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E D A
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There have never been so many options within Autodesk software for design visualisation. Greg Corke talked to Chris Ruffo, Autodesk, to get a clearer picture of the recent software developments in this rapidly evolving sector.



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30 COMMENT >> **GETTING THERE - MAPS AND LBS**

The AEC sector needs to be au fait with OS MasterMap Integrated Transport Network (ITN) Layer in order to meet the needs of customers and add value to already rich propositions, says eMapSite's James Cutler.

33 CASE STUDY >> **ON THE RIGHT TRACK**

Leading rail network engineering consultancy Holland Railconsult generates up to two million technical drawings and specifications every year. The company enhanced its file sharing and archiving processes with Acrobat Professional and PDF.



34 COMMENT >> **OPENGL V DIRECTX**

Later this year Microsoft will be launching Windows Vista, its long awaited next generation OS. With Vista actively promoting DirectX, Robert Jamieson asks what is the future of OpenGL, the 3D API used by most CAD applications?

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www.preconstruct.com

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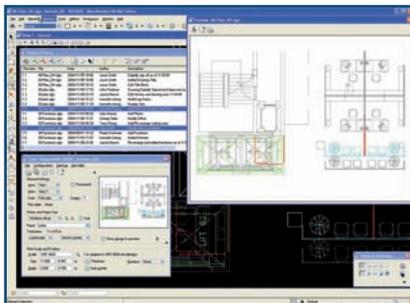
Canon's distribution partners are:

Bentley unveils new MicroStation

Bentley Systems has released the commercial version of MicroStation V8 XM Edition, which features a new interface, a range of new features, an unchanged DGN file format and full support for existing V8 standards.

"MicroStation V8 XM brings immediate project throughput improvements without introducing the pain and delays that so often accompany advances this substantial," said CEO, Greg Bentley. "Adopters of V8 XM can increase their contributions to the many distributed enterprises using earlier versions of MicroStation or any version of AutoCAD."

MicroStation V8 XM includes ProjectWise StartPoint, an built-in technology which provides an entry-level collaboration tool. New Element Templates enable users to Integrate CAD standards with MicroStation Tasks to align features and tools with design and production workflows. Link Sets can now be used for managing and navigating



relationships of content within files such as drawings and specification documents and across formats including DGN, DWG, PDF, and Office formats, and a new DirectX Graphics System is designed to significantly increase view and navigation speed in 2D and 3D designs.

Turn to page 14 for more on MicroStation V8 XM.
www.bentley.com/microstation

Imass helps customise scaffolding design

RMD Kwikform, suppliers of formwork and falsework to the worldwide construction industry, and Autodesk reseller Imass Design Solutions have worked together to customise AutoCAD so that it calculates ground and soffit levels for building scaffolding for in-situ concrete bridges. According to RMD Kwikform's IT manager, John Watson, the program is cutting a week's work down to two days - and is currently being used across the globe, particularly in Europe, the Middle East and Australia.

The program also cuts down re-work if changes are made; for example, if the earthworks are run through earlier than expected. "Previously this made drawings redundant and everything had to be recalculated. Now we just re-model the ground level and re-run the scheme. This re-generates all the new quantities and changes in equipment," says Watson.

Although the UK has moved away from in-situ concrete, this method of bridge building is used extensively worldwide. While the concrete creating the bridge deck is

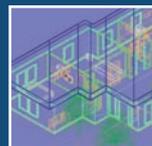
in liquid state, it is held within a form and temporarily supported by the falsework. Once the concrete is set both the formwork and the falsework are taken away.

"The process of calculating quantities of materials and equipment needed can be time-consuming and tedious, so anything that can help us do it quicker helps us retain our competitive edge," he says.

The program works out ground and soffit levels wherever there is a leg. These measurements are entered into AutoCAD to generate a 3D model of the temporary works, from which detailed levels, quantities of materials and full sets of drawings can be produced.

Watson explains that although he created an original version of the program 20 years ago this is the first time it has been done using the programming side of AutoCAD. "Before I had to develop my own drawing engine. Now, thanks to Imass' help, using AutoCAD makes the process far more streamlined and efficient." www.imass.co.uk

Autodesk Design Review



Autodesk is shipping its latest release of Autodesk DWF Composer software, renamed to Autodesk Design Review. Design Review 2007 is designed to

enhance collaboration between extended product development teams. The new release features advancements in its 2D and 3D review, measure and markup capabilities. www.autodesk.com/designreview

AutoCAD on site survey tool



Leica fieldPro is a new on-site CAD software for surveyors and AEC professionals. fieldPro works with Leica Geosystems sensors, such as TPS, GPS and

Leica Disto plus, allowing users to create and visualise 2D drawings or 3D CAD models of sites in real time. Leica fieldPro is designed to enable users to carry out all tasks on site with no site revisits or rework and reduce office work. Leica fieldPro works directly inside AutoCAD and other Autodesk products and adds a set of menus and toolbars to the user's existing AutoCAD toolset. www.leica-geosystems.com

AutoCAD 2007 eBooks



upFront.eZine Publishing has released two more ebook titles for AutoCAD 2007: the updated edition of Tailoring AutoCAD 2007 and the brand-new Tailoring

Visual Styles. Now in its 5th edition, Tailoring AutoCAD 2007 shows step-by-step how to customise AutoCAD. Tailoring Visual Styles is a brand-new mini-ebook on how to work with the new visual styles feature in AutoCAD. www.upfrontezine.com/eBooks

AutoDesSys updates form.Z



AutoDesSys has introduced form.Z 6.0, the latest release of its 3D solid and surface modeller which features new capabilities in object animation and 3D

printing with colour and textures. "Although these are the top heavyweight features of this release, these developments should not overshadow other very important new capabilities that extend form.Z's modelling power", said Chris Yessios, President of AutoDesSys. www.unlimited.com/3ddesign

Greater London terrain captured by laser



 BlueSky's 3D digital map is already being used to map potential flooding in London

Aerial mapping company BlueSky has announced a new 3D digital map of the whole of Greater London. Captured using the LiDAR (Light Detection and Ranging) distance measurement system, the aircraft-mounted laser technology determines accurate heights of land and buildings. The digital data, which provides height above sea level readings every metre with an accuracy of 15 centimetres, was created by Infoterra and is now being made available commercially by BlueSky.

