The Design Explorer
The Ashlar-Vellum User Newsletter

Third Quarter, 2012

Cobalt's Organic Workflow VS. The Competition

Ashlar-Vellum's Organic Workflow™ is not so much a feature of our software, but an entire paradigm or philosophy upon which our total work environment is based. It's because we consider the designer's environment as a whole that Ashlar-Vellum software is so much more productive for many product developers, particularly non-linear visionaries who tend to think outside the box.

In fact, one of the most important tenants of this concept is that a designer can enter the project at any point in the product development cycle and actively contribute.

Organic Workflow by it's very nature:
- Starts anywhere and goes anywhere.
- Moves freely in any direction.
- Sustains change while maintaining integrity.
- Fosters illumination from within the ordinary.

To support an Organic Workflow, product design software must have these five features:

- **A Non-linear Workflow:**
  This fosters flexibility, spontaneity and free-play within the software's work environment.

- **Parametric History on Demand:**
  Both a blessing and a curse, if a designer is free to use parametric history when needed, yet ignore it when it's not, parametric history greatly increases the creative process.

- **Transparent Tools:**
  Product design software should disappear into the background, becoming an automatic extension of the designer as he or she concentrates on their project without thinking about how to run their software.

- **Holistic Tool Palette:**
  This integrates engineering and design tools including wireframes, solids and surfaces into one interface without having to switch from one mode to another. Freely sketch, develop the model, create photo-renderings and precision engineering drawings all from the same program.

- **Continuous Cross-team Communication:**
  Because product design is an organic process, different deliverables are required by different people all along the way. Any type of data must be able to be passed along to the team at any point in the process.

Ashlar-Vellum Cobalt™ uniquely supports these five requirements. On the following page you'll see specifically where the other major players fall short in light of each one of these five features.

	Non-linear Workflow	Parametric History on Demand	Transparent Tools	Holistic Tool Palette	Continuous Cross-team Communications
Ashlar-Vellum Cobalt	Yes	Yes	Yes	Yes	Yes
Alibre with Moment of Inspiration (MoI)	No • No associativity • Not "true" solids • Many commands only work on one type of object and/or don't have equivalent commands for the various types of objects • Difficult to verify dimensions • Impossible to verify volumes, center of gravity, etc. • Above functions are in other programs, which breaks the workflow, and it is impossible to flow data with history back and forth across these programs	No • History only one level deep • Only on some objects • No constraints / equations	Some • Very modal tools palettes	No • No rendering • No animation • No drafting • Above functions are in other programs, which breaks the workflow	No • Not "true" solids • No drafting • No rendering • No control of stereo-lithography exports across adjacent surfaces in a "solid" – this leads to the inability to print the 3D design • Limited direct data exchange
SpaceClaim	No • No associativity • No independent surfacing	No	Yes	No • No surfacing • Drafting is modal • No rendering • No animation	No • No rendering
KeyCreator	No • No associativity	No	Yes	No • No rendering • No animation	No • No rendering

	Non-linear Workflow	Parametric History on Demand	Transparent Tools	Holistic Tool Palette	Continuous Cross-team Communications
Altair's SolidThinking	No • No associativity • Not "true" solids • Impossible to verify volumes, center of gravity, etc.	No • No constraints / equations	Yes	No • No "true" solids	No • No "true" solids • No control of stereo-lithography exports across adjacent surfaces in a "solid" – this leads to the inability to print the 3D design • Limited direct data exchange
Autodesk Inventor	No • Different modes for everything	No • All history required to make edits	No • Excruciatingly modal tools palettes	No • Everything is in different modules or programs	Yes
Autodesk Alias	No • No "true" solids • Impossible to verify volumes, center of gravity, etc.	No • No constraints / equations	Yes	No • No "true" solids	No • No "true" solids • No control of stereo-lithography exports across adjacent surfaces in a "solid" – this leads to the inability to print the 3D design • Limited direct data exchange
Dassault SolidWorks	No • Requires a linear workflow • Different modes for everything	No • History required at all times to make edits	No • Excruciatingly modal tools palettes	No • Everything is in different modules	Almost • However, it is very difficult to pass useable 2D data to 2D production processes

Mountain Lion Support for v8

Apple recently released OS X 10.8 Mountain Lion. Under testing by the Ashlar-Vellum QA and Technical Support teams, the only issue encountered with our current releases (Graphite v8 SP3, or Cobalt, Xenon or Argon v8 SP2) under Mountain Lion was with Gatekeeper, Apple's new security system for installing applications. Since even these most recent builds of Ashlar-Vellum software were all released prior to the release of Mountain Lion, they do not contain the Apple Developer ID. This means that customers reinstalling Ashlar-Vellum software after upgrading to Mountain Lion will need to:

1. Delete the Ashlar-Vellum software from their hard disk and reinstall either from the website or the DVD.
2. To avoid the Gatekeeper alert, control-click on the installer icon to bring up a contextual menu, choose Open and use the dialog to allow the Ashlar-Vellum software to install.

