

VirtualWork

A newsletter for customers and friends of IES

VA 13: Graphics

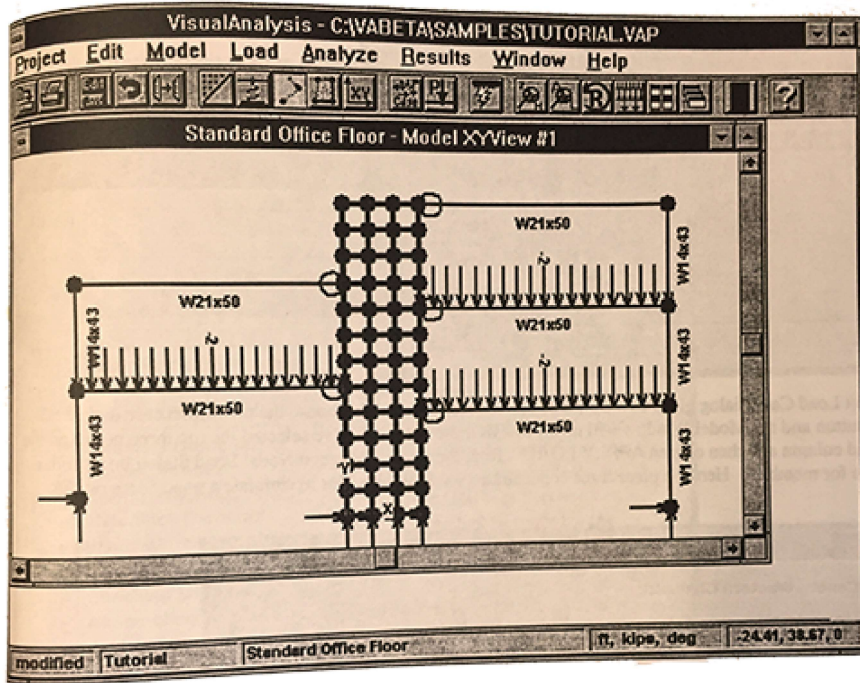
On the Horizon

IES engineers continue to reinvent our flagship product VisualAnalysis. The **VA.NExT** release incorporates sophisticated technologies to simplify and clarify. It all starts with the Model View graphics, where you define your mathematical (FEA) model visually. Of course, VisualAnalysis has been showing your model since the very beginning, so what's the big deal with the new graphics?

Editor's note: We later decided to call it version 17.0.

Graphical Roots

In 1994, when version 1.0 hit the streets, running on Windows 3.1 we pioneered **structural engineering graphics** (16 colors, no rendering or shading, we didn't even use hidden-line removal). We called it *VisualAnalysis* to highlight this very modern capability!



We added the OpenGL-based **Picture View** before the turn of the millennium, and it became the foundation for all of the VA graphics with version 6.0 in 2007. But even then, OpenGL was losing its sheen and industry support. Games were taking over the computing world and OpenGL wasn't for games. We had numerous graphical hardware-issues, especially with underpowered laptops, or high-end CAD workstations. We really needed a better solution.

Microsoft DirectX and WPF

We started experimenting with new technologies (Microsoft's WPF), releasing ShapeBuilder 7.0 and VAConnect 1.0 in 2013. Then after gaining some mastery, our developers have spent much of the time since working frantically to rebuild an all new, amazingly rich VisualAnalysis that allows VisualAnalysis (once again) to live up to the

name. We have done far more than graphical work, though as we've [mentioned previously](#), and will continue to reveal over the next several months.

You Are the Champion

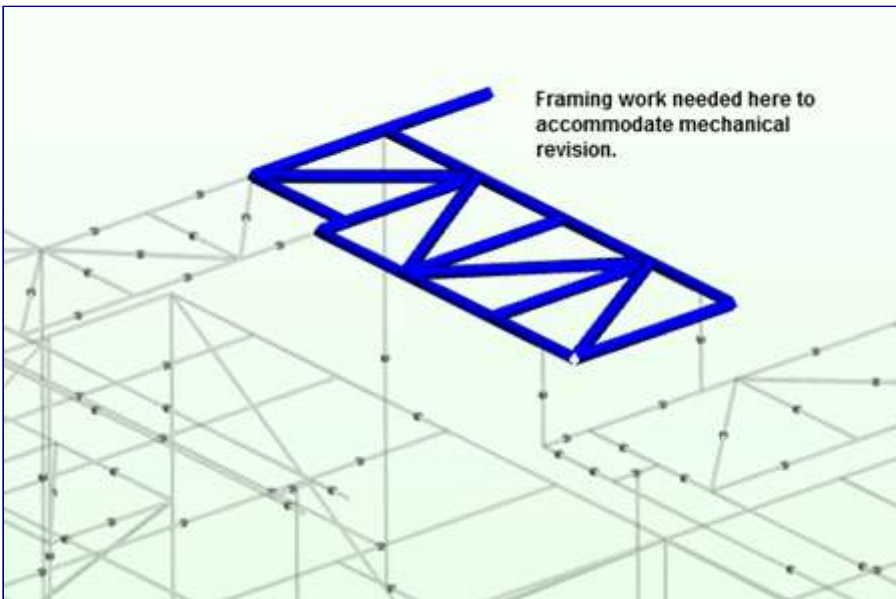
Video hardware has come a long way over the past 10-15 years, and our new system will take full advantage of hardware acceleration for optimum rendering performance. Whether you use an overpowered workstation or a battery-powered Windows 10 tablet, you can be assured that VA will max-out your system.