"We believe this data to be the highest resolution and most up to date for this area," said Rachel Eddy MD of BlueSky. "It is set to revolutionise a range of environmental management, security analysis and urban development applications." www.bluesky-world.com

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Airport design tool



AeroTurn Pro is a new airside design software program developed by Transoft Solutions.

AeroTurn Pro simplifies the process for designing and evaluating apron clearances and passenger boarding bridge layouts, including those to accommodate the class of NLA (New Large Aircraft) such as the Airbus A380 (pictured) and Boeing's 787 Dreamliner. Meanwhile, Transoft Solutions has also announced an update to its vehicle manoeuvre and swept path simulation software, AutoTurn 5.1. www.transoftsolutions.com

AutoTurn 5.1. www.transoftsolutions.com

Entry-level collaboration



Bentley Systems has unveiled ProjectWise StartPoint, an entry-level collaboration tool, based on Microsoft Office SharePoint technologies, for MicroStation and AutoCAD users. "Information management is perhaps one of the biggest challenges facing infrastructure teams - their work is so necessarily collaborative and distributed," said Bentley's Chief Executive Officer, Greg Bentley. "Large organisations have been successful with our ProjectWise system of servers. With the introduction of the ProjectWise StartPoint tool, ProjectWise is now for everyone."

www.bentley.com/ProjectWiseStartPoint.

www.bentley.com/ProjectWiseStartPoint.

VectorWorks Google link



Nemetschek's VectorWorks Design Series is now compatible with content in the new Google SketchUp 3D Warehouse. All users of VectorWorks Architect, VectorWorks Landmark, VectorWorks Spotlight, and VectorWorks Designer V12 have access to the wealth of 3D content in this warehouse, and can directly import SKP models into their VectorWorks designs.

<http://sketchup.google.com/3dwarehouse>

<http://sketchup.google.com/3dwarehouse>

Canon looks to CAD market



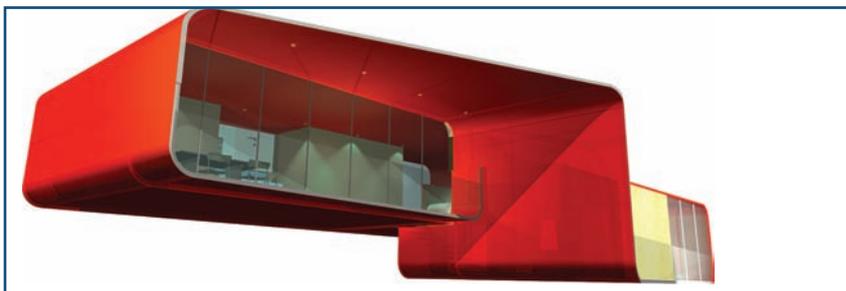
Canon Europe has launched three new additions to its large format printer (LFP) range. The imagePrograf iPF700, iPF600 and iPF500 with flexible print widths have been specifically designed for the CAD and general use markets. www.canon-europa.com

www.canon-europa.com

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Graphisoft ships ArchiCAD 10



ArchiCAD 10, the next version of Graphisoft's Virtual Building modelling solution, is shipping now on both Windows and Macintosh platforms.

The new release features a range of modelling enhancements including slanted elements, where walls, beams and columns can be set to any desired angle; Custom cross-section profiles for columns, beams and walls; Priority-based walls intersection, where users can control how composite walls intersect; and complex elements can also be re-shaped in any view.

The entire design-to-documentation workflow is now integrated within ArchiCAD, which is designed to enhance the stream between the model and the drawings.

ArchiCAD 10 also features new interaction methods

which are claimed to make the program much more accessible. According to Graphisoft, all relevant data, graphical or numeric, is always at hand, guiding users when needed, and continuously offering feedback.

"Our aim was to enable an unprecedented level of design freedom while staying within the Virtual Building framework of generating 3D geometry, quantity calculations and drawings. Our users are delighted with the result, and we expect many great buildings of the future to be shaped with ArchiCAD 10," says Akos Pfemeter, Director of Product Management. "In addition, the workflow and interaction improvements will have a direct and positive benefit on our customers' bottom line."

www.graphisoft.com

Google launches free SketchUp and 3D library

Google has launched a free version of Google SketchUp for creating, viewing, and modifying 3D images. The 3D design and visualisation application can be used by anyone who wants to build 3D models for personal use or for display in Google Earth.

Additionally Google has launched the 3D Warehouse, a repository of 3D content that is designed to serve as a single source for searching, sharing and storing the world's 3D content. Available within SketchUp the 3D Warehouse enables users to share their 3D creations and collaboratively develop 3D content for Google Earth. Both geo-referenced models (those that have been assigned a specific location in Google Earth) and non-geo-referenced (free standing) models are available in the 3D Warehouse.

<http://sketchup.google.com/3dwarehouse>

Autodesk Civil 3D 2007 connects with Google Earth



Autodesk has previewed a Civil 3D 2007 Extension for Google Earth, which according to Autodesk is the first Google Earth publishing tool designed

to specifically meet the needs of Civil Engineers and Surveyors. Featuring a wizard-driven interface, users can publish intelligent Civil 3D objects and metadata including points, parcels, alignments, corridor models, surfaces, and hydraulic networks directly to Google Earth.

