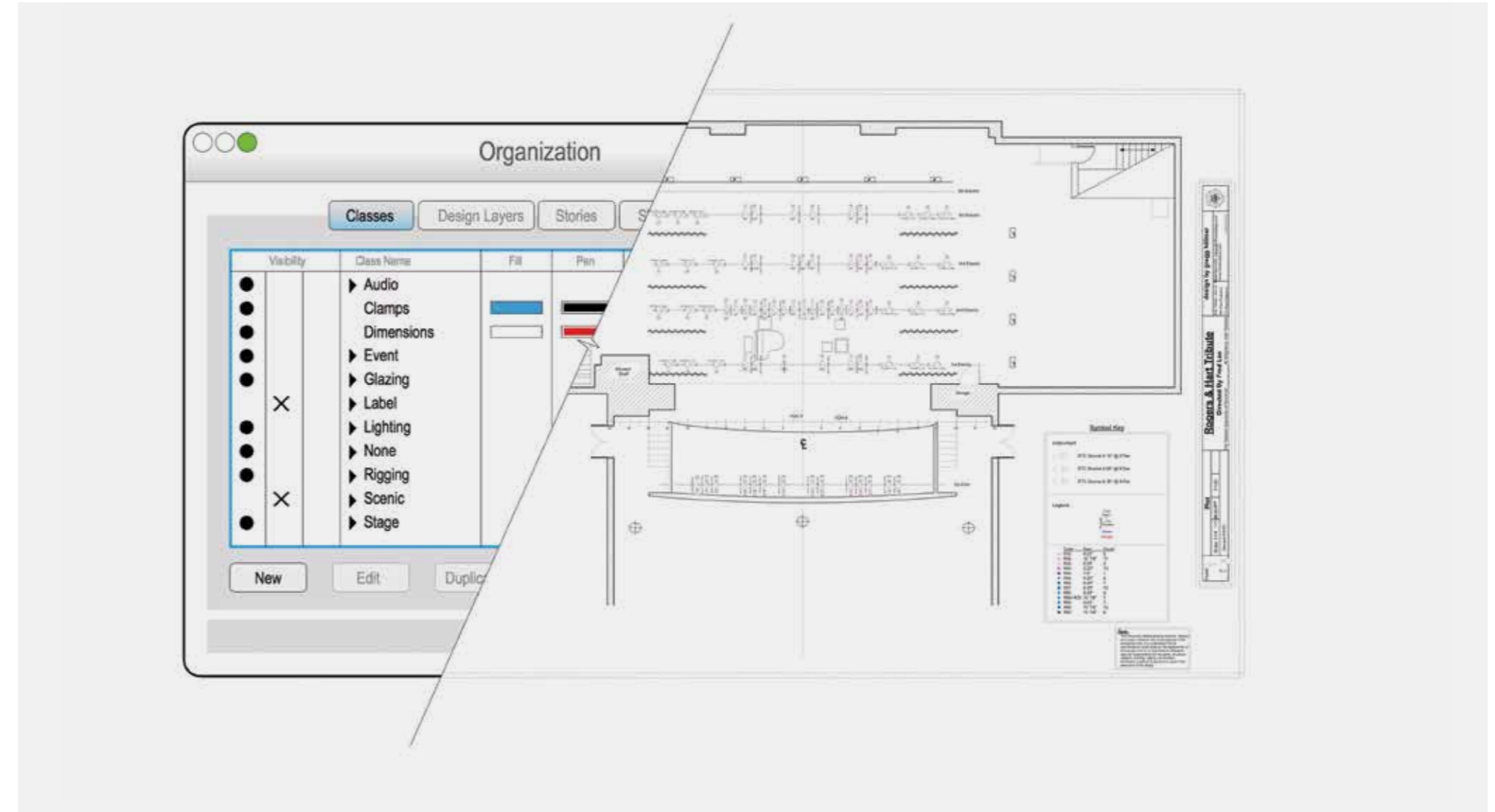
Markers maintain relative size as the viewport scale is changed, providing consistent marker sizes on your sheet layers.

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## INCREASED FLEXIBILITY FOR SPOTLIGHT

Organize focus points, enjoy optional default classes of Spotlight objects to control visibility and appearance, and customize your inventories and label legends with a number of usability enhancements that will simplify your Spotlight workflow.



05 TRANSFORM  
**THE WORLD**

The reason you do what you do is to create experiences that shape our world. No matter what type of design, you're creating experiences. From the first flicker of inspiration to the finished product, your Vectorworks software is there to help you transform the world.





Inspired by Barrio Escudero Pabillions.