Added Capabilities

As we've been able to rewrite from the ground-up, we've been able to add things that were simply too difficult in prior upgrades. Here is a taste of what is coming:

Hover-highlighting: Before you click, know what will be selected.

Sticky Notes: Add a note to your image before printing or saving to clearly convey information to your clients.



Rotation about a Member: select a member (or area, or node...) and rotate the view about that item.

Snap-points: When sketching models, connect to predefined (and customizable) locations along member elements or area sides. No need to mess with a grid, or pre-define a node.

Quick Color-Themes: Change all graphical colors with a few mouse clicks.

Loads in Result View: Display loads (and other model items) overlaid with results.

Plate Result Diagrams: Drag a line across a plate mesh to instantly get moment & shear diagrams for walls or slabs.

What do YOU Want?

"Graphics" is a large catch-all for many of the operations that take place within the Model, Result, and Design views in VisualAnalysis. While we are not going to "fix" anything in version 12.0, now is your opportunity (and during the coming beta test) to tell us what you want in VA.NEXT.

Would you like to see things displayed differently in VisualAnalysis? Scaling, sizes, transparency, selection, zooming, cut views, drawing, fonts, colors, rotation and more are all things we would like to simplify, streamline or improve in some fashion. If you have ideas, please send suggestions to Technical Support (support@iesweb.com).

[\[back to top\]](#)

Choose the Best Tool

Software Hammers, Drills, and Saws

Which IES product should you use for job "X"? For some engineering tasks the tool choice is fairly obvious: Need to design a retaining wall? QuickRWall is almost always the best choice. Have an aluminum truss to check? VisualAnalysis is your only choice.

Sometimes, though, it is harder to tell which product will best fit your needs.

Sometimes you can elect to use the general-purpose tool (VA) you own rather than spending money on a more specialized product. But other times you'll actually save money and produce much better results if you get the best product. Let's compare some of the strengths of IES products relative to the others.

VisualAnalysis (VA) Catches a Lot



You can throw just about anything into our general-purpose FEA tool, **VisualAnalysis**. Sure you *could* model a retaining wall here, but you might have to build multiple models: one where the soil is supporting the wall, and another where the soil is loading the wall! VA is **your only option** for frame and truss analysis, or dynamic analysis, or moving loads. VA provides you with a ton of **versatility**, sometimes coming at the expense of convenience or automation.

The Other Visual-Products

IES offers three other "Visual" products, based on VA, but tailored to a subset of tasks that can greatly streamline your work, as well as providing some **problem-specific advantages**. These tools were created to help you utilize **the power of FEA**, without worrying too much about the nuances. But their simplifications can prevent the solutions of some classes of problems, forcing you back into VA.

VisualFoundation performs punching shear and foundation-stability checks that VA won't do automatically. Setting up a foundation model is faster and easier.

VisualPlate simplifies plate or slab bending problems compared to VA.

VisualShearWall greatly simplifies the modeling of shear walls in a floor plan, and gathers results in a more organized way, compared to VA's more abstract result details.

The Quick-Products

Here the name says it all. Get things done fast with very specialized products that can compete with an engineer's **hand calculations**. With a super-restricted feature set, these products offer less in flexibility, but far more in completeness and productivity. When working with

QuickMasonry for example, you select a specific component up-front, and then define the configuration, loading, and design-details within that framework.

Another example: **QuickFooting** provides far more detailing than VisualFoundation, but is limited to a rectangular pad with a single column. The Quick-tools are about 90% design, only 10% "analysis". Their reports are outstanding in explanation and detail.



Comparison Resources

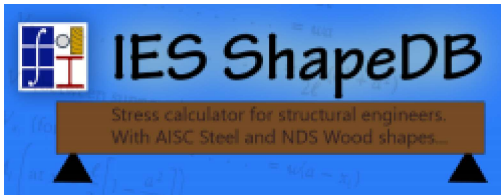
The IES web site contains product feature lists for each product (including limitations!), there is also a [summary page](#), and a [couple of charts](#) to help you select the right tool for your next job.

[\[back to top\]](#)

Mobile ShapeDB

Smartphone Engineering

If you need to do a field check of section properties or a simple beam or column analysis in the field, IES is now offering the **IES ShapeDB** phone App for either Android or Apple platforms. This **free utility** is partly an exercise for us, to make sure our code runs on the platforms of the future and partly a response to needs expressed by a few customers.



