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Contents

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ToshLetter

Monthly Journal on Macintosh CAD and 3D Industries
23 February 2006 - Vol. 2, No. 2

Key-Strokes

Autodesk buys Constructware

In our December issue we mentioned Autodesk in our "Key-Strokes" mini column. And we are doing it again! Why does a company that, for the most part, ignores us Mac professionals deserve such focus? Probably because they just bought their main rival in "online collaboration" services. Now Autodesk's own Buzzsaw will somehow find itself integrated with Constructware. The online project collaboration vendor had 29,000 users of its service going into this acquisition and will adjoin that to Buzzsaw's nearly 140,000. This is becoming a substantial business and a growing part of the digital workflow transformation in AEC. Yet Mac pros are plainly left out in the cold as if they don't exist at all. This is super unfortunate. And as these types of services become more common -- to the point where it's part of a client's requirement for contracting with a design or building professional -- it deals a substantial blow to AEC firms' who use and wish to adopt the Mac. Click here for report.

-- AFR

Breaking News

Graphisoft Targets Global 200

In our latest news, BIM market share leader, Graphisoft, has announced they are targeting the top 200 global construction companies, as they assert themselves in this $70 billion market. Click here for report.

Introduction: Focusing on Acrobat PDF

Anthony Frausto-Robledo, Editor-in-Chief

Having skipped over January due to Macworld Expo and some other items, we get back to the ToshLetter with back-to-back issues. In this issue we devote nearly every page to Adobe Acrobat and the evolving PDF story in AEC (architecture, engineering and construction).

Our major feature article is an indepth interview with Patrick Aragon, Adobe's Acrobat Product Manager. For those who use PDF technologies like Acrobat Professional and for those who do not, this interview will interest you both. Aragon explains where Adobe wants to take Acrobat and how the company sees its PDF technology in comparison to its rival Autodesk DWF. There are of course lots of little details that come to light in this interview and -- most importantly for some Mac pro generalists -- some information about Macromedia's products (Flash in particular) and Adobe's future roadmap.

In the second feature on PDF technology, Pete Evans, AIA, an architect and guest contributor, discusses the uses of Acrobat in his professional experience through the lens of a particular project. His article also pans out a bit from that experience and considers some of the broader implications of the PDF versus DWF debate.

Rounding out these features we have our usual news and analysis coverage of the Mac CAD and 3d worlds plus events. The third issue is devoted mostly to Macworld Expo SF. We hope you enjoy this forth issue. Please feel free to write with your opinions and thoughts. --- *Anthony Frausto-Robledo*, Editor-in-Chief

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News Five

Top Five Recent News Items

No. 1 - Adobe introduces Acrobat 3D

Both in the spirit of this issue of the ToshLetter and in what was really big news in January, Adobe's introduction of Acrobat 3D was the clear favorite frontrunner. We had a chance to see Acrobat 3D in action in a special online session hosted by Patrick Aragon, Adobe's Acrobat Product Manager.

Acrobat 3D offers significant new technologies beyond Acrobat 7 Professional. The ability to work natively and seamlessly with other CAD platforms's 3D formats (beyond just .u3d) is chief among these. Mac CAD users will no doubt be disappointed with the lack of a native OS X version of Acrobat 3D, but that reality has absolutely nothing to do with how Adobe feels about Apple in the CAD world. Aragon said it was simply a reflection of who their [Adobe] partners were in developing it and the product design market. Those partners include companies like SolidWorks, UGS and PTC (all chief competitors of Autodesk) and for the most part are Windows-only software companies.

Acrobat 3D facilitates its connectivity to various apps through the open industry standard OpenGL API interface. Since Apple's many "third-party" 3D and CAD developers utilize OpenGL as well, a Mac version of Acrobat 3D is completely possible. Also, in December, 2005, Datalogics announced that the Acrobat PDF Library (a code library for other software developers to utilize in their software projects) announced complete support for Apple's new Universal binary coding format. This means that Mac developers

Interview: Adobe Talks About Acrobat and PDF

Anthony Frausto-Robledo, Editor-in-Chief

Architosh had the pleasure to speak recently with Adobe Acrobat Product Manager, Patrick Aragon -- not too long before Adobe's unveiling of Adobe Acrobat 3D. In the following interview we talk about Adobe's vision with Acrobat in the AEC market and later in the talk cover some other issues such as what the acquisition of Macromedia may mean for Adobe and Apple's new Intel-based architecture and future support from Adobe. Without further ado, our interview with Adobe:

AFR: Adobe introduced Acrobat 7 nearly a year ago now. How has the take-up been with this new product family? Where is it most vivacious? What industries are most enthusiastic?

