Green Homes for Chicago

Capitalizing on many of VectorWorks' efficient tools and features, Kipnis and Miller were among the final five selected in the Green Homes for Chicago *national competition held to investigate affordable, environmentally-friendly, single-family housing.*

VectorWorks user and trainer Nathan Kipnis was selected as one of five architects for the City of Chicago's *Green Homes for Chicago* program. Nathan Kipnis Architect, Inc.'s (NKA) designs were submitted along with 72 others to a national competition held to investigate affordable, environmentally-friendly, single-family housing designs for the city. Using VectorWorks ARCHITECT as their CAD program, and in conjunction with Mark A. Miller Architect/Builder, two schemes were selected ("Optimal" and "Base") to reduce resource and total project energy consumption.

"We use VectorWorks for everything. We even used it for a series of highly complex page layouts because of its graphic image capabilities. It's the only architectural design tool that matters," says Kipnis.

Kipnis and Miller's designs were focused toward achieving a few, targeted goals of incorporating high-energy efficiency and green-material selections, no matter what the budget.

The "Base" home scheme was selected by the Dept. of Environment and Dept. of Housing to be built at 646 W. Englewood in Chicago. Construction is scheduled for completion in the summer of 2002. At $115,000 and 1720 sq. ft., this scheme has the lowest construction cost of the five homes being constructed for the *Green Homes* program. The design was focused toward achieving a few, targeted goals instead of minimally achieving a wider range of objectives. The scheme's concept was that there should be no excuses whatsoever for not incorporating high-energy efficiency and green-material selections and practices into a design, no matter what the budget.

This home has a calculated annual energy cost of $1241, and a calculated Energy Star rating of 89.0. This is 45% more energy efficient than the Model Energy Code and 15% more efficient than the base Energy Star house (86.0 rating).

The building envelope uses techniques developed specifically for this climate. With a computed heat loss of only 23,800 BTUh, a conventional, albeit extremely small, 90% efficient 36,000 BTUh output unit was used. This furnace is a sealed combustion/direct vent unit, which uses outside combustion air in lieu of conditioned interior air. All of the ductwork and mechanical equipment are located within the space. Because of the super-tight construction, the ductwork does not need to extend out to the perimeter of the space, thereby reducing the cost of the mechanical system. An "air cycler" system provides fresh air into the house at preset, periodic times to ensure proper indoor air quality.

The home's primary feature is its passive solar design which picks up an average of between 20% and 50% solar gain in the winter based on Chicago's climate. Properly sized overhangs, ceiling fans and strategic cross ventilation help cool the home in the summer.

The building shell is panelized off site and transported to the site for assembly. This allows for production to be in a controlled environment where the material waste can be best managed. The shell is assembled on site extremely quickly, which helps to provide for a secure site. The entire structure is set up on a 2'-0" module for its rough framing dimensions, significantly reducing lumber waste. The structure's material is comprised of engineered lumber or certified structural stick lumber. The 2'-0" modular is also employed on the roof deck, where the roof slope is specified to be 6 3/8 in 12, instead of 6 in 12. The unusual level of precision on the roof slope allows for full-sized OSB roof panels to be used without the need for cutting.

The "Optimal" scheme, which is a 1725 sq. ft. single family home, has a construction cost of $175,000. This home is planned for construction during the second phase of the *Green Homes* project. Utilizing techniques developed in the Northeast and in Canada, the home's primary feature is its passive solar design which picks up an average of between 20% and 50% solargain in the winter based on Chicago's climate, while requiring no special "work" by the owner. The structure utilizes the natural movements of prevailing air patterns and the changes in the sun's path to reduce energy usage. High insulation values in the wall, roof and window construction, and the thermal mass storage within the floor structure ensure that the collected solar gain is retained and gradually released to the interior. An air-to-air heat exchanger provides a high interior air quality while limiting thermal losses. Properly sized overhangs, ceiling fans and strategic cross ventilation help cool the home in the summer. This design has a projected total annual energy usage (electricity and gas) of $850 per year.

The entire project, from schematic design through construction documents, was executed in VectorWorks. The initial competition submittal, which included four distinct designs that reflected various orientations and levels of detail, were completed in six weeks. The design development documents were also created in six weeks and included extensive 3-D modeling and rendering.