The Apple ID technology will be built into Graphite v8 SP4 r0 due out later this fall and in Cobalt, Xenon and Argon v9 applications.

STU Renewals

Renewal notifications will be going out in October via email to all users with Student Teacher Units of Ashlar-Vellum software. STU users that still qualify under the STU agreement and with software less than three years old will be issued new 1-year codes upon request and receipt of their signed agreement. Qualifying users with software more than three years old must purchase an annual ASAP maintenance agreement in order to renew their license for another year.

Schools with multi-user lab licenses over three years old must also purchase ASAP licenses. Contact your local Value Added Reseller or Ashlar-Vellum for pricing.

New Service Pack Anticipated for Graphite™

Graphite v8 SP4 r0 is in testing and is expected to be released sometime in mid to late October. This new service pack is expected to include:

- An updated PDF export feature which includes bitmaps.
- An enhanced PDF export feature which optionally exports visible layers only or current sheet only.
- An updated Dimension Tool Palette which resolves issues with macros and linear dimensions.
- No temp files in the drawing folder.
- An updated Save Palettes function that includes saving the screen position of the navigator palette.
- A new software installer preventing installation by non-administrators.
- Updated Windows Dynamic Data Exchange allowing multiple .vc6 files to be opened within the same instance of Graphite when double clicking on a file.
- Improved flexibility within the Undo system regarding customized system configurations.
- A bug fix for Windows 7 that corrects the printing of duplicate pages.
- Code Signatures for both Apple and Microsoft operating systems for streamlined installation.

Interactive Version

Crafting the Dream:
The Art of Furniture Design & Fabrication

Jueri Svjagintsev of Deep Eddy West designs and builds custom furniture. He loves things with shaped legs, carving and lathe work. Jueri got his start from his Russian-Estonian father who always had a shop. Later, Jueri studied painting at the University of Texas, but never lost his love for woodworking.

Jueri told us he was hooked with Ashlar's DrawingBoard™ in the mid-1990's, a scaled down version of our original Vellum®. He loved how it related to the way he worked with lines and angles on his drafting table, but made it easier to do the precision measurements than reading an engineering scale.

Soon Jueri upgraded to Xenon™, our CAD and 3D modeling software, which he describes as a revelation as he began to work with volumetric shapes. He loved the precision of the curves without needing French curve templates.

Today, Jueri finds Xenon particularly useful for aiding client visualization and design changes. The scaled perspective views that took him hours to draw on the drafting board can be done instantly in Xenon. Now changes are much easier and renderings help his clients see exactly what they're going to get in three dimensions. As he tells it:

"I like to do a rendering so I can rotate this thing. Customers think it's cool. And then if I'm really into it and have the material at hand, I'll go out and take a photograph of the actual wood I'm going to use and then project that onto the piece."

Jueri did just that for the Art Deco style table in an homage to E.J. Ruhlmann. Xenon was also particularly helpful in getting the arc of the legs just right. As Jueri worked with the commissioning designer, they went through several iterations before settling on this shape conveying the feeling of gravitas to the table top.

As Jueri draws in Xenon he virtually builds the part just as he will literally build it later in the shop. This helps him avoid mistakes and prevents him from designing something that can't be built. He also uses Xenon to create templates that he prints on his tabloid-sized printer, cuts out and then adheres to the piece of wood using contact cement to use as a guide for cutting.

Xenon is ideal for artisans like Jueri who require highly flexible, precision 3D modeling without cumbersome constraints.

Both above: Jueri often photographs the actual piece of wood and uses it in Xenon renderings like these of the Art Deco style table and this cross.
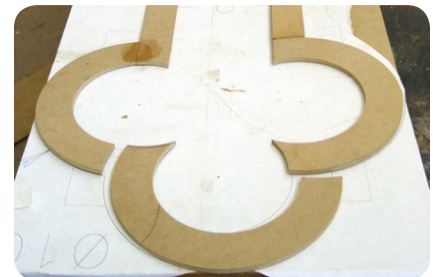
Templates drawn in Xenon are cut out, attached to the wood and used for cutting complex pieces like those of the cross for St. Mary's Cathedral of Austin.