# SUBDIVISION SURFACES

F A L S D ®

Transform rigid lines and primitive shapes into smooth, malleable surfaces to create sculpted objects, multi-dimensional scenery, unique focal pieces, water features, forced perspective, and more with subdivision modeling. This technique, based on Pixar Animation Studios' OpenSubdiv library, opens new workflow avenues across the AEC, entertainment, landscape, and other design industries. Get ready to create any form imaginable and design beyond the limits of traditional CAD software.

# 2016 NEW FEATURE MATRIX

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

## EXPLORE THE POSSIBILITIES

Marionette		✓	✓	✓	✓	
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## CAPTURE YOUR INSPIRATION

Subdivision surface modeling	✓	✓	✓	✓	✓	
Point cloud support		✓	✓	✓	✓	

## DEVELOP YOUR DESIGN

Energos		✓				✓
Horizontal Sections from the Clip Cube		✓	✓	✓	✓	✓
Roof components and styles		✓	✓	✓	✓	✓
Slab improvements						
Datums at slab bottoms		✓	✓	✓	✓	✓
3D modifiers for slabs		✓	✓	✓	✓	✓
Improved Vectorworks Spotlight objects						
Improvements to the lighting device				✓	✓	
Specify curved truss by diameter				✓	✓	
Improvements to the photometric tools				✓	✓	
Door and window improvements						
Three- and four-panel sliding windows		✓	✓	✓	✓	

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

New options for corner windows		✓	✓	✓	✓	
Louver windows		✓	✓	✓	✓	
Add window option for fixed glass, no sash		✓	✓	✓	✓	
Z Offset for door threshold		✓	✓	✓	✓	
Glazing thickness for doors and windows		✓	✓	✓	✓	
Door hardware position control	✓	✓	✓	✓	✓	
Updated functionality of door hardware library file	✓	✓	✓	✓	✓	
Hardscape improvements			✓		✓	
Exacting site modeling						
Bank slope support for site modifiers		✓	✓			✓
Site model flow arrows enhancements		✓	✓			✓
Improved site modifier capabilities						
Site model option to collect modifiers on custom set of design layers		✓	✓			✓
Site modifier contouring options		✓	✓			✓
Saved settings for site model dialog boxes		✓	✓			✓
Slope Dimension tool improvements		✓	✓			✓
Create grade limits slope definition			✓			✓
Create solid section from grade		✓	✓	✓	✓	



# 2016 NEW FEATURE MATRIX

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

Hoist tools				✓	✓	
Create Stage improvements				✓	✓	
<b>RENDERWORKS</b>						
Upgraded CINEMA 4D render engine						✓
Visualization techniques						
Ambient occlusion						✓
Camera effects						✓
Grass shader						✓
Improved camera usability						✓
Walkthrough tool gamer mode						✓
<b>ENHANCE YOUR WORKFLOW</b>						
Project sharing		✓	✓	✓	✓	
3D PDF export		✓	✓	✓	✓	
Database worksheet improvements						
Improved ODBC for IFC		✓	✓	✓	✓	
BIM worksheet functions		✓	✓	✓	✓	
New worksheet formula to run scripts	✓	✓	✓	✓	✓	
Direct editing for worksheet cells	✓	✓	✓	✓	✓	

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

Linked section/detail markers		✓	✓	✓	✓	
OBJ and STL file import	✓	✓	✓	✓	✓	
DXF/DWG improvements						
Improved DWG/DXF export of classes from design layer viewports		✓	✓	✓	✓	
Improved DWG/DXF export of sheet layer viewports	✓	✓	✓	✓	✓	
Map Vectorworks classes/layers to DXF/DWG layers	✓	✓	✓	✓	✓	
Additional architectural features in Landmark and Spotlight		✓	✓	✓	✓	
Annotation improvements	✓	✓	✓	✓	✓	
Flattened design layer section viewports show as hidden line in wireframe		✓	✓	✓	✓	
<b>IMPROVED USER EXPERIENCE</b>						
New Migration Manager	✓	✓	✓	✓	✓	
Mac OS X Palette Docking	✓	✓	✓	✓	✓	
New Vectorworks installation system	✓	✓	✓	✓	✓	
Improved content installation manager	✓	✓	✓	✓	✓	
Replace deleted resources	✓	✓	✓	✓	✓	
Auto-Scaling Viewport Markers	✓	✓	✓	✓	✓	
Improved Resource Thumbnail List	✓	✓	✓	✓	✓	
Eyedropper and Select Similar tool architectural attributes	✓	✓	✓	✓	✓	