Patrick Aragon: Well, I joined the company in the middle of the development of Acrobat 7. Adobe realized then that in looking at the very large customer base there were significant numbers of AEC users and so they [Adobe] made the decision to extend support in that direction. So the take-up in general has been incredible with Acrobat 7, especially in AEC. The ability to produce PDF files from programs like Autocad and Microstation has been very popular.

We also discovered that Acrobat users are very interested in digital forms. And so we have a full "form designer" in Acrobat 7 Professional.

You know the form thing brings up an interesting issue. Has Adobe ever talked to the American Institute of Architects about their forms technology? I ask because the AIA's Documents application has been Windows-only for the longest time and that has been a thorn in the side for many Mac-based architects who are AIA members.

We have looked at their forms. At the AIA show I have talked to them about their forms and, of course, they are a revenue generator for them. You can output to PDF from their forms software [Documents].

Yes I realize that. But although their software -- which is based on Microsoft's Word and there is an excellent version of that for Mac OS X -- does not have a native OS X version. So many AIA professionals on the Mac write in to *Architosh* about that. We even have a petition going. Apparently multi-platform development for the AIA is a major challenge for them. Would Adobe be interested in solving that problem for the AIA?

working on universal binary applications (PowerPC and Intel) have the same access as Windows, UNIX and Linux developers to the underlying Adobe PDF routines.
Acrobat 3D Story Link.

No. 2 - Apple Adds Online Seminars for Architects

A really excellent development coming out of Cupertino these days is the concerted effort the company is putting into marketing themselves to the Architecture market -- a market they traditionally have been very strong in. In Europe, Apple has been consistently marketing to the Architecture market for many years now (and they are stronger there in terms of market share) but in the US Apple is now playing a "catchup" role to their European colleagues.

This noticeable marketing push has taken the form of a series of excellent online seminars (QuickTime video webinars). Apple Europe's own Jacques Sedille, an architect himself, is the featured speaker in a four part streaming QuickTime series. You must register to see the videos but that process is simple and painless. *Architosh* could not be more pleased with Apple's renewed marketing focus in Architecture.
Apple story link.

No. 3 - Apple QuickTime Seminar: Working with DWG on the Macintosh

This Apple online seminar series, hosted by Apple US's own Kenny Lee, Segment Marketing Manager for Architecture, breaks into three separate sessions on working with Autodesk's DWG file format (native file format of Autodesk Autocad). The first session is devoted to working with ArchiCAD and is presented by John Mamuscia of Graphisoft US. The second session is devoted to

Of course. We'd always be interested in talking to the AIA.

So how does the Form Designer in Acrobat 7 Professional work? Could you create sophisticated forms like the AIA's from scratch?

Yes. There are several ways to create forms. We provide many templates which you can use or use to kick-start your own forms. Or you can completely start from scratch. Acrobat is superior for forms because we provide sophisticated and granular levels of security. And we are already doing this type of work with other organizations.

Well that is very interesting. I'll have to look deeper at this issue from that angle. Adobe seems to be literally everywhere in the AEC market from a manufacturer's standpoint. Do you guys have very nearly 100 percent of the market?

I can't tell you a precise percentage. Adobe has 1.52 billion copies of Acrobat Reader in circulation. And that is just what we are able to count. That is taken from our website downloads server data. We can't count redistribution methods like from software developers who include it with their software.

So it's obviously substantially more...when you factor in that.

Yes.

You know more and more file format types are able to be merged into PDF documents, such as the new universal 3d format (.u3d). What is on the horizon? And how do developers of third-party applications get their file formats to be merge-ready with Acrobat Professional?

I can't talk specifically about products that Adobe has not released yet. But the AEC market is very important to us. The .u3d format is an example of our interest in the CAD markets and that format fits us very well.

Why is that?

Because it is an industry "open-standards" format and that is very much in-line with our [Adobe's] approach to the market.

And other formats you guys are interested in?