The Civil 3D 2007 extension, which currently only works on the US version, creates a .KML file which can be opened in Google Earth. Users can email a view of their project to colleagues from within Google Earth, or share projects with an extended team by storing it on a network or web-server. www.autodesk.com/civil3d

Microsoft Windows and CAD to run on Intel-based Macs

Apple has introduced Boot Camp, a new software tool that enables Intel-based Macs to run Windows XP. Boot Camp allows users with a Microsoft Windows XP installation disc to install Windows XP on an Intel-based Mac, and once installation is complete, users can restart their computer to run either Mac OS X or Windows XP. Boot Camp will be a feature in "Leopard," Apple's next major release of Mac OS X, that will be previewed at Apple's Worldwide Developer Conference in August. This latest move comes at a time when there has been a lot of speculation surrounding the increasing role Apple Macs could play in the CAD market. www.apple.com/macosx/bootcamp



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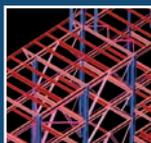
Autodesk goes green



Autodesk has unveiled the Sustainability Centre, a new website which will serve as a resource on the role of technology in sustainable design

and profile industry leaders from manufacturing, building and infrastructure who are realising their sustainable ideas. www.autodesk.com/green

MultiSuite for AutoCAD 2007

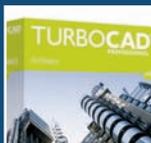


MultiSuite software is already shipping its MultiSuite structural CAD tools MultiSteel and MultiRebar for AutoCAD 2007.

MultiSuite for AutoCAD 2007

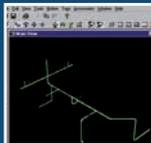
includes all the advanced features of MultiSteel v16 and MultiRebar for BS8666:2005. MultiSuite for earlier versions of AutoCAD has also been updated to ensure consistency in offices running multiple AutoCAD versions. Existing customers can download the latest upgrade from: www.multisuite.com

TurboCAD for architects



Avanquest UK has unveiled a new version of TurboCAD Professional Version 12 from IMSI. In addition to a range of core enhancements, V12 features a new add-on module, 'Architectural Pack', which includes the ability to create parametric doors and windows and to drag and drop them directly into the walls of a 3D drawing. It also allows the selection of the specific properties of each object, including frames, hinges and knobs. TurboCAD will also automatically generate the appropriate symbol for the 2D version of the drawing. www.turbocad.co.uk

Alias unveils I-View CAD 2



Alias, a provider of piping software solutions to the global process plant industry, has announced the release of I-View CAD 2. I-View CAD is a software

application that converts piping isometrics created in any ISOGEN enabled system in either IDF or PCF format to either a MicroStation DGN or AutoCAD DWG 3D model file format. According to Alias, users do not need extensive knowledge of AutoCAD or MicroStation to produce 3D piping models. www.alias.ltd.uk

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Piranesi support in AccuRender 4

The latest version of AccuRender contains a built-in interface to Piranesi, the "3D Painting" tool from Informatix Software. AccuRender provides raytrace and radiosity rendering for AutoCAD and Revit.

As a result of a collaborative development project, AccuRender 4 allows you to render to the Piranesi EPix image format in which every pixel has a depth and material value as well as a colour. Piranesi can then be used to paint in textures and details that are difficult to model such as people, furniture, or plants. Users can also create a wide range of impressionistic styles. Perspective is handled automatically.

Brian Woodward, managing director of Informatix Software says, "We have had many requests from AutoCAD and Revit users who wanted a better way to create renderings which they could further develop using Piranesi. AccuRender 4 provides exactly this possibility."

Bob McNeel of Robert McNeel & Associates, the developer of AccuRender, adds, "AccuRender and



Image created in SketchUp and Piranesi, courtesy of WangWang, Shanghai

Piranesi together cover the entire 3D rendering spectrum from high-end photometric accuracy to hand-drawn effects. The Piranesi interface and many other new features in AccuRender 4 further establish it as the renderer of choice for AutoCAD and Revit users in the architectural and construction industries".

www.informatix.co.uk / www.accurender.com

Dosch Design expands 3D design Viz model family



Dosch Design has updated its range of architectural design visualisation models with the introduction of Dosch 3D: Lo-Poly People and Dosch 3D: Bathroom & Spa. Lo-Poly People contains 130 textured 3D models of people and typical group arrangements, which use a low polygon count (ca. 6,000 polygons per person) so they can be used in mass-scenes and large architectural scenes.

At the other end of the spectrum, Dosch 3D: Bathroom & Spa contains 120 very detailed and fully textured 3D models of bathroom or spa-related products.

Both families of textured 3D models are provided in multiple file formats: 3DS, 3ds Max (v4 and above), Lightwave (v6 and above), OBJ, Maya (v4 and above), VRML and Cinema 4D (v7 and above). www.doschdesign.com

Hobs takes on 3D printing

Art Systems, the sole UK distributor of the new Contex Designmate Series of 3D printers, has appointed its first accredited 3D reseller partner - Hobs Reprographics.

"Many of our customers use Hobs to print their tender documents and so quality of presentation is paramount," said David Gordon, Chief Executive, North of England.

"With the addition of the Contex Designmate, customers will be able to show their presentation models, and accurately convey their concept models early in the design process. Colour will allow them to address form fit and function errors, with the ability to label and mark models clearly, streamlining their design and manufacturing process and saving money. We are confident that the Designmate's low running costs, speed and quality will enable our customers to win business we may not otherwise have got."