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Software that works the way you think.

Interactive Version

High Stylin' in Xenon with Freestyle Systems Dryers

Inventor, designer and former contractor, Blair Hopper, has patented a uniquely weightless blow drying system for up-scale hair salons across the globe. Using Ashlar-Vellum Xenon™ CAD and 3D modeling software on a Mac, Hopper continues to develop ground breaking products for the salon industry.

More than a decade ago, a stylist friend complained of carpel tunnel syndrome from the hours of holding a blow dryer. Hopper built a weightless system for her dryer and her symptoms disappeared in three days.

Like his original prototype, the Freestyle System applies a unique counter-balance mechanism with a torsion spring instead of a constant tension spring like a cord rewind. The weightless system installs just above each operator's chair and is fully adjustable to the height of the stylist with the touch of a button. It accommodates any number of different brands of hair dryers.

When Hopper first realized he had a commercially viable idea, he set out to design a product where all of the parts could be easily molded or machined. Early in the development process, Hopper brought his 2D drawings to a plastics manufacturer who charged him $2000 to redraw his ideas in SolidWorks just to make a stereo lithography (STL) file. At that point Hopper knew he needed his own 3D modeling software and he was adamant it should be on the Mac. Finding Ashlar-Vellum Xenon, he learned it quickly and has loved it ever since.

Hopper tells about inventing a double helix connector that his plastics manufacture was sure couldn't be built. But because Hopper had figured out all of the details himself in Xenon, the manufacture finally agreed. When Hopper gave the CAD files to the manufacture's engineer, the engineer marveled at how Hopper drew it because the engineer could not figure out how to model it in SolidWorks.

As the development process progressed, Hopper approached Paul Mitchell Systems. Linking up with Robert Cromeans, hair styling icon and artistic director for Paul Mitchell, together they designed his salon in San Diego and later in Las Vegas, featuring the first two installations of the Freestyle Systems dryers. Since then, Hopper's business has grown and now has almost 7000 stations worldwide.

He says about Xenon:

"I like how intuitive the drawing is. If you take something like AutoCAD and Solidworks and stuff like that, you kind of go through a lot more hoops than you do with Xenon. Mainly it's a very intuitive program to use."

The Freestyle weightless blow drying system.
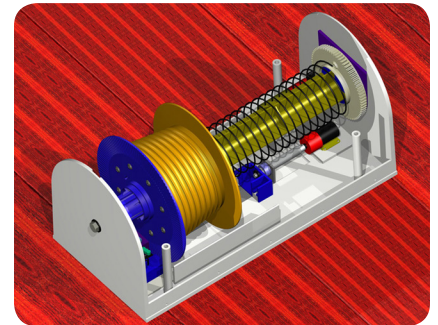
Hopper uses a unique torsion spring counter balance mechanism to create his weightless system for salon blow dryers.
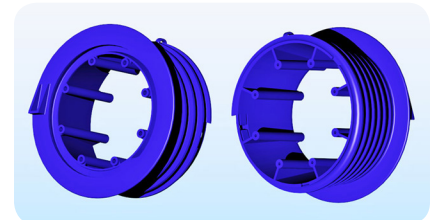
Hopper was able to draw this double helix connector in Xenon even though other engineers couldn't figure out how to draw it in SolidWorks.

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Retired by Design

Merrill Hall hails from Downeast, otherwise known as the coast of Maine. Now retired, he has spent over 50 years as a design engineer for major technology and tool companies, and as a marine surveyor.

A master draftsman, in the early days he had an eight-foot drawing board, "a moose of a thing" as he describes it. In the early 90's he was introduced by a friend to AutoCAD. Taking one look at the awkward interface, Hall challenged his friend to a drafting duel. They would both draw a detail of a machine part. It took his friend 40 minutes to do it in AutoCAD. It took Hall only 10 minutes to do it by hand. "I decided then I couldn't make money with this foolish thing," said Hall referring to AutoCAD, and decided to stay with paper and pencil awhile longer.

Not long afterwards, still in the early 90's, another friend introduced him to Ashlar's computer-drafting software called Vellum running on an Apple. In less than two weeks he was designing even detail drawings in Vellum faster than by hand. "Besides" said Hall, "I didn't have to erase or keep my leads sharpened." The company Hall was freelancing for was looking at a number of CAD programs:

"I told the company, 'If we don't have Vellum, I'm not going to learn another system. This is the one I want to use, period.' ...From that point on, I've never used anything else. Wouldn't even think of it."