SolidWorks Corporation's new eDrawings and is presented by Fielder Hiss. Lastly, John Williams of Nemetschek North America presents VectorWorks Architects to demonstrate how his application can work with DWG files on the Mac.

Seminars like this give lucid examples of real-world tasks and how they can be achieved using Apple's Mac OS X platform and various native Mac OS X applications. There are two interesting aspects of this particular series. Firstly, the subject matter itself addresses head-on what is commonly perceived to be a major "pain point" of working on the Mac. Secondly, it introduced eDrawings by SolidWorks to the Mac market. This new application has interesting capabilities and is free. DWG on Mac story link here.

No. 4 - Architecture Meets Seismic Design with ArchiCAD and ETABS

One of the most recent stories focuses on ArchiCAD and its connection to integrated structural engineering solutions. This follows up on our feature story in the first issue of the ToshLetter (see: Graphisoft and the Letter - E - in AEC, ToshLetter v1n1.). ETABS is a major structural engineering solution that is working in a seamless way with ArchiCAD via IFC 2x2 standards for application "interoperability."

In our view this is precisely the way software companies in the AEC field should be working -- driving down inefficiencies and redundant complexity. We are hoping to see more industry players in the Macintosh CAD and AEC market adopting IFC 2x2 standards in the future. ArchiCAD Structures story link here.

I can't tell you what other formats are coming into Acrobat in the next release. But I can tell you that we won't rest...and we'll continue to improve in this area.

Can you tell me what requests you get?

We get a variety of requests across the board in all industries that PDF serves.

Saving to PDF. That is already a big option for many CAD programs and of course on Mac OS X you can save to PDF from the print command from absolutely any application. So will the API's for this technology be extended to the point where from within any CAD application users can "enable commenting", for example, and do other things that Acrobat Professional only does?

There are many "pathways" for creating PDFs. Software companies can license Adobe PDF Libraries for use in their applications. Bentley [Microstation] is a strategic partner in this space. When we launched Acrobat 7 they were able to provide the ability to input .u3d files into PDF documents almost immediately.

And then there are the specs. Every time we release a new version of Acrobat we publish the specifications. From those specifications third-party developers can create their own PDF code libraries which other third-party software companies can utilize to create competitive products to Acrobat. And there are many companies that just focus on a subset of these technologies.

Lastly, another way is to use Acrobat itself. We provide an SDK (software development kit) to developers which will enable them to do various things from within their application if Acrobat is present on the desktop. These C-based SDKs can enable sophisticated features that tie into Acrobat or utilize Acrobat from within the browser. And of course, all of this, the code snippets and sample files are fully available for Mac and Linux as well as Windows. And we leverage Javascript technology to interact with forms and do 3d walk-throughs for instance.

That is fairly extensive. Looking back at the big picture and then narrowing in, where does Adobe want to take PDF technology specifically in AEC (Architecture/Engineering/Construction)? And how do you plan on getting there?

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No. 5 - Novell wants Autocad on Linux

Novell apparently wants Autocad on Linux. And Photoshop and Dreamweaver and iTunes too. A *C/net* story in early February said the Linux maker (Novell owns SuSE Linux now) ran an extensive survey of its Linux users for what desktop applications most users want. Autocad appeared in the top five list.

What is most interesting and intriguing about this story is that it got significant airtime via C/net. When Architosh and Cyon Research published its results of an extensive study on Autocad on Mac OS X, mainstream computing media outlets like *C/net* and *ZDnet* simply didn't notice (despite getting the press releases). But when a small group apparently says they want Autocad on Linux, *C/net* notices. This in itself tells you something about the motivations of the mainstream computer press (at least at this point in time). It says something about their interests in pushing information about Linux over Microsoft Windows and Mac OS X. Novell, Linux and Autocad here.

Feedback

Send us your feedback on the ToshLetter or anything else you see on Architosh. We'd love to hear from you. Email to: anthony@architosh.com

There are a lot of people that have been using PDF for many years and are not fully aware of what it can do. For them, it has been a very reliable printing environment. But the next area we see people looking at is the ability to do full design reviews with electronic comments.

We also see that where there are contracts or where there is cost involved that people need digital signatures. So the customers we see today with the biggest productivity gains are actually combining both of these.

Arguably the end of 2D CAD is coming soon -- probably within the next 5-8 years -- everything will be 3D CAD at some point. How does Adobe intend to evolve PDF technology and Acrobat to address the 3d era? What are the challenges facing the company in this endeavor?