The "Base" home was modeled entirely in VectorWorks and exported for rendering in Art*Lantis. "We generally set up the plans from the beginning, in schematic design, so the walls, windows and doors are in 3-D correctly. We then drop in appliances, fixtures, etc. in 3-D. If the client then requests 3-D work, we would take if from there and add floors, roofs, stairs, trim, etc. Most of time we do split the drawings out for a separate 3-D file, but not always. About 50%-66% of our clients are now requesting 3-D imaging," Kipnis explains. QTVR (QuickTime Virtual Reality) object files were produced, which allowed viewing of the site and building from all angles. Due to its tight, urban setting, the adjacent buildings were simplistically modeled and set to be translucent to enhance the ability to view the model.

RenderWorks was used to create the final presentation drawings for the "Optimal" scheme. A series of QuickTime solar animations were made from the building section. These animations dramatically demonstrate how the sun passively interacts with the interior. Additionally, the still sections highlight the energy and environmental features of the project. These views incorporate translucent air flow arrows produced with the often-overlooked "Overlay Transfer Mode" found in the Layers dialog box.

"I cannot imagine not using CAD for design, and there are very few other CAD packages that I would ever even consider. I selected this program [VectorWorks] back in 1992, and have never regretted it. VectorWorks Rocks!" says Kipnis.

Tutorial Bytes

Creating Hatches

To create a new hatch pattern, first decide what the hatch should look like.

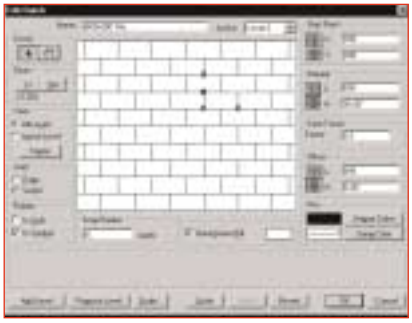
Let's assume that you want to make a tile hatch 600mm x 300mm, stretcher bond. We have to look for lines that repeat, and often I will sketch out the hatch pattern so I can work out where the lines repeat. In the case of our tile hatch, let's assume that we need three lines (levels).

Step 1: Setting up the page
Set Units to millimeters: select Page > Units.
To create a new hatch, open the Resources Palette, and then click New.
Choose Hatch, and then click Create.
The Edit Hatch dialog box opens.

Step 2: Creating the hatch
Name the hatch 600x300 Tile
Change the Units to World
Set the Start Point to L: 0, A: 0
Set the Repeat to L: 600mm, A: 0
Set the Offset to L: 300mm, A: 90
You may need to zoom out to see the results.

Step 3: Creating the first tile course
Click Add Level on the Edit Hatch dialog box. Please note, VectorWorks will not allow you to set both the Offset and Repeat angles set to zero. To work around this:
Set the Offset to A: 45
Change the Start Point to Cartesian Mode
Set the Start Point to X: 0mm, Y: 0
Set the Repeat to L: 600mm, A: 90.
Set the Dash Factor to 0.5; this creates a repeating line 300mm long that skips a tile course.
Set the Offset to L: 600 mm, A: 0

Step 4: Creating the second tile course
Click New Layer. A new layer with the same Repeat and Offset as the first tile course is created..
Set the Start Point to X: 300mm, Y: 300mm



Step 5: Finishing
This hatch is in your current file and should be imported back into the library file so that you don't have to remember where you left it.

Special thanks to Jonathan Pickup, a long time VectorWorks user and trainer in New Zealand, for providing this tutorial. For more training tips from Jonathan, visit www.archoncad.co.nz

Add-On Products & Services

On the Nemetschek N.A. website, you can find up-to-date information on Third Party Products and Services, including information on trainers, service bureaus, and add-on products.

Add-on Products: We provide a list of third-party add-on products that are general purpose and specific to the fields of landscape design, architecture, theatrical lighting, and mechanical engineering.

Distributors: We offer products through distributors both here in the U.S., as well as internationally.

Trainers: Here you can find a geographical list of trainers.

Training Material: We offer information on how to obtain VectorWorks training books and CDs.

User Groups: We have a vast number of user groups in the U.S., as well as abroad.

Plotting Services: Here you can find a complete list of companies providing plotting services.

Employment: If you're looking for a designer with VectorWorks experience, or are a VectorWorks user looking for employment, check out the employment page.