# 2016 NEW FEATURE MATRIX

	F	A	L	S	D	R
	Fundamentals	Architect	Landmark	Spotlight	Designer	Renderworks
High resolution display support	✓	✓	✓	✓	✓	
Increased flexibility for Spotlight						
Spotlight classing structure				✓	✓	
Remove items from lighting inventory				✓	✓	
Label containers shown in the label legend				✓	✓	
User default controlled class for the Focus Point object				✓	✓	
Landmark data improvements			✓		✓	
Rotate configuration label control for electrical symbols		✓			✓	
New lines in Landscape Area tags			✓		✓	
VectorScript/SDK support for creating IFC custom Psets		✓	✓	✓	✓	
Stake elevation units control		✓	✓		✓	
Wall style and slab style IFC data		✓	✓	✓	✓	
Add new North Arrow configuration		✓	✓	✓	✓	
Show prefix in Elevation Benchmark		✓	✓		✓	
Consolidate wall, slab, and roof component classes		✓	✓	✓	✓	
Increased wall component auto joining control		✓	✓	✓	✓	
Story and style edit menus		✓	✓	✓	✓	
New slab style from unstyled slab context menu item		✓	✓	✓	✓	

	F	A	L	S	D	R
	Fundamentals	Architect	Landmark	Spotlight	Designer	Renderworks
Persistent Y-joins for wall replacement		✓	✓	✓	✓	
Replace deleted resources	✓	✓	✓	✓	✓	
Eyedropper support for dimensions	✓	✓	✓	✓	✓	
Purge identical objects	✓	✓	✓	✓	✓	
Reshape tool support for arcs and lines	✓	✓	✓	✓	✓	
Align/Distribute improvements	✓	✓	✓	✓	✓	
Vectorworks Script Editor code collapse and color	✓	✓	✓	✓	✓	
Auto scale option for markers in viewports	✓	✓	✓	✓	✓	
Publish usability improvements	✓	✓	✓	✓	✓	
Replace symbol class	✓	✓	✓	✓	✓	
Export to five previous versions	✓	✓	✓	✓	✓	
Export PDF subset fonts		✓	✓	✓	✓	
Extended shoulder in Callout tool	✓	✓	✓	✓	✓	
New and updated content libraries	✓	✓	✓	✓	✓	✓

# ABOUT VECTORWORKS

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Vectorworks cares about design. Since 1985, we have served the architecture, landscape, and entertainment industries, drawing inspiration from the world around us and encouraging the more than half a million designers who use our software to create experiences that transform the world.

Our commitment to develop the world's best cross-platform CAD and BIM software has taught us a simple truth: great design begins with the inspiration of the designer. Vectorworks supports that inspiration by guiding the exploration of discovery and finding creative solutions.

We provide powerful tools to help designers capture ideas, nurture innovation, communicate effectively, and realize their vision.

We serve those who desire to create experiences that are memorable and build things that truly matter. We recognize that great design is about revealing opportunities that explore the unexpected while fully satisfying the demands of an increasingly complex world. We acknowledge the value of a designer's dream and strive to facilitate the creation of something that's truly appreciated and uniquely positioned to express the best in the built environment.

Design by Holzer Kobler Architekturen. Photo by Jan Bitter. janbitter.de.



# SYSTEM RECOMMENDATIONS

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Mac OS X 10.9 or later operating system

Windows 7 SP 1 (64-bit)

Windows 8 (64-bit)

Windows 8.1 (64-bit)

Windows 10 (64-bit)

64-bit Intel Core i5 (or AMD equivalent) or better

## **RAM**

4GB minimum, 8GB highly recommended

8GB – 16GB recommended for large files and complex renderings

## **Graphics\***

A dedicated graphics card is highly recommended.

Open GL 2.1 compatible graphics card

VRAM: 1GB, 2GB-4GB (recommended)

## **Screen Resolution**

1440x900 minimum

1920x1080 or higher recommended

\* Like past releases, Vectorworks 2016 added improvements that place still higher demands on graphic hardware. The performance and quality of the graphics provided by the Vectorworks Graphics Module depend directly on the speed, memory, and supported extensions of the graphics card. These new features have the potential to provide a very fast and fluid experience if used on capable hardware, or a noticeably slower experience if used on older or incompatible hardware. Graphic cards should support at a minimum OpenGL version 2.1; cards not meeting this recommendation will have limited functionality and poor performance, particularly when rendering in OpenGL mode. In general, the more powerful your video card is, the better your Vectorworks experience will be.

For the most current and updated technical information, please visit our Knowledgebase at [kbase.vectorworks.net](http://kbase.vectorworks.net).

See [vectorworks.net/sysreq/](http://vectorworks.net/sysreq/) for updated information.

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