In the AEC market, what we have seen in the last few years is a new change towards BIM requirements. So we are definitely moving to support those requirements and to provide that across platforms. BIM is about better collaboration and we are about providing collaboration technologies across the fullest array of platforms and solutions.

A lot architects for example use our Adobe Photoshop application in their design work, in conjunction with Acrobat and their CAD or BIM program. Or they use Adobe Illustrator as another design source from CAD and use that in conjunction with Acrobat. So we want to be able to fully support that and do it better.

Autodesk is getting progressively aggressive in challenging the rise of PDF in the engineering CAD markets, but here again the company's Windows-only mentality is a visible weakness. The strength of PDF is its universality and platform agnostic underpinnings. How will Adobe leverage this going forward to thwart the Autodesk DWF challange?

The first advantage we have over (Autodesk) DWF is [our] cross-platform support and that is increasingly important. The second advantage we have is our ubiquity across a wide array of operating systems. DWF has actually been available in some form for nearly ten years and today they only have about 9 million downloads. Compare that to Adobe Acrobat 7 where in the first 17 weeks alone we had close to 35 million downloads.

Clearly with Apple on a major rebound and the constant rise of Linux, Autodesk's Windows-only mentality seems to be a key disadvantage for that company moving forward. It seems foolish of them.

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@Last Software

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IMSI, Inc.

Makers of the popular TurboCAD computer-aided software product series. New products for the Mac OS X platform include TurboCAD 2D and TurboCAD 3D. Visit them at: www.imsisoft.com

Nemetschek North America, Inc.

Makers of the award-winning and most popular Mac CAD application, VectorWorks and the entire VectorWorks Series product line, including RenderWorks. Visit them at: www.nemetschek.net

From a cross-platform and ubiquity stand-point they can't compete with PDF.

What are some other key advantages Adobe has over Autodesk with PDF?

The next big advantage is printing support. PDF is an "industry standard" in the publishing world and DWF is not. We have superb printing support across multiple platform environments and that has benefitted customers for years.

Another area where PDF excels is archiving and search. You can archive massive documents in PDF and search them years later quickly.

So Autodesk DWF doesn't have the meta data structure for search like PDF does? Not the same rishness of structure?

No. Not that I'm aware of.

In today's enterprise market and in IT globally there is an increasingly bigger issue at stake about who owns and controls your data, and because of that the embrace of true open "industry standards" is of growing concern. Where does Adobe fit into that trend?

Adobe is about open standards, they [Autodesk] are not. Adobe is about true collaboration through openness, allowing broad support and engagement for PDF. We are talking about putting the power in people's hands.

Are there any other key advantages over DWF?

Another advantage is forms. DWF doesn't have forms support. Another area were PDF excels over DWF is greater language support. And yet another advantage over DWF is data security.

We provide very granular levels of security. We have a server product, Adobe Lifecycle Policy Server, wherein administrators can assign various levels of security to individuals and change that over time.

So it seems that Adobe has so many advantages over DWF, how do you make people aware of this?

We do it through various efforts. One of those efforts is what we are doing today. We do outreach to people in the industry to explain what we are doing today. We have a free tricks series, a lot of free materials; we do

ForumTalk

On the boards this month

No. 1 - Web-based collaboration for Architects on Macs

This thread discusses a key problem in the Mac CAD professional's industry. Other than Copper there are few truly good web-based collaboration tools for Mac pros. Thread 603

No. 2 - Smartphones, PDAs and mobile computing

This thread talks about the use of smartphones in the field. Specifically the value of syncing data with the desktop, database information and the ability to take progress photos on job sites. Thread 1301.

No. 3 - ArchiCAD Discussion - SketchUp Plugin, Intel Mac version, Troubleshooting

The ArchiCAD Forum has a range of issues across dozens of threads. Forum 2.

No. 4 - VectorWorks to 3ds Max Export

This thread talks about getting VectorWorks model geometry out to Autodesk's 3ds Max rendering and animation software. Thread 1469.

No. 5 - Can SketchUp models be rendered in other rendering programs?

This thread discusses this question and shows examples of renderings, including some from new renderer, Maxwell. Piranesi and Artlantis are also discussed. Thread 1113.

seminars or on-demand sessions on the Web.