Shape Lookup

This tool lets you look up the section properties of any shape in the IES shape database including AISC steel and NDS wood sections.

Stress Calculation

You can also calculate stresses for your shape in a simply supported beam configuration or as a column under loads that you specify.

Try IES ShapeDB

You might give this little tool a test, and then let us know what you think about it. Send comments to Support regarding your experience, or tell us **what you really want** in a mobile App for engineers.

Find the download links on our [Downloads](#) page.

[\[back to top\]](#)

Licensing Business

Licenses 'R' Us

We have three tidbits for you regarding licensing and the business side of IES tools: retiring products, the free ManageIT utility and new options for licensing of suites.

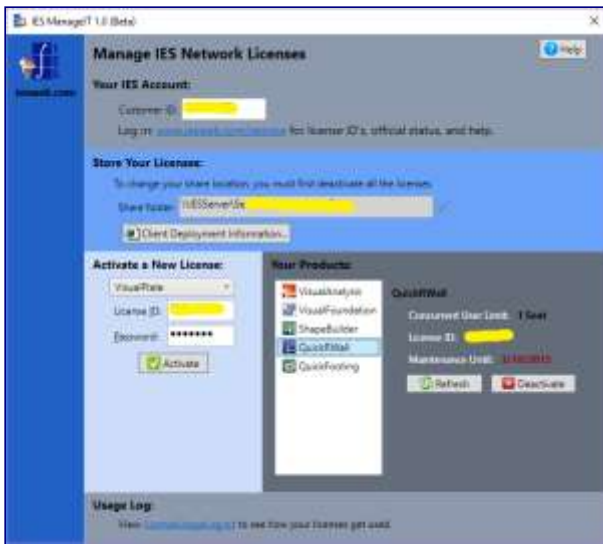
Retiring Product Versions

We have officially stopped support **version 3.0 of VisualFoundation**, as it was retired 4 years ago (May 2012). We will mark **version 9.0 of VisualAnalysis** as dead in August of this year. Most IES customers have long since upgraded to newer versions. If you have not, please do so now to avoid hassles.

Once a product is dead we no longer support it *for any reason* and you will not be able to download it from our web site. (You may wish to archive the setup programs for your old IES products). For questions, please [contact sales](#).

ManageIT Utility

We released a [free utility program](#) in May to help network IT staff activate, deactivate or otherwise manage IES **network licenses**. This utility provides better diagnostic and error-handling to help you avoid problems getting your engineers up and running. It is self-explanatory but also includes a help button for information and troubleshooting.



Suite Licensing

We have rolled out a "Suite License" for the IES QuickSuite, starting with version 5.0 of these tools. This means that instead of managing **four separate License ID's, activations, and maintenance payments**, customers will now get a single license for all four of these products (QuickRWall, QuickMasonry, QuickFootring, and QuickConcreteWall), when purchased as a new suite.

[\[back to top\]](#)

QuickSuite 5.0

Concrete and Masonry Design

The latest release of QuickRWall, QuickMasonry, QuickFootring, and QuickConcreteWall hit the store last month with a good number of enhancements. These tools are very focused on two things that help improve your business productivity and engineering quality:

- Problem-specific solutions
- Hand-check reporting

What does this mean exactly?

Problem-Specific Solutions

Each of the quick products solves one or more very specific types of engineering problems. Because the focus is so narrow you benefit in a number of ways. First of all the input data is minimized, and in most cases the default input values work, especially as you use the software and it gets to know your typical settings. Also, the product can speak the language you would normally use to describe the situation. Contrast that with a more general FEA program (like VisualAnalysis) where the software developer doesn't know exactly what kinds of models you might build.

Hand-Check Reporting

Similarly, after the software performs its analysis or design calculations, the specific nature of the tool allows the Quick product to produce a report very much like you would by hand. We call it Transparent Reporting. This allows you or anyone else checking your work to see exactly what assumptions and equations were used as well as intermediate steps. You can get a concise one-page summary report or you can dig deep to explain discrepancies from your expectations.

Incremental Refinement

Most of the Quick products have been helping engineers for over 10 years now, and they are quite refined. Over that time, engineers like you have been suggesting and critiquing the systems so that they are almost as sharp as you are. In this version 5.0

upgrade we've updated code provisions from IBC, ACI, and MSJC as you would expect. We've also added some features to expand the types of problems you can solve. For example, the retaining wall tool allows water depth above the backfill, and the spread footing tool lets you define additional (say mechanical) uplift resistance.



Free Upgrade

Customers who have an active license may uninstall the old version and install the new and it will work just like the previous version. No purchase or activation/deactivation is required if you are installing on the same machine. If your license has expired, but you had a "recent" license, you may purchase the upgrade through the self-service portal, or by contacting sales.

[\[back to top\]](#)

[Meet IES, Inc.](#) [Disclaimer](#) [Privacy Statement](#) [Trademarks](#)
Copyright © 1994-2018, IES, Inc. All rights reserved.