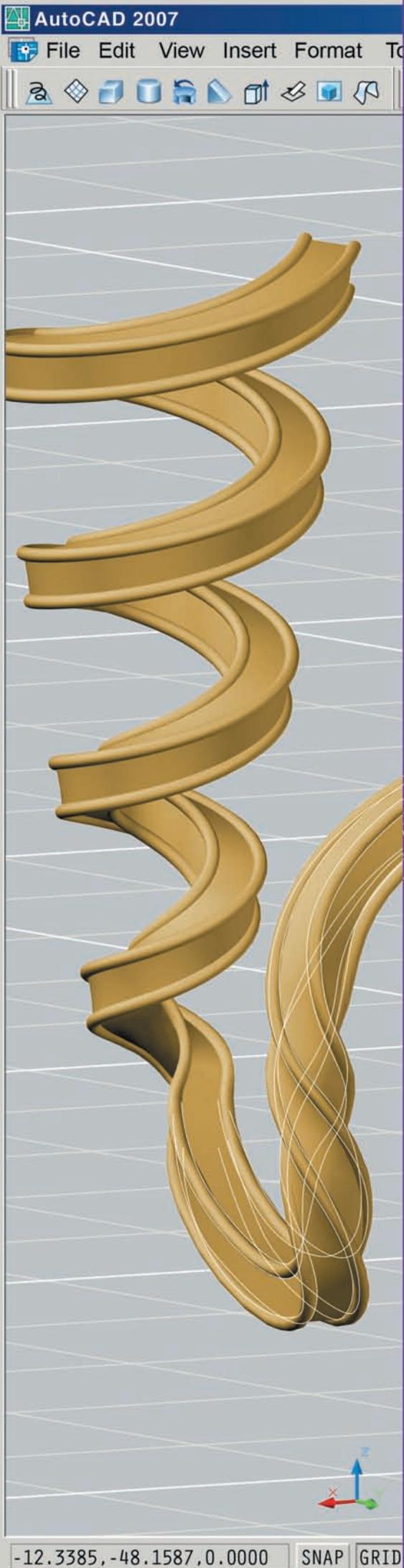
Hobs Reprographics is best known for its 2D printing service and solutions and boasts a network of 26 branches and over 375 employees across the UK and Ireland serving the AEC and large format technical print market.

www.artsystems.co.uk / www.hobsrepro.com

McLaren unveils Enterprise Engineer V3.5

McLaren Software, an independent software vendor specialising in applications for engineering process and content management, has announced the release of Version 3.5 of its flagship application suite, Enterprise Engineer.

The new release extends the broad, document-centric capabilities of earlier versions of Enterprise Engineer - thanks largely to its work-management capabilities. This is designed to enable executives to gain valuable insights into their company's engineering operations and centralise control of all key processes across the enterprise. During the past decade, more than 500 global companies have adopted McLaren Software to centrally manage drawings, data sheets, correspondence, calculations, transmittals, specifications and financial projections. www.mclarensoftware.com



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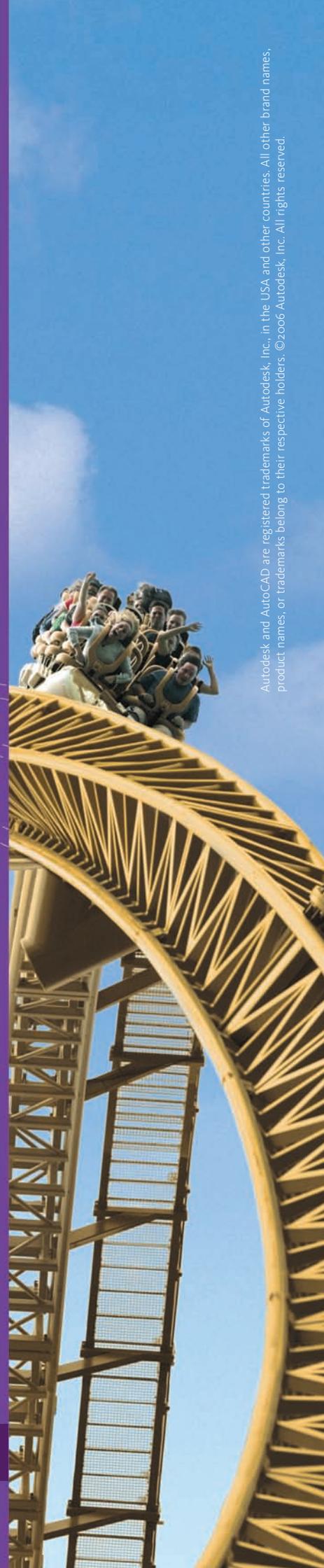
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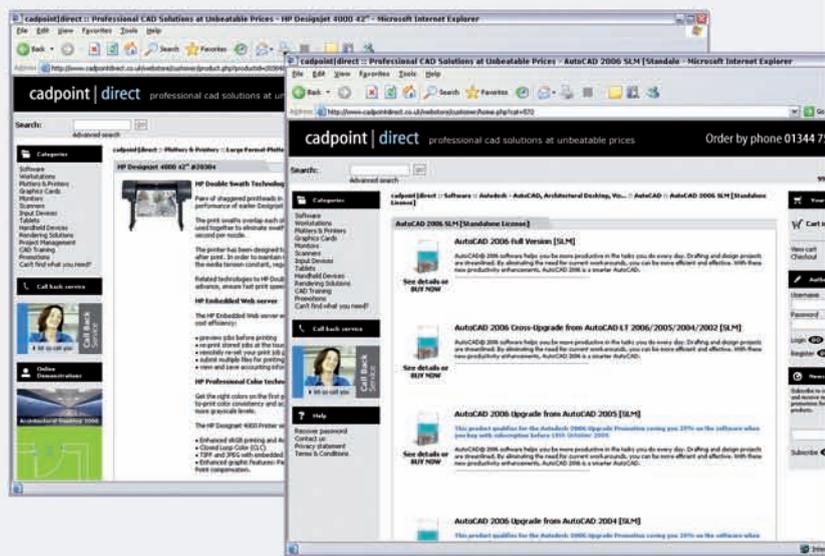
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Architectural Desktop 2006/7 Essentials	3 Days	£695
Autodesk Viz 2006/7	2 Days	£595

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AutoCAD 2007 and AutoCAD LT 2007

Martyn Day

The latest version of AutoCAD, the classic 2D CAD tool from Autodesk, finally brings 3D to the masses. The question is, do the masses really want that kind of functionality? Martyn Day takes a closer look at AutoCAD 2007 and AutoCAD LT 2007.

A new version of AutoCAD every year is now the norm. With each release, Autodesk has been working around themes and beefing up the functionality in specific areas, such as presentation, 2D and collaboration. To date, the AutoCAD development team has done an impressive job of adding really useful and innovative functionality to what had become a fairly stagnant, yet universally popular product.

