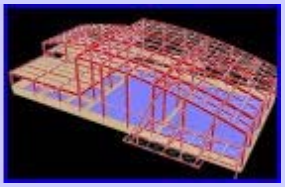
10 Years (1994-2004)

VirtualWork

A newsletter for customers and friends



Volume 10.8, August 2004

ShapeBuilder 4.0 Swims Past 3.0

Citius, Altius, Fortius *(swifter, higher, stronger)*
There is a new kid on the blocks this year and his name is not Phelps. It's 4.0, as in ShapeBuilder 4.0. This kid has been swimming circles around ShapeBuilder 3.0 in IES bathtub competitions and is versatile in all the events:

- Geometric Properties (A, I, S, r, Z)
- Advanced Stress Analysis (s, t)
- Reinforced Concrete Properties (I_{cr})
- **New!** Effective Section Properties (S_{eff})

Trials Coming Up

ShapeBuilder 4.0 will try to win customer praise in a semifinal heat later in August (for a beta test), with the finals scheduled for September.

The Technology of Success

Customers should take advantage of these final moments before the gun goes off to define the standards for this new product. We have already finished these world record

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VisualAnalysis Gymnastics

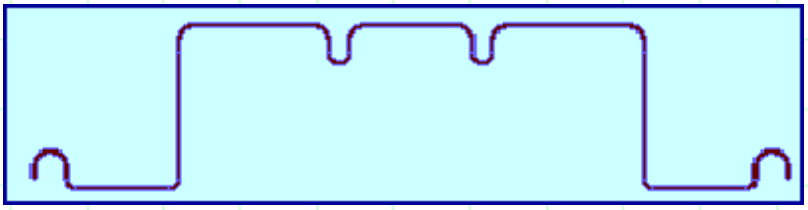
Hidden Features in VisualAnalysis, Part 3

In this month's Olympic Edition of the IES newsletter, we tell you how to get the most out of VisualAnalysis, without any steroids. Just grab your favorite container of caffeine and read this:

1. Synchronized Diving

(*or Multiple Models in One Project and Animated Picture Views*)

features:



- Effective Section Properties (bent shapes)
- Background Property Calculations for Speed
- Advanced Analysis of Built-up Shapes (versatility)
- Smarter, Easier Export to VisualAnalysis
- Lock Shapes in Place
- Mid-Point Snapping and Alignment
- Copy & Mirror in One Step
- Zoom Box Tool, Mouse Wheel Zooming
- More Properties Calculated
- Better CAD (DXF) Integration
- Import Shape Outline by "Points"

Its All in the Timing
As IES developers scramble to finish 4.0, customers can still voice their ideas and suggestions for improvements. Please submit ideas to our suggestion box.

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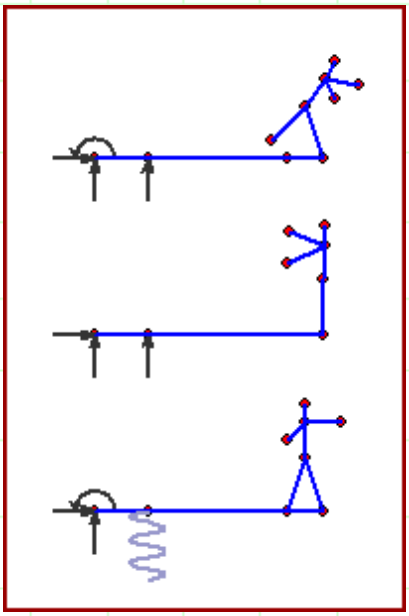
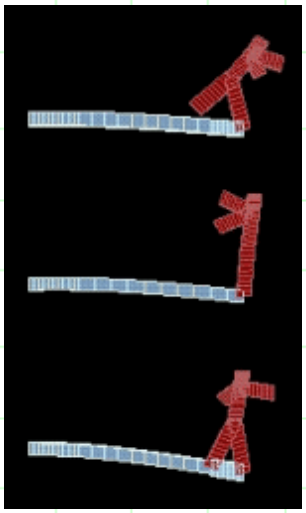
QuickRFooting Dash!

QuickRFooting: The Race is On!
In the Olympic Spirit, IES is introducing QuickRFooting with a small competition. The prize for winning is not a trivial gold coin to hang around your neck, but a handy tool to help improve the quality of your footing designs! Also, because we know that some of you are getting on in years (and perhaps pounds) this competition requires no athletic ability whatsoever. Instead, we are looking for customers to act like judges or rowdy fans. **All you have to do is criticize** our new tool and you could ***win a free license***.