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Call Us at 410-290-5114 to speak to customer service or technical support.

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For Ordering and Pricing Information call 1-888-646-4223, or e-mail sales@nemetschek.net

E-mail questions about upcoming shows, User Group events, or any marketing concerns to marketing@nemetschek.net

E-mail your technical questions, solutions, and wish list items to technical support to tech@nemetschek.net

News Bytes

9.5 VectorWorks and The Industry Series

The big news for version 9.5 is OS X support. Addressed specifically in the 9.5 VectorWorks and its Industry Series are printing, stability and speed issues. Users will find extensive speed improvements in the areas of hidden line rendering, symbol manipulation, switching sheets and printing. Long-time VectorWorks users will also be pleased to know that the Trim command has returned in its original form in 9.5.

VectorWorks MECHANICAL

Our fourth Industry Series product, VectorWorks MECHANICAL, includes a number of tools and utilities for the drafting and design process. Among these tools are: a Spring Calculator, Shaft Analysis, Conversion Factor, Solutions of Triangles, and Centroid Utilities. MECHANICAL also boasts tools to conduct a simple beam analysis, and to design and study the kinematics of CAMs and Geneva Mechanisms. Finally, three to four million different components can be created from the object technology: fasteners and hardware; bearings; gears, sprockets, and roller chains; and springs. Tracking a project's costs and materials is simple through the integrated database and spreadsheet functions. This allows designers to create parts lists and bills of materials that are dynamically linked to the drawing. When a design changes, reports and schedules are automatically updated.

Eddy Awards

Nemetschek North America's products frequently appear as award finalists, and we're proud to announce VectorWorks 9 has won Macworld's 17th annual Eddy Award as the best Scientific/Engineering software for the Macintosh. The Eddy Awards are given to the year's top software and hardware products in 25 categories. Macworld editors surveyed every Mac product on the market from November 1, 2000 to November 1, 2001, evaluating them for their overall quality as well a their utility, innovation, and elegance.

New Training Book Available

PeachPit Press released a new edition of VectorWorks 9: Visual QuickStart Guide in January. Geared toward the beginner to intermediate user, it covers everything from drawing simple lines to creating sophisticated 3D objects. Some topics include: creating and modifying 2D and 3D shapes, drawing with constraints; architectural drawings; using layers and classes; using worksheets, reports, and presentation capabilities. You can purchase the book at any major bookstore, through PeachPit Press (www.peachpitpress.com) or through us.

Doodle! 9 Now Available

The ideal presentation tool for VectorWorks just got better. Doodle! 9 (for Vectorworks 9) now lets you assign different hand-drawn effects to different classes directly in Vectorworks! Doodle! gives you complete control over the hand-drawn look of your document, and gives you the ability to adjust each individual setting. It even allows you to even imitate your own (or someone else's) drawing style! For pricing and ordering information, please visit Panzer CAD Services, Inc. at www.erols.com/panzercad

Viewer Updated to 9.5

Nemetschek North America has updated its VectorWorks Viewer to be compatible with Mac OS X. The Viewer enables those who do not own the program to view and even print projects created in VectorWorks, ARCHITECT, SPOTLIGHT, MECHANICAL or LANDMARK. Since it was first made available, close to 6,000 downloads have been made. The Viewer is available for free download from the Nemetschek N.A. website.

New 3D Content for VectorWorks

Zygote Media Group, Inc. has provided its first collection of VectorWorks-ready 3D content—3D PopulationWorks. 3D PopulationWorks contains over 1,800 pre-posed, human figures in 3D with attributes that can be placed as symbols into VectorWorks 8 and 9 files. Visit our website for more information and to download a free model.

New Teacher's Manual Available for VectorWorks 9

Following the release of *The WorksTutorial for VectorWorks 9*, Improbability Press has now released *The WorksBook Teacher's Companion.* The book assists the instructor with a comprehensive building block approach for teaching VectorWorks. It includes topics to be used for demonstrations, homework assignments, quizzes, and tips and hints for verifying students' progress. Integrated directly with the *WorksTutorial* in its lesson format, it is a compendium of information developed and tested in the classroom setting. For information, please visit www.improbability.com

All news items may be located in their entirety at www.nemetschek.net/news/headlines.html