In 2008 he retired from all paid consulting work. Since then Hall has moved from the COM license of Graphite™ to Ashlar-Vellum's Research/Charitable/ Retired (RCR) program which gives him a significant discount on upgrades.

He continues to stay busy designing, constructing and machining parts for the boats of his three sons, including a Herreshoff Harbor Pilot boat which he describes as having "the ugliest cabin you've ever seen in your life." Taking measurements, he laid out the entire hull in Graphite. Then they built up a very elegant boat, appraised at more than double what they had invested in it.

Hall has also done design work on his own house, changing it from a little summer salt box to an elegant four-season residence. The job required detailed design work including the framing, studding and lifting the old house four feet.

Hall concludes:

"I just draw on the screen as if I had been drawing on a good piece of mylar. I'm always amazed at how simple the thing is...I can blast out stuff faster than anybody can."
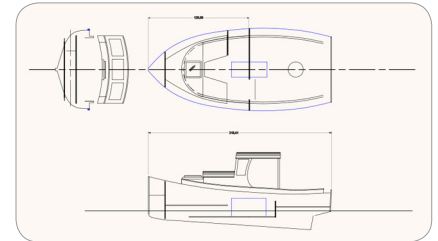
Hall used Graphite precision CAD software to draw the hull of this Herreshoff Harbor Pilot boat rebuilt by him and his son.
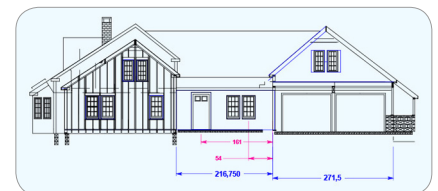
Hall created detailed drawings in Graphite to remodel his summer house into a lovely year-round residence.

Background/Contact

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Always Seen in the Best Light

For almost 15 years, Blair Hopper has designed and successfully marketed innovative solutions for upscale hair salons around the world. An avid Mac user, Hopper found Ashlar-Vellum Xenon™ in his search for professional CAD and 3D modeling software. He tells us:

"The criteria for me was it had to be Mac-compatible, because I have a big disdain towards PCs. So basically that's why I came across Ashlar-Vellum. You guys do Mac and PC. And I saw enough evidence from looking at it that it was a real quality product so I ended up buying a Xenon."

Starting with the design of the Freestyle weightless blow drying system, Hopper continues to develop ground-breaking products such as SpectraLights, a high-lumen LED lighting system that drastically reduces power usage and increases safety, while providing natural light.

Hopper tells how lighting traditionally used in beauty salons tremendously distorts hair color. He saw how salon clients needed to see their results in natural light and started researching LED lights long before they were ever on the mainstream market.

In 2008 Hopper prototyped the first LED light fixture with 1000 lumens that could replace a 100-watt light bulb. At that point about the only LED lights commonly available were little 25 lumen bulbs, mostly for nightlights. Hopper designed these new 1000 lumen lights into lighting platforms with the blow dryers that install easily into a sheetrock or drop ceiling.

In developing the fixtures, Hopper realized that they no longer needed 110 volts and high currents up in the ceiling. Instead of having to facilitate a 15-amp circuit for every ten 100-watt incandescent or halogen light fixtures, the new LEDs drew 17 watts, accommodating about 70 lights on one 15 amp circuit, drastically lowering power requirements. Hopper is now working on a new prototype that reduces the 17 watts to a mere 9 watts with each LED still providing 1000 lumens.

A former contractor and self-taught inventor, Hopper has learned by doing. That's one thing he really likes about Xenon:

"What was really nice about the Ashlar-Vellum software was that I could teach it to myself real easy...I ended up learning everything kind of on my own."
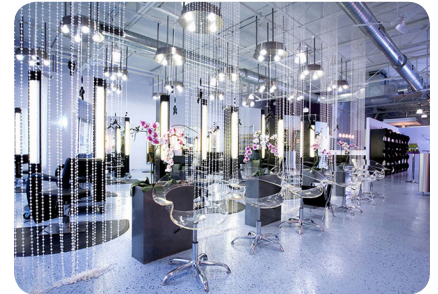
Above and below: the SpectraLights high-lumen, low energy lighting system.

SpectraLights provide directional illumination with the color temperature of natural light, at greatly reduced energy requirements.

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