Let's talk about Apple a bit now. This is that time in the interview. Apple's Mac OS X has built-in capabilities to enable it to create PDF documents by itself, in some ways by-passing Acrobat, is that something Adobe feels okay about?

Sure. Adobe publishes PDF specs to enable third-parties to create PDF authoring tools, anyone can do a PDF product. And this is a good thing! Datalogics, for example, which resells its libraries technology, is expanding its PDF libraries to add Mac OS X support and we are glad to see that.

Adobe has already come out and said they are supporting Apple's transition to Intel chips. Will Adobe have the Acrobat family of products ready for Apple's newest Intel-based machines when they start arriving in early 2006?

Well, I don't think Adobe knows exactly when those machines are coming out, but Adobe is very committed to supporting Apple and we will do our best to support the new architecture.

Autodesk historically hasn't supported Apple's customers in AEC for about a decade. Adobe isn't taking that approach with Apple's professional customers and naturally Mac users are thrilled with that decision. Can Apple customers continue to expect robust support from Adobe in the future? Might Apple customers gain more now that Apple is adopting Intel chips?

Apple is an important partner. I can't imagine Apple users not gaining more from Adobe.

Adobe owns Macromedia now. Macromedia has some valuable Web tools. Can we expect to see some new functionality for AEC users coming to the Acrobat family? How does the Flash animation story fit into the PDF story going forward?

It's a bit early to talk plans.

But what about the integration of Flash and PDF in general?

When we talk about PDF and Flash we talk about an "engagement platform," where there is multimedia interaction inside of a PDF document.

So in speaking of engagement, both Autodesk and Adobe support 3d today in DWF and PDF, respectively. Where is the ultimate advantage in your PDF format?

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PDF Tools for AEC

Options for Mac Professionals

PStill for Mac OS X

Stone design makes a useful PDF utility tool for converting PostScript document files (such as: .eps, .ps, .ai) as well as many other file types, including .sgi, to Adobe PDF format. It can produce compliant PDF/X files and it provides batch conversion. Visit them at: www.stone.com

Stratify PDF

Arts PDF is a useful utility to allow users to stratify PDF documents into layers which can then be managed much the same way as CAD documents. Vector-based drawing documents, typically managed on "layered" formats, can easily be managed and manipulated with this tool. Visit them at: www.lantanarips.com/

PDFshrink

Apago's PDFshrink can be an essential tool for large PDF documents (such as complete CAD sets in PDF) because it can dramatically decrease file sizes for these documents. Acrobat tends to produce fairly large files when complete CAD sets are generated. The tool optimizes PDF files reducing their bulk. Visit them at: www.apagoinc.com

pdf-FieldMerge PHP Edition

A very interesting software product that could allow architects' offices to automate various RFI format data via their Web site. Contractors would submit information into a typical HTML web form and this information would be automatically converted into

We have been talking about it [PDF]...in a platform sense itself. We provide the specs and the [code] libraries.... It's not just a document "file format" -- it's much richer.

Patrick, thanks very much for speaking to *Architosh* today about Acrobat and PDF in AEC.

You are very welcome.

Perspective on Form and Format: Project in Review

Pete Evans, AIA, Guest Contributor

1998-2000:

The office (1) where I was employed worked on a project that had a profound affect on my posture toward technology, design and architecture. The VRAC C6 Virtual Reality Facility (http://www.vrac.iastate.edu/facilities.php) became a "looking glass" into the ever accelerating and converging technologies surrounding the built and un-built environments -- and how we as designers, architects and inhabitants produce, communicate and inhabit these spaces and settings.

PDF Workflow:

The design was first explored in Alias Maya on an SGI workstation and further developed in auto-des-sys Inc.'s form-Z on both PCs and Macs. Ultimately, the design geometry (plans, sections, and elevations) was translated to Autodesk AutoCAD 2000 for documentation, the office-selected, project-documentation software. Prior to and during the early design-to-production transition for project documentation, the Schematic Design and Design Development submittals were presented to the owner both as "paper documents" and as "electronic documents" on CDR for review in addition to being hosted on a user-supported project internet site for enhanced "user/owner/consultant" participation. These documents were created internally by the project team using form-Z, AutoCAD, and desktop design software such as Quark XPress, Adobe Photoshop and Macromedia Freehand.