Tradeshow, Events & Training Calendar

USA Trade Shows

April 5–6, 2002
JLC Live '02
Providence, RI

May 10–11, 2002
JLC Live '02
Baltimore, MD

May 9–11, 2002
AIA Expo '02
Charlotte, NC

June 26–28, 2002
PCBC
San Francisco, CA

October 18–22, 2002
ASLA
San Jose, CA

November 12–14, 2002 (Booth #250)
Build Boston
Boston, MA

International Upcoming Events

2002.03.20–21
IT Showcase
London - The Oval
United Kingdom
www.itshowcase.co.uk
Distributor: Gomark

Training

Nemetschek North America, in conjunction with In Medias Res, is offering hands-on VectorWorks training seminars across the country. The Professional Learning Series consists of two seminars: the VectorWorks Fundamentals seminar, a comprehensive two day seminar, and the VectorWorks Hands-on 3D seminar. Visit www.nemetschek.net/PLS for more in-depth information.

March — Columbia, MD

March — Boston, MA

April — Denver, CO

May — New York, NY

June — Los Angeles, CA

July — Columbia, MD

August — San Francisco, CA

September — Boston, MA

*If you are interested in any of our seminars, please call 888-646-4223.

Training CDs

A long time in the making, our training CDs are here, and they are hands-down our best training CDs to date. In Medias Res, our training consultants from Canada that have been wowing users with our training seminars, have helped us produce these CDs. The discs cover basic, as well as advanced topics in VectorWorks, RenderWorks, ARCHITECT, LANDMARK, and SPOTLIGHT. In addition, each CD will offer a number of hands-on exercises to reinforce the concepts of the lesson. VectorWorks training CDs are currently available, and the Industry Series training CDs are in development. For more information, or to order online, visit www.nemetschek.net/training/trainingcd.html

AIA Accreditation

Nemetschek North America is pleased to offer AIA Continuing Education credit for our seminars. The seminars are eight hours a day, or the equivalent of eight learning units. The Introduction to VectorWorks is a two-day seminar and 16 learning units, and individuals enrolled in Advanced VectorWorks or 3D Concepts will earn an additional eight learning units for a total of 24 learning units. For additional information, contact marketing@nemetschek.net or visit the AIA website at www.aia.org

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NEWS & FEATURES FOR VECTORWORKS® USERS

The Dispatch

SPRING '02 WWW.NEMETSCHEK.NET

President's Letter

Richard Diehl
Chief Executive Officer,
Nemetschek North America

Dear VectorWorks Users:

Welcome to the final issue of The Dispatch *as you have come to know it. Being a high-tech company, we have decided to modernize the format of our newletter by publishing it in an electronic format.*

By delivering *The Dispatch* to you via e-mail, we will be able to provide you with more timely information, as printing and mailing delays will be eliminated. In addition, instead of receiving *The Dispatch* quarterly, you will now receive it on a bi-monthly basis. To get the new *Dispatch*, simply visit www.nemetschek.net/Dispatch and complete the registration form.

On to other items...hopefully, you are aware by now that we have released VectorWorks 9.5. People are singing its praises for increased stability and speed, resolved printing issues and, of course, OS X support. Our team of engineers worked tirelessly on this release, and I would like to acknowledge their hard work and commend them on a job well done. If you haven't test driven version 9.5 yet, it is a must.

VectorWorks 9.5 also provides the foundation technology for our brand new product, VectorWorks MECHANICAL. This is our design solution for mechanical designers, drafters, and fabricators. Described as a superior 2D drafting package with impressive 3D visualization capabilities, we believe that MECHANICAL is going to be a huge hit in its industry.

As you can see, we are moving onward and upward. The best year for us so far, 2001 witnessed the birth of many of our new Industry Series products. From where we stand, 2002 will prove to be another good year. We have a number of pleasant surprises in store for you, so hang on and see what the new year brings.

As always, it is my great pleasure to have such a true and loyal user base. Your help with our public beta testing for 9.5 allowed us to bring you a tremendous product, and we could not have accomplished such a feat without your input and support. I would like to thank you on behalf of my staff and myself; you make it all worthwhile.

Sincerely,

Richard Diehl
CEO
Nemetschek North America

Don't miss next month's premier issue of the e-Dispatch! Visit our website at www.nemetschek.net to sign up to receive the most up-to-date news and features for VectorWorks users.