

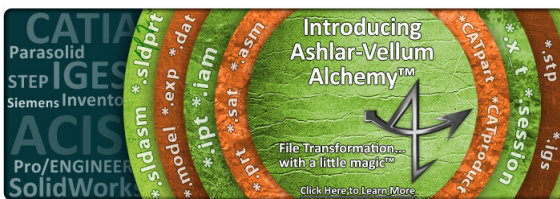
The Design Explorer

The Ashlar-Vellum User Newsletter

Second Quarter, 2010



Announcing Alchemy:Essential™ & Alchemy:Adept™



Ashlar-Vellum is proud to announce Alchemy: Essential and Alchemy:Adept, two new file transformation products using technology from Transmagic.

With Ashlar-Vellum Alchemy:Essential and Alchemy:Adept users can open SolidWorks and Autodesk Inventor files directly in Cobalt™, Xenon™ and Argon™ on either Mac or Windows. Using Alchemy:Adept they can also open Catia v5, Pro/E and Siemens NX files.

The Alchemy plug-ins import the geometry from an extensive list of 3D modelling packages. They offer some of the most advanced healing technology available saving hours of manual rework.

Both accessories require v8 SP3 of Cobalt, Xenon or Argon, now in beta.

Prices are \$995 for Alchemy:Essential and \$2995 for Alchemy:Adept. But for this next month while we're still in beta they can be purchased for \$595 and \$1995 respectively, including full versions upon release. To learn more visit the [Alchemy product page](#).

While in beta we're offering 20% off on all upgrades to Cobalt™, Xenon™, Argon™ or even Graphite™ when purchased with an advanced license to Alchemy. Order now for best savings.

Import From	Alchemy: Essential \$995 Beta \$595	Alchemy: Adept \$2995 Beta \$1995
Catia v5 *.CATpart & *.CATproduct, R6-R19		×
Pro/ENGINEER *.prt, & *.asm, V16-2001, and Wildfire 3 & 4		×
Unigraphics .prt, V11-18, NX to NX6		×
SolidWorks *.sldasm & *.sldprt , Version 98-2009	×	×
Inventor *.ipt, & *.iam, up to Version 2010	×	×
Catia v4 *.model, *.exp, *.dat, *.session, Sequential Files	×	×
ACIS .sat, R2-R19	×	×
Parasolid .x_t, V10-V20	×	×
STEP .stp, AP203-AP214	×	×
IGES .igs, up to Version 5.3	×	×

Cobalt, Xenon & Argon v8 SP2r4 Released

The most recent hot patch for Cobalt, Xenon and Argon v8 has been released and posted to the website.



This new hot patch includes:

- Copy/paste options added from/to Graphite.
- Geometry tab added to Edit Objects for some tools.
- SpaceMouse operation maintained when multiple program file windows are closed.
- Corrected infinite Construction lines problem.
- Original window size now maintained when collapsed then expanded.
- Fixed construction lines when used with parallel line tools.
- Fixed miscellaneous bugs.

Customers currently using v8 can easily update to this version by using **Help>Check Web for Updates** from inside the software.

Graphite™ SP2 r3 Coming

The latest hot patch for Graphite v8 is in the final stages of beta testing and may already be posted to the download site by the time this is published.



Updated in this hot patch:

- Implemented Ashlar-Vellum crash reporter.
- Resolved Apple event error 1708 after printing on Snow Leopard.
- Resolved printing issues under Windows on selected HP printers.
- Solved DWG import issues in Demo mode.
- Resolved a dozen user-reported issues.

Call for Drawings, Models and Stories

Need an Ashlar-Vellum upgrade but are little short on cash? Ashlar-Vellum is always looking for new models, drawings and success stories to use in our Gallery, as sample files, and as training and promotional materials.