The Construction Documents were also notable in that we had realized an efficient workflow that automated the electronic documentation to PostScript (PS) files from AutoCAD with minimal effort using Autodesk's

a PDF document file. Universe Software, GmbH, of Germany makes over a half dozen PDF software tools. Visit them at: www.ovis.biz/

Other Tools & Discussion

While PDF creation is currently built-in to Mac OS X via the Print command, both it and Adobe's own Acrobat tools do not create the most space efficient PDF documents, and this is a key feature of PDF conversion tools that are CAD specific. There are several CAD-industry PDF and DWF tools that have emerged in recent years, however none of them support the Mac environment largely because they are often built to support Autodesk and Bentley products. CADzation has a line of well-reputed products under the AcroPlot brand name. AcroPlot Pro has a wide range of CAD and document file support formats. Another interesting player in this field is Bluebeam which makes several products under that name. Bluebeam tools enable faster production of PDF files from popular CAD formats, including ArchiCAD and SolidWorks. These products are also cheaper than Acrobat Pro and Acrobat Standard and match and exceed them in features.

As discussed in the Adobe Interview article (herein) Datalogics is bringing their PDF code libraries to OS X-Intel. This will result in developers' abilities to prepare new capabilities with PDF in their applications. And we hope in time that key CAD-oriented PDF developers move to support the Mac with the addition of these libraries. To learn more visit them at: www.datalogics.com/

Batch Plot Utility (BPU), solid print-drivers for the plotter (Oce 8830 w/ PS RIP) and Adobe Acrobat tools. The electronic file plotting took only a few minutes, and the file conversion from PS to PDF was transparent using Adobe Acrobat Distiller, which automatically created single-page PDF files. We then used Adobe Acrobat for collating the electronic drawing set into a multi-page, single-file PDF (22"x34"; 54 pgs ~ 11Mb). The final composite electronic drawing set (PDF) was hyper-link "enabled" within Adobe Acrobat within a couple hours (non-programming level) while the bidding documents were being printed and copied. This electronic PDF document set was used in multiple ways throughout the project completion, including: CD deliverables on CDR; easily navigable project-set on-screen and posted on the project website; and printing on-demand including half-size sets (11x17) by the winning contractor -- easily printed as needed to laser printers, the print set most used on the job site.

In Reflection:

There were several factors present which allowed the workflow to facilitate usable PDF electronic documentation. These factors also provide a good "lens" from which to frame today's PDF versus DWF debate for the Macintosh CAD community.

Project & Vision. The client's project was very forward-looking and technology-intensive (process and project). As consultants, finding appropriate modes of communication and technologies to enable the project made sense -- especially alongside the firm's forward-looking and technology-intensive design solution.

The client provided a project website and project webcam, and we delivered every document and drawing prepared to that website. PDF was the most appropriate solution where clients, facility managers, consultants and contractors could all access the files in an open and accessible format. While relatively "read only", this tool was absolutely an asset in communication and project execution. At several points, DWG and DXF files were also prepared and delivered for specific purposes such as electronic shop drawing coordination, CAD/CAM as well as CNC.

Support, Control & Tools. The office that delivered this project was a full service AE firm (1) and was a multi-platform office including PCs for AutoCAD documentation, SGIs and Macs for 3D visualization, and PCs and Macs for graphics and marketing support. Print output media then in-

cluded: a large volume plotter - Oce 8830 w/ PS rip; Tektronix Color laser; and a few HP 4MVs. All print devices were postscript capable including the plotter which required all the AutoCad stations to be setup (PS2 files at that time) for plotting to a PostScript (PS) device.

The in-house project team (architecture & structural / mechanical / electrical engineering), was also willing to allow the opening of their CAD files to confirm and adjust proper view setups for batch plotting. With the office's assets (hardware, people, & experiences), creating this type of document became an exercise of simple coordination as the extensible knowledge and experience were already there. The plotter drivers were also good enough that output was easy and consistent -- though sometimes a challenge between AutoCad and PDF output.

Conclusions:

The PDF documentation workflow was reasonably transparent to both AEC-savvy and non-technical users as a representational tool and file-format. It was platform transparent as well as a relatively open and accessible format. The file size was very reasonable and quite usable at about 200 KB per page and vector-based -- which made scaling half-size prints a negligible issue. Printing these PDFs to a high-resolution laser-printer was also an advantage as prints are sharper, including the reduced sets which were popular on the construction site.