AutoCAD 2007, released in March, is the latest and greatest release and, here, the development team has been exceptionally ambitious, fitting in major changes. The main theme for this version is 3D. While not necessarily the main use of AutoCAD, being the 2D stalwart that it is, Autodesk has made a bold attempt to update AutoCAD in an area that, to be honest, was pretty bad. The last time Autodesk did a major 3D update was in Release 13, adding ACIS and breaking the product in the process. But fear not, the development team has done a great job this time!

It's as if Autodesk has added a completely new 3D CAD package into AutoCAD. AutoCAD now operates in 'Classic' mode or a new 3D mode. Both feature different interfaces and rightly so. AutoCAD, in 'Classic' mode, by and large looks like the last release, with the odd tweak here and there. 3D mode, on the other hand, looks more like 3D Studio Viz or SketchUp.

With the design industry slowly but steadily moving to 3D solutions, it's right that AutoCAD is brought up to date, to offer millions of users the chance to at least play and experiment with 3D modelling. The MCAD industry is well on the way to a 3D only market but AEC (Architecture Engineering Construction) is progressing slowly. However, the success of products like SketchUp has demonstrated that an easy to use 3D tool does have its place in the predominantly 2D architectural practices. Ease of use appears to have been one of the key themes behind Autodesk's 3D implementation.

What's new in 2D?

So, 'what's new in 2D?' The XREF Tool palette acts as a management tool for total control of attached or referenced documents and images within a file. AutoCAD 2007 now allows DWGs to be added as an underlay, which is actually a very impressive way to attach light-weight drawing information to DWGs. To attach a DWF, pick an insertion point, scale and rotate, although unlike an XREF you can control the contrast of the DWF image, clip it and snap to it, making tracing a great new option.

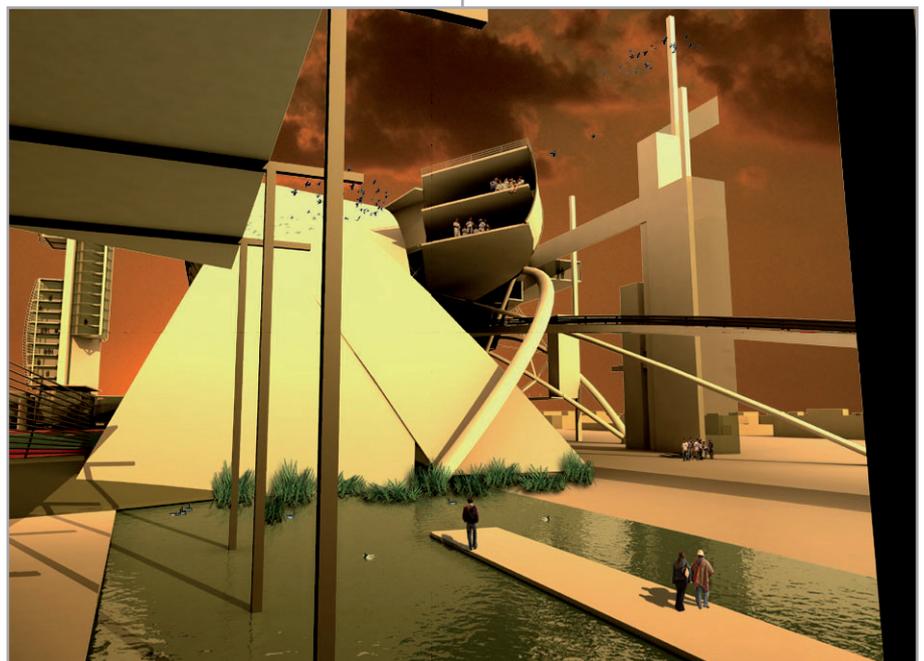
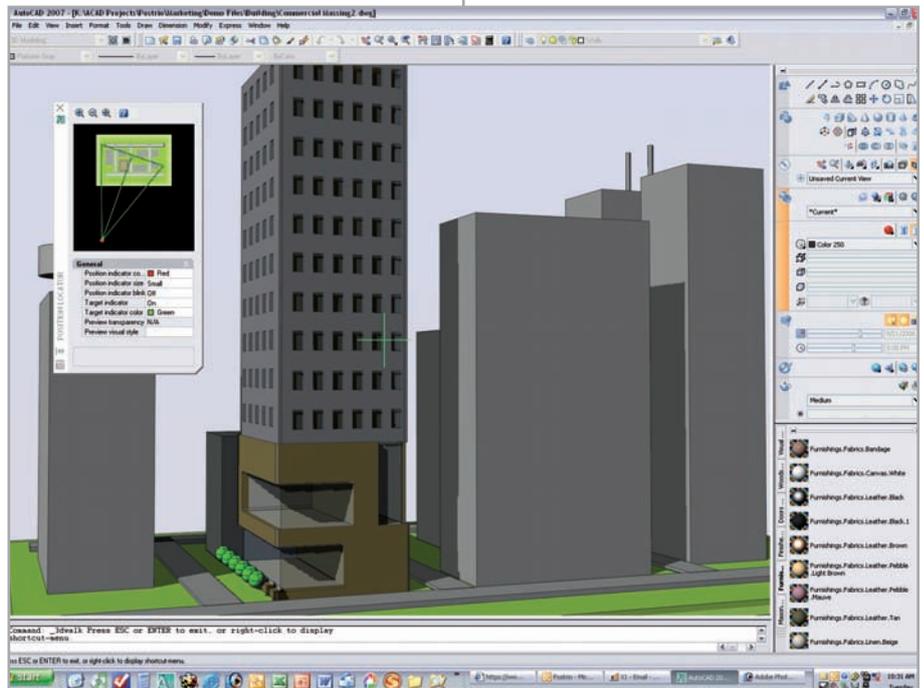
Much has been said in the war of marketing between Adobe and Autodesk. Despite pushing DWF as the solution for engineering drawings, Autodesk has finally implemented a PDF plot capability.