We're offering the following **discounts off of upgrades** and additional licenses in return for:

- \$100 Drawing or model in native Ashlar-Vellum file format.
- \$ 50 Detailed engineering drawing in PDF format.
- \$ 50 Photo-realistic rendering in JPG format.
- \$ 50 Photograph of real product in use in digital format.
- \$250 60-second animation.
- \$250 Additional for the above animation with voice over or pleasing music (MUST include rights to music).
- \$250 Notes for a story outlining how Ashlar-Vellum software has contributed to one of your successes, including quotes, drawings or models, and photos. We'll write the story making you look great and link it to your webpage.

All submissions must be approved. Ashlar-Vellum will make every effort to include your name whenever the graphics are used. We will require a signed release allowing us to use all materials for marketing purposes. For more information, contact Ashlar-Vellum sales at 1 800 877 2745 ex 1 or send an email to sales@ashlar.com.

Ashlar-Vellum & US Subs on SolidSmack

USSubmarines, designer of personal luxury submarines, and long time Ashlar-Vellum customer was written up in SolidSmack several months ago. Bruce Jones, president of USSubs is quoted as saying:

"I think one of the great attractions of this type of interface in this sort of software is that you're not having to make dimensional commitments early on. You can pull and push and play around with the thing which makes it a more creative process. Because design has got to be a creative thing, and the minute you're constrained it gets boring and then you lose your spark."

[Click here](#) to read the full article and see some really cool renderings of luxury subs.

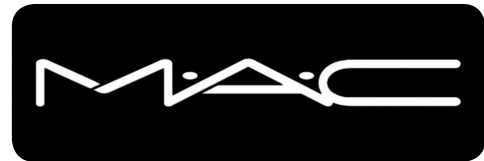
Greg Morgan, former Ashlar-Vellum product manager and tech support guru brought the story to our attention.



SolidSmack is a website dedicated to 3D CAD product design and technology. While heavily oriented toward SolidWorks, they do cover other 3D modelling products and occasionally mention Ashlar-Vellum, especially for the Mac.

Training at Mac Cosmetics

Nick Slaughter was recently in the heart of Manhattan this month conducting training for the team at Mac Cosmetics in charge of packaging, point-of-purchase displays and store layout.



Tom Hall, Executive Director of Industrial Design at Mac commented that they were very pleased the three-day course on Cobalt and are looking forward to scheduling an advanced class later this summer.

Dreams Reached

Yvette Chaparro of Studio Gelato has recently completed the *Reach for Your Dream* three month trial of Cobalt and Graphite and has moved on to 50% off the monthly rental price. To receive the discount she submitted some excellent files of products created in Cobalt including these handsome housewares, now posted in our Gallery.



Glass Wine Decanter



Cordless Hand Blender



Stainless Utensils & Rack

Designed by **Yvette Chaparro** of Studio Gelato. Created in Cobalt

What are NURBS and Why are They Important?

The spline tools in all Ashlar-Vellum products create NURBS (Non-Uniform Rational B-Splines) which are a superset of Bezier curves. These splines are curves created by a complex mathematical formula.

NURBS themselves are not surfaces but NURBS surfaces are created by interpolating a surface among NURB splines. A solid can also be constructed from a collection of analytic and NURBS surfaces with a closed boundary.