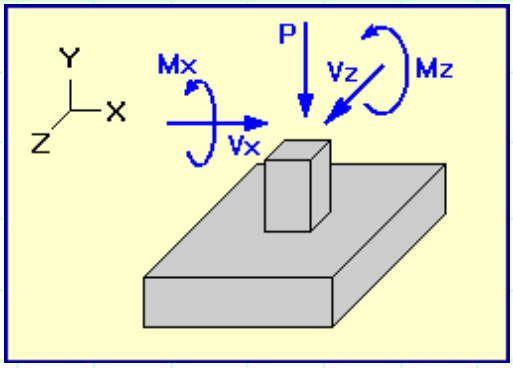
Did you know that you can model two separate structures in the same project file? This is a nice way to compare various configurations side-by-side. There is no real trick to doing it, but you can use **Copy & Paste** to generate the second model before modifying it. In our example we have created three diving boards with various supports and properties to compare:



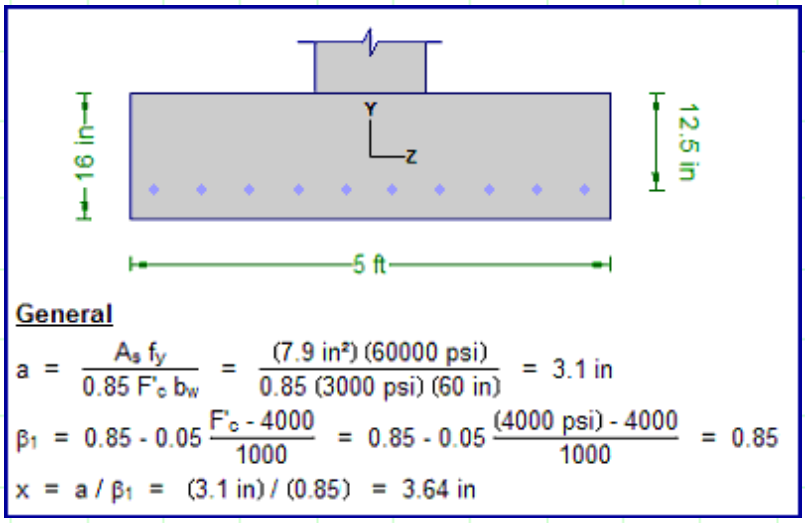
After running the analysis, you can further investigate the structural behavior by looking at the Picture View, and then choosing **View | Animate Picture View** to get this:



2. Fencing
(or Selection and 'Mirror' with Polar Copies)



How to Win?
We will be awarding **Gold**, **Silver**, and **Bronze** prizes to those customers who provide the best quality feedback, the most suggestions, and who find the usability bottlenecks. We will select the three winning customers after the *alpha* and *beta* testing is over. Odds of winning are not known, but probably better than 1 in 50, based on previous beta tests.

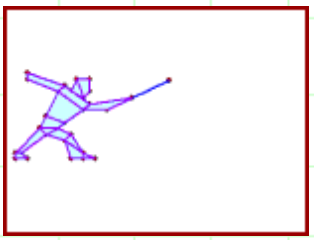


Free to the Fittest
That's right, just download and use this tool for a while, and provide some constructive criticism and you will qualify for the **free license** drawing when we release it! This is "Totally Free", to use our least-favorite redundant marketing phrase. No hidden strings! You get to design some footings, on IES. You get to complain about the tool if it misbehaves or causes any confusion. You will get quick bug fixes and **free** technical support. And, you may get to keep it when it is done. Free use, free design, free support.

Sorry, no time for training, the race has begun:
On Your Mark, Get Set, Download!

What is QuickRFooting?
With an interface and operation very similar to our popular QuickRWall for retaining wall design, this new stand-alone product is poised to offer the following benefits:

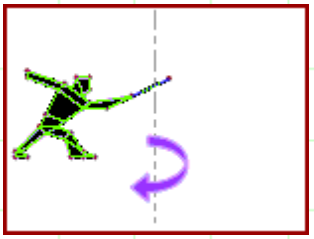
Here's a real trick, and a play on words! ("Fencing" in AutoCAD is similar to "Selection" in VisualAnalysis.)



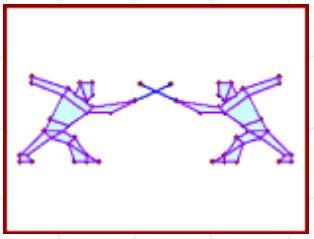
We have modeled a single fencer, but we can't win any medals just practicing all alone, so we would like to create a mirror image. Alas, VisualAnalysis does not offer a "mirror" command!