The Express tools that were included in the last release have been incorporated into the menu structure – which is really just tidying up from AutoCAD 2006.

With all the 3D changes and some behind the scenes architecture work, the ARX specification has changed, which means that the DWG file format has changed with 2007. It also means that third party ARX applications will

need to be updated to run with this release.

Prior to the launch of the product, Autodesk was telling journalists that there would be a DGN read/write capability (DGN is Bentley's MicroStation CAD system format). However, 2007 has shipped without this functionality in the box. Autodesk has said that it will ship the DGN utility some time this summer. It's unusual for Autodesk to say something will be in AutoCAD and then to pull it or delay it. We understand that Autodesk is reverse engineering the format itself, so perhaps it has taken longer than expected. It's interesting that Autodesk is recognising that there are other CAD systems out there. What's more likely here though is that Autodesk's Civil and Geo division needs DGN compatibility to compete with Bentley in these relatively new markets. Autodesk is also making noises about the Process Plant sector. N.B. As we went to



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Bentley BE Forum, Prague

Bentley Systems recently held a major week-long user event in the Czech Republic to launch the long awaited MicroStation V8 XM, unveil ProjectWise StartPoint for entry-level collaboration and announce major enhancements to its Select program.

Martyn Day

Prague is a beautiful city, of that there is no doubt. The majestic castle and bridge never fails to impress and every little turn always offers another architectural gem. Even though in summer it's buzzing with tourists and British stag parties, this well preserved city, combined with the famous Czech hospitality, makes the destination an excellent one for a European user event, and that works doubly so when the World Cup is on.

Bentley has had a European jamboree for its users once before, in Rome, but this was many, many years ago. Since then it has kept its yearly main event strictly in the US, moving about the West coast through Philadelphia, Baltimore, North Carolina and Florida. Prague represents a significant return of focus to Europe for the company, running its Prague 'mirror' event only a week after the US BE (Bentley Empowered). Many of the company's executives were in town for the event, headed up by Bentley CEO, Greg Bentley.

There were a large number of product and business strategy announcements at the event, with the core focus on the latest version of MicroStation V8 – called XM. MicroStation still acts as the core platform for most of Bentley's vertical products for Process Plant, AEC, Civils and GeoSpatial. Strangely enough, Bentley is one of Autodesk's biggest developers (although that's an unofficial title), also owning a number of applications that run on, or alongside, AutoCAD.

MicroStation V8 XM

V8 was the last release of MicroStation and it was a major reworking of the product, especially with regards to the database and capabilities behind the scenes of the CAD product. The work resulted in a major change to MicroStation's file format, DGN but provided Bentley with an interesting edge, offering dual format support for its own and AutoCAD's DWG format. For years, Bentley's customers had complained about problems working within a DWG world and in V8, Bentley pretty much removed many of these issues, allowing MicroStation to work in either format – a major engineering challenge.

The downside was that while V8 was a lot of engineering work, it still looked the same as the previous editions of MicroStation and really was falling behind the competition in user interface and graphics capabilities. V8 XM is the completion of this major product overhaul, entirely replacing the graphics pipeline and significantly whizzing up the 3D performance. XM by the way doesn't stand for anything.

For those of you that have never used or owned MicroStation, Bentley has a continuous improvement development process as part of its Select subscription, which means that it's always hard for journalists to tell you what it can and can't do as it's continually having functionality added to it!

In the past Bentley has lead the way with many innovations like Xrefs, image manipulation tools and CAD

management aids. While Autodesk has recently picked up the innovation gauntlet, XM has a few cool new things in it beyond the 3D graphics enhancements:

Element Templates: It's now possible to integrate CAD standards with MicroStation Tasks to align features and tools with design and production workflows, so that teams can create consistent work.

ProjectWise StartPoint: Document management is now built-in providing an entry-level collaboration tool to manage, find, and share CAD and geospatial content using Microsoft Office SharePoint technologies. The product works with MicroStation and AutoCAD.

Reference Enhancements: You can attach a PDF reference to a design file, dynamically manipulate reference clipping boundaries with handles, and attach multiple instances of the same model at different stages of development using Design History – a unique V8 feature that lets you roll forwards and backwards through design milestones.

Link Sets: By placing special links between documents and across formats including DGN, DWG, PDF, and Office formats, it's possible to collate related documents and this can be leveraged by ProjectWise.

PANTONE and RAL colour systems: Catching up with AutoCAD, MicroStation now supports 24-bit colour to deliver richer, more consistent presentations.

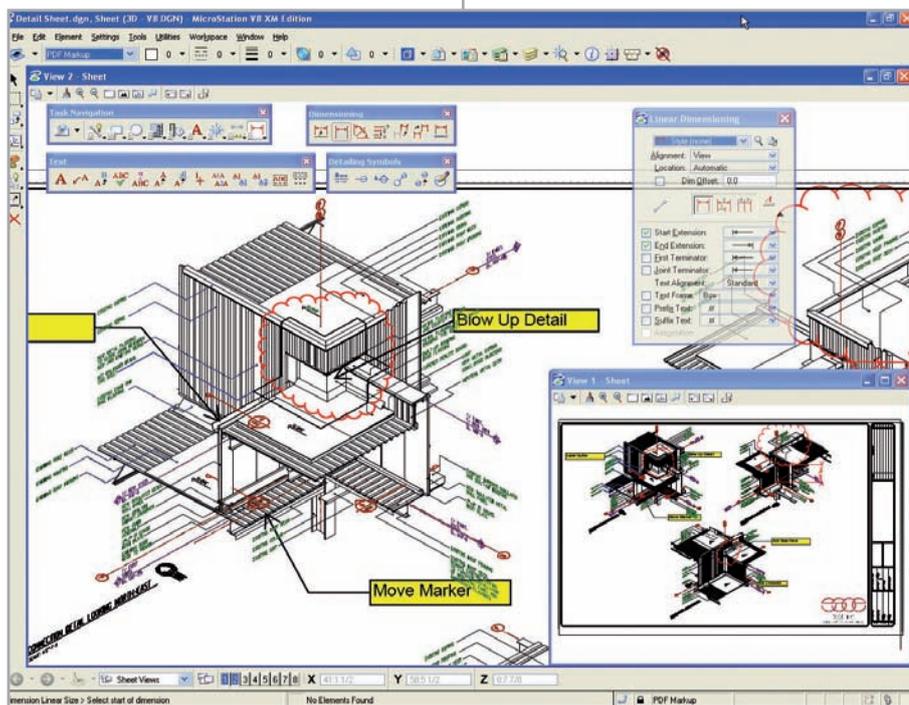
DirectX graphics system: As we pointed out recently, there's a new display subsystem in town and it uses Microsoft DirectX technologies which are used to drive high-speed graphics technology in the video gaming industry, brings a significant increase view and navigation speed in 2D and 3D designs. It also places MicroStation in an easy to port to Microsoft Vista's operating system, whenever it gets released.