Kolorado Loung Chair

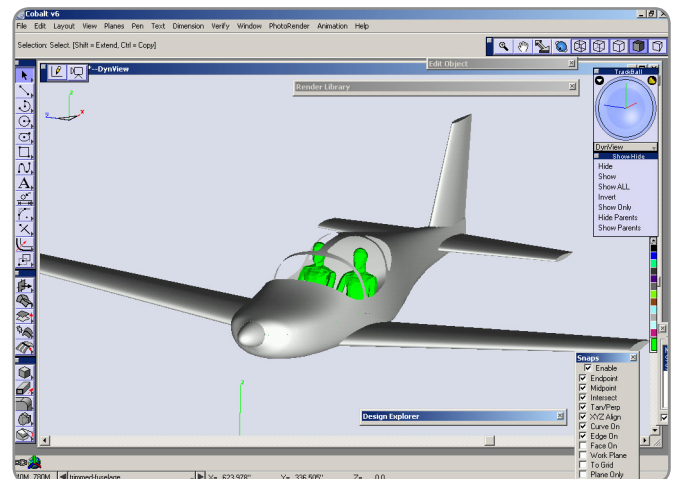


These seemingly simple surfaces, though easy for a hand craftsman to create, would be impossible for production manufacturing if Mark Robson had not designed this chair for Sifas using NURBS surfaces in Argon.

NURB splines provide two interrelated functions. First, the curvature continuity of a surface remains intact when the curve is changed. Kinks don't develop as the spline is altered. Second, NURB splines provide localized control of a complex curve. This lets you isolate an area and make changes without affecting the rest of the spline.

These properties are essential for precision design of objects in many industries. For example, in aerodynamic designs air molecules moving over a wing surface must flow smoothly for maximum aerodynamic lift. If the surface does not maintain curvature continuity, the air molecules separate from the wing surface and cause a vacuum. The vacuum produces an eddy as the molecules try to fill it, disrupting of air flow and increasing drag.

The Smoothie Aircraft



This two-place sport sail plane called "The Smoothie" was carefully designed by Daniel Hatfield using Cobalt's NURBS surfaces specifically so that air would flow over it well.

The automotive industry needs smooth air flow to improve gas mileage. Complete curvature continuity also improves styling. The appearance of a car is one of the major sales factors. As a buyer, you would be unimpressed if the reflection of the showroom lights on the car rippled and wavered. It is complete curvature continuity that makes a smooth reflection.

On-Track Electric Airport Scooter

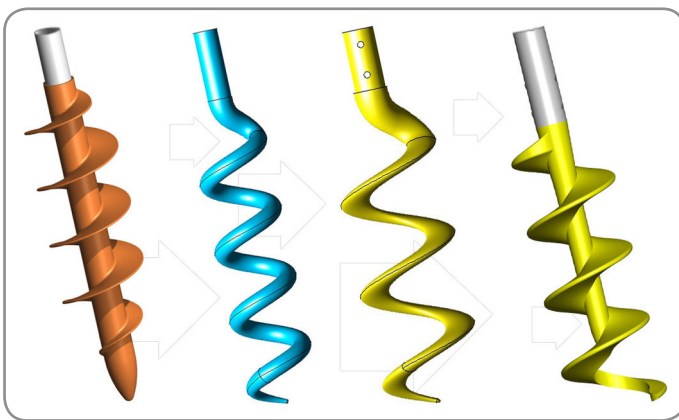


Jean-François Jacques of Météore Design created the sleek lines and subtle curves of the award-winning On-Track electric airport scooter using the NURB surfaces in Cobalt.

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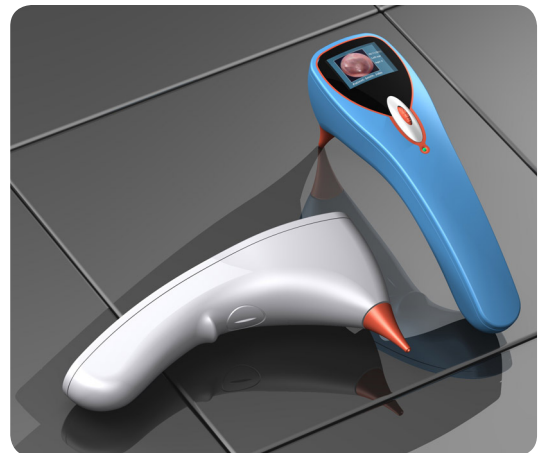
Localized control of complex curves allow minor modifications to be made without adversely affecting the shape. For example, if a new, bigger engine doesn't fit under a perfectly designed hood, you would adjust the NURB splines defining the hood surface to raise the center of the hood without changing the basic design or the continuous flow of the surface.