The electronic PDF documentation worked quite well as it literally took less time to create the hyper-linked document than it did to print the bid documents. It was, however, only a mirror-copy of the paper contract documents -- with some additional hyper-links. Again, additional geometry files were required at certain points and were derived and delivered from the original 3D data set, albeit not "live" or information-model oriented. The project design, by its nature, was also geometrically challenged and not database challenged.

The design and project was not compromised by this technology or methodology but rather enhanced, if anything. With technology today as pervasive throughout the process and products of the AEC industry, it is paramount that the goal remain to enhance both the process and product, keeping design and production in AEC as effective and transparent as possible to allow for the best outcomes.

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Events

CAD and 3D Events Coming Up

Apr 20 - 23: COFES 2006

The Congress on the Future of Engineering Software is an invite-only event which Apple has attended the past two years, having a tech suite there last year. Apple's interest in attending this show concentrates on communications with some of its developers who are also there.

Jun 8 - 10: AIA 2006 National Convention and Design Expo

The leading convention in the US for architecture professionals. Last year Apple returned to the event for the first time in over half a decade with a special event, although the company did not exhibit. The event easily surpassed its registration limit and was deemed a huge success.

Jul 30 - Aug 3: SIGGRAPH 2006 - Boston Convention & Exhibition Center

SIGGRAPH is the world's premier event for 3D professionals across the widest array of industries, from architecture to industrial design to film and 3d on the Web. Apple has had a major booth presence for years at this show and we expect Apple at SIGGRAPH in 2006.

Postscript:

AutoDesk introduced DWF with very specific industry aims. Industry literature and propaganda has proposed DWF as a replacement for PDF -- even beyond the AEC industry. This aggressive campaign by Autodesk was initiated to gain a foothold in the workflow and output where PDF is today robust and popular for publishing electronic CAD and non-CAD documents in AEC. Many AEC tools today are actually quite savvy, with the capability to publish full electronic sets from digital building information.

This foothold is a critical step for the next evolution for the industry, and DWF shows a clear vision for tomorrow's digital building infrastructure, albeit a proprietary solution. Autodesk, through DWF, wants to provide a live, intelligent document (call it enhanced BIM) which supports a project from inception to construction to actual use and operation -- something already being realized in other associated industries known as Project-LifeCycle-Management (PLM).

Adobe's PDF may indeed be maturing to accomplish similar goals, but from beyond the AEC industry and not exclusively from within it. It will take the industry time to adopt strategies that make use of the strengths and promises of both formats. Today PDF is established, standard, fairly ubiquitous and complements an industry in transition using a large strata of media, solutions and output files (like DWG, DXF, STEP, IGES, & STL) required for reference, document delivery, and fabrication. The industry is truly multi-faceted, multi-dimensional and multi-variable, and it is daunting to imagine working in a singular ecosystem where the sole direction and control ultimately reside by proprietary aims.

While most DWF and PDF comparisons are subtle to negligible by user control for today's working environments, there are some larger enabling factors which are now seeding DWF into some large production workflows. Some of these supporting "ecosystems" are already realized with associated industry support for DWF through PLM electronic document production and ADS Adenium project management with full PLM capabilities.

Still, the fundamental differences and goals for DWF -- aside from the proprietary aims and issues -- are within a live, intelligent document with potentially all the AEC capabilities envisioned. DWF is not mature today, but its anticipated gains (likely 5-10 years from now) for the AEC industry are

possibly quite compelling as Autodesk continues to be a perceived bearer of standards for the industry. This “perception” may be what ultimately drives the mindshare and marketplace outcomes.

Mindshare and marketplace factors are something the Macintosh CAD community appreciates, even if it is sometimes perceptually frustrating. However, digital platforms are evolving quickly in some unanticipated and prolific ways with Apple and the Macintosh as driving factors for much of this change. In this environment of uncertainty and newness, Mac CAD professionals in particular need to pay attention to the subtle signals indexing the debate between PDF and DWF. The outcome will, likely, deeply affect our practice on the Mac platform.

Pete Evans, AIA, is a practicing architect in Des Moines, Iowa, at Baldwin White Architects. He has practiced architecture on multiple computer and CAD platforms and is actively investigating the practice issues surrounding the use of Adobe PDF and Autodesk DWF in the practice of architecture.

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Feedback

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