But we can use the polar generation capabilities of VisualAnalysis to create an opponent. Before doing so, make sure you have a Space Frame model and not a Plane Frame. You can easily switch using **Edit | Project Information**. After generating your mirror, you can switch back!

Then you can drag a selection-box around the entire model to select it. Use the **Model | Generate Copies** command to generate a copy about a vertical (Y) axis:



In the Generate Copies wizard, you select a Polar rotation, the axis of rotation as Y, specify an X coordinate (or node) as the center of the rotation, and then use 180 degrees to create a "mirror" image:



3. Marathon
(or Preliminary Design and Performance)

I am sure that you have put in a few

- Design Isolated Spread Footings Under a Column
- Design Several Footings All at Once
- Based on ACI-318, with IBC Load Combinations
- Automatic Sizing and Detailing (Optional)
- Advanced Handling of Biaxial Loading
- Offset Pedestal from Footing Center
- Checks Footing, Pedestal, and Interface
- Stability Checks:
  - Bearing Pressure (net & gross)
  - Overturning
  - Sliding
- Complete units flexibility
- Export Design Details to DXF
- Complete Reports with Equations and Diagrams

Doesn't IES Already Have Footing Design?
Well, yes we do. VisualTools contains a simple footing design tool, but this will be phased out as QuickRFooting takes over. QuickRFooting will work directly with VisualAnalysis 5.5 (later this year?), but until then you will have a choice of footing tools, the old one and the new one.

Extreme Checks

Footing
- ✓ 0.986 - X Flexure (-Z)
- × 1.282 - X Flexure (+Z)
- × 1.043 - Z Flexure (-X)
- × 1.043 - Z Flexure (+X)
- × 1.208 - Shear (-Z)

Stability
- × 27.435 - Bearing
- ✓ 0.340 - Overturning-X
- × 1.061 - Overturning-Z
- ✓ 0.273 - Sliding-X
- ✓ 0.341 - Sliding-Z

Pedestal
- ✓ 0.018 - Shear X
- ✓ 0.018 - Shear Z

Interface
- × 1.064 - Bearing (footing)
- × 1.535 - Bearing (pedestal)
- ✓ 0.000 - Tension
- ✓ 0.677 - Min Steel
- × 1.037 - Dowel dev (ftng)
- ✓ 0.316 - Dowel dev (ped)

Testing Period
As with QuickRWall and QuickRDesign, both new 1.0 products in the last 12 months, we are introducing this new "marathon" design sessions with VisualAnalysis in the past year. Did your boss ever reward you with a medal? Were your coworkers handing you bottles of Gatorade along the way? Did your clients give you a standing ovation as you presented the results?

Perhaps not. So why do it?!! Here is a tip that is sure to shorten your marathon, and its not a shortcut that will get you disqualified (see Olympic Marathon 1904).

When you have a medium to large project to work on, you can use the following tips to get to a good preliminary design before you waste those precious seconds on analyzing and checking every little thing:

A. Reduce the number of places along members that results are calculated using **Analyze | Performance vs. Accuracy**

B. Turn off the Analysis of selected load cases or combinations using the Load Case Manager (requires VisualAnalysis 'Advanced' level) under **Load | Edit Case or Combination**

C. Limit the 'Design' load cases to just the one or two combinations you think will control the design. Use **Design | Choose Load Cases**.

D. Divide and Conquer. There is no law that says you have to model your entire project in a single project file. Analysis time increases exponentially with the number of nodes in the model. You may be able to model portions of the structure separately and then manually transfer loads to other models.

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Updates and Self Help

IES has published updates to products and added new answers to the Self-Help web site. If you are experiencing any problems or if you have questions, be sure to check out these resources before contacting technical support.

Recently Updated:

- VisualAnalysis Pkg 5.10.0014

tool with a testing period to flesh out any problems or issues before we actually start selling it. Please take advantage of the extended free-testing period with this new tool, even if you don't win the competition you can still get some work done free, and make sure the tool meets your needs.

Award Ceremony

We plan to release QuickRFooting this September, if all goes well. You winners will be awarded your free license key at that time. The rest of you couch potatoes can send in your VISA (every place you want to be) or MASTERCARD (for everything else) and IES will bill you the qualifying fee.

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QuickRDesign 1.00.0002


QuickRWall 1.50.0004

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