3D modelling advancements: A big beef up in the 3D department to coincide with the new speedy graphics engine, MicroStation now offers 3D parametrics, mesh modelling for creating lightweight structures, and new handles for intuitive and interactive editing. Visualisation and animation have also been improved.

And finally, Keyboard Position Assignments: Bentley has introduced 'Patented keyboard position assignment' to provide immediate access to any MicroStation command at the stroke of a key, and programmable mouse functionality to increase the performance of view and model navigation. While this sounds grand, MicroStation has always had powerful keyboard shortcuts.

Even though Autodesk released AutoCAD 2007 in March with a new DWG file format, MicroStation V8 XM doesn't yet support the new DWG format. Bentley is

<< With V8 XM you can attach a PDF reference to a design file, dynamically manipulate reference clipping boundaries with handles, and attach multiple instances of the same model at different stages of development using Design History



reliant on the Open Design Alliance (ODA) to reverse engineer the format and hand over the libraries. We were told that once the ODA had done this, MicroStation V8 XM will have that functionality added to it, probably within one of the regular Select upgrades.

Overall, MicroStation has undergone a big change over the last two releases. It's taken quite a while to get there, XM having been in beta for the last year alone. The inclusion of ProjectWise Sharepoint promises to be a significant benefit for MicroStation customers that couldn't justify the cost of implementing full ProjectWise and could lead to wide-spread adoption of Bentley's PDM tool within its base. Bentley has also targeted Autodesk customers with a special port of the application at what sounds like an attractive price per seat.

While it's hard to get excited about a vanilla CAD system these days, it's pretty obvious to see how Bentley's vertical product portfolio will make great use of the new 3D technologies within MicroStation v8 XM. At first we are expecting to see mainly flat ports of existing applications but over time, XM will drive 3D functionality and adoption.

Generative Components

Long standing readers of AEC magazine will be well aware of my fascination with Bentley's Generative Component technology. There's very little out there to compete with this parametric form-finding application that is built on MicroStation. The event included a number of end-user presentations describing how Generative Components has already been used on a number of major projects, the largest of which is a soon-to-be-built London skyscraper designed by KPF.

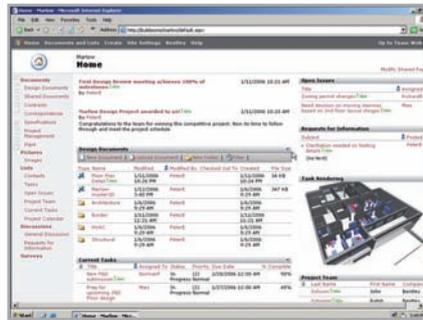
While the software has been in development and beta for almost three years, it's now getting to be proven in the field. Generative Components offers a programmatic way for designers to scope out their designs and interactively adjust and interact with complex frameworks to derive optimal forms. At the event Lars Hesselgren of KPF demonstrated that its latest tower project had a number of last minute height changes which were easily catered for by the Generative model which he had created.

It looks like Generative Components will get its official launch in September of this year. A recent popular event at the British Design Museum attracted many London and New York based practices, who are all experimenting and looking at these sorts of generative designs.

Robert Aish, Bentley's Director of Research gave me a one-on-one demonstration of how a Generative Component model is created. In the workshops I have to admit that it appeared as if extensive programming knowledge was required but I'm glad to say that it's fairly straightforward to build simple frameworks, using standard MicroStation geometry and a point and click interface. Once the concepts have been mastered, some programming knowledge will be required but I think the early and useable results will drive people to skill up to drive the system to solve more complex problems.

Select update

Select is Bentley's subscription program. For a set fee, cus-



ProjectWise StartPoint: Document management is now built-in to MicroStation providing an entry-level collaboration tool to manage, find, and share CAD and geospatial content using Microsoft Office SharePoint technologies.

tomers get support, regular upgrades, pooled licences and many other things. This year Bentley upgraded Select to offer even more and one unique benefit.

From September 1, Bentley adds three new three offerings within Select, now nine in total:

- 1 Annual license exchange (new)
- 2 Pooled and Trust licensing
- 3 Continuous product development and updates
- 4 OnDemand eLearning (new)
- 5 BE Conference registration
- 6 Help desk
- 7 ProjectWise user subscription (new)
- 8 Additional software to extend the enterprise
- 9 Select membership in the Bentley Developer Network

The main event here is the annual licence exchange. Bentley says that this protects an organisation's investment in Bentley software. It does this by providing subscribers with the opportunity to rebalance their technology portfolio in the year ahead. To do this, Bentley has first stated that all software on maintenance is worth the current list price. So while you may have bought MicroStation six years ago, it's worth the current list price of MicroStation when you go to trade it in for another Bentley product. That's like owning a car for six years and never losing any value off it – which is pretty cool. Once a year as you re-subscribe you can re-allocate licenses and products from the Bentley portfolio for the value of the software you trade in. This is an industry first. Software licenses can be exchanged to accommodate changing business requirements, replace underutilised licenses or as part of a 'trade-up' to new Bentley technology.