Sand Moving Tool



Celso Santos and Christian Albanese of Rio 21 Design used NURBS surfaces to create these augers as "sand moving tools" for the award winning Spirit sun umbrella. NURBS surface definitions are mathematically efficient in describing these shapes in Cobalt as well as creating tool paths in CAM software with minimum surfaces.

Electronic Otoscope



Handheld devices, such as this electronic otoscope by Nelson AU, which allows a doctor to look inside a patient's ear, feel better when transitions between surfaces are curvature continuous as allowed by NURBS surfaces.

Surfaces created from NURB splines are also valuable for injection mold designs to eliminate the swirl of plastic as it is injected into the mold. Such designs provide better surface finishes and allow thinner cross-sections in the die.

Finally, consumer products also benefit greatly from the use of NURBS which make it possible for the computer to describe and manufacture shapes that our human brains find more pleasing. What was once simple to create with hand craftsmanship is impossible on a computer without NURBS because the transitions of surfaces defined by Euclidean geometry are easily detected both visually and tactilely. With the invention of NURBS technology, product shapes drawn on a computer can not only be easily adjusted, but can contain continuous curves with efficient mathematical definitions.

In the Spirit of Great Design

Celso Santos and Christian Albanese of Rio 21 Design have good reason to be proud of their Spirit beach umbrella. Like all residents of Rio de Janeiro, Brazil, Celso and Christian have spent their lives on the city's famous beaches. It is only natural that these innovative designers would come up with a new umbrella with three unique features solving several common problems.

The first thing you notice about this sunshade is that it opens inside out. This lets it react naturally in strong winds. Since its purpose is to protect from the sun, not the rain, this makes perfect sense.

Sunshades take off along the beach at the first gust of wind because they are not anchored securely into the sand. Yet increasing an umbrella's grip is not an easy task, even for the "tall and tan and young and handsome... boy from Ipanema." The Spirit solves this problem with a levered handle to easily auger the unique heliod tip down into the sand. The top half of the articulated shaft then snaps into place with a 90° turn, and the party begins.

But as simple as these design concepts may sound, Rio 21 spent months researching, designing in Cobalt, prototyping, and testing eight different concepts for screws and threads to auger into the sand. "The first attempt was a complete flop," said Celso. "We describe it now as a sand moving tool." After much effort, they came up with two prototypes that worked perfectly. The problem was that they were made of sinterised steel or aluminium casting, making the cost too high. They decided the tip had to be produced in plastic. Returning to Cobalt, they redesigned the spiral specifically for injection moulding manufacturing and this time found success.

Next, they needed a handle that made it easy to bore the tip in the sand. Again, the first design, a crank, was rejected in favour of a lever that flipped into place allowing both hands to screw it into the beach. Flip the handles into the vertical position and the top portion of the shaft with the umbrella snaps into place with a twist.

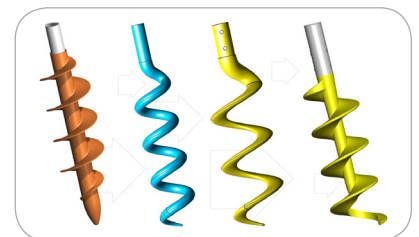
Celso and Christian concur:

"We thought that it was very important to tell everybody that we used Cobalt from the beginning to design every detail of this product. Besides being technically perfect, it is a tool that allows us to communicate with clients, suppliers and consumers."

Shortly after release, the Spirit won Germany's coveted iF International Forum Design award for leisure and lifestyle.



The award-winning Spirit sunshade.



From left to right, the first "sand moving tool," the perfect but too expensive steel prototypes and the final injected polypropylene tip.



The over-injected handles easily screw the tip into the sand, then flip vertically to receive the upper shaft.

Background/Contact:

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