Online eLearning courses should help keep users skill up or move from one release to another. I think this is great technology although I am unconvinced that it's as good as one on one training but then again it's free and as it's part of Select you can sit through it as many times as you want. There is definitely a skills shortage with MicroStation users few and far between. I don't think this is the solution for that but anything to assist increase the pool of users would be welcome.

Finally it's worth mentioning the new trust licensing model. In the past, Bentley customers have been able to use pooled licenses, allowing a company to buy fewer licenses than users, and let MicroStation be a shared resource. The

new strategy is to remove this limit, which impacts Bentley customer's productivity. So with the new XM Select server, there will not be a limit to the number of licenses that can be handed out. Instead, usage will be sent to Bentley and over many, many months (Bentley is being a bit vague here but the indication is a year), the company will gauge your usage and come back if you regularly use more than the number of licenses you own. It's kind of like an honesty bar but Bentley is watching.

I had a number of conversations with users over this and the trust licensing caused the most concern. The pooled version meant that the first thing users did when they got into work was to start a copy of MicroStation, so they could hold onto the license all day. Despite trying to get users to use the system properly, MicroStation license scarcity drove users to hoard! The concern is that with trust licensing users will continue the culture of hogging and then run up a bill with Bentley. Bentley has tried to limit this worry, saying that only obvious abusers will be picked out. It's also possible to time out MicroStation sessions. I can see what Bentley thinks it's offering users here and if used correctly, could be of great benefit. There's just an element of big brother about usage reports and users fear additional expenditure. I am sure this will work out over the next year.

While on the subject of Select and subscription models, I have talked with users of many different CAD systems and there seems to be a growing wariness of subscription, in that it's a honey pot designed to tie you in and become more reliant on one technology vendor. I can see their point. Rapidly, users are questioning the value they get from the yearly membership fees, as CAD systems become more and more like a service than a product. Bentley has an enviable subscription model in the CAD industry and from these recent announcements is undoubtedly aware of the on-going value assessment.

Conclusion

Bentley BE Forum, Prague was a successful event in all, with lots of good product and end-user benefits announced. Bentley is continuing to develop its technology portfolio and broaden its flexibility with customers. One wonders if Bentley's marketing will increase, as its presence has certainly been absent in the European market. Having a major launch event in Europe once more, is a start. We hope to review MicroStation V8 XM soon.

www.bentley.com



Greg Bentley, CEO Bentley



Design Viz at Autodesk

There have never been so many options within Autodesk software for design visualisation. Greg Corke talked to Chris Ruffo, Autodesk Media & Entertainment, to get a clearer picture of the recent software developments in this rapidly evolving sector.

Greg Corke

Q Design visualisation has been gaining momentum within all of Autodesk's AEC products. What tools do you get in AutoCAD, Revit, ADT, and Civil 3D for rendering and animation?

Chris Ruffo: The toolset varies dependant on the package, but the main tools which have migrated into Autodesk's AutoCAD 2007 package is the powerful mental ray render engine, the accurate Daylight system, and the walkthrough functionality. Visualisation has always been an important area within Autodesk products; however, only recently have we seen a greater emphasis being put on user friendliness. The latest 2007 releases have seen signif-

icant advancements in their 3D content creation tools. This is not just good news for 2D CAD users, but also for existing 3D users. We no longer have to recreate geometry to be used in Autodesk 3ds Max or VIZ, and as a result spend more time on the creative side. As designers, we want to spend more time being creative, and the latest family of Autodesk products allow us to do this.

Producing convincing visualisations and animations used to be only limited to the technical design houses. This is no longer the case. We have also seen a greater push on interoperability between all Autodesk products, and in particular working within a 3D environment. For

example we can seamlessly take ADT models, textures, and cameras into 3ds Max for advanced functionality and control. The latest versions - 3ds Max 8 and VIZ 2007 - are substantial releases for the AEC community.

Q If you are an AutoCAD, ADT, or Revit user, what are the benefits in using a dedicated design visualization solution like VIZ or 3ds Max, with particular reference to functionality, workflow and render quality?

CR: The quick answer is advanced photorealism via greater control and added functionality, and as an added



 Stone Court, Hastings. Image courtesy
 of Preconstruct (www.preconstruct.com)

animations and photorealism.

Once we've either created the models within 3ds Max or VIZ, or used existing content from other CAD packages, we can then begin to add extra realism and real world believability. Among the many features and quality improvements, we can also produce very complex animations with complete user ease. An example of this is the Pro Booleans extension in 3ds Max, which allows subscription users to produce cut-away sections of products, or carefully create stunning animations of buildings where the walls and ceilings peel away to reveal the interior.

The history of 3ds Max and VIZ is very strong within the visualisation community. This has ensured the development team behind the products are focused on the design visualisation community and their specific needs. An obvious example would be the inclusion of photometric (real world accurate) lighting solutions, such as Erco or Simes lights. These give the user the ability to specify the real world light to be included within the 3D rendered scene.

Architects, designers and more recently, end-clients, are very good at examining the world around them. This has meant that the quality of renders within VIZ and 3ds Max have recently become so realistic that it has now become incredibly hard even for specialists to tell they are computer generated renders and not photos. Many users are now even adding many of VIZ and 3ds Max's effects into animations, such as film grain. The advantages of using 3ds Max and VIZ to create and render the final animations have recently become very apparent. This has mainly been influenced by a genuine desire by architects to raise their quality. Clients are also now exposed to many areas of 3D in general, whether it's film cgi or computer game graphics.

With 3ds Max we have the ability to add 3D generated people into our scenes who can then interact with the development or the product. We no longer have to worry about key-framing (manually creating) animation. By simply loading on readily available motion capture data, we can easily create believable real-world motion - a technique initially used within the film industry, but which can now be seen in the architectural visualisation commu-

benefit we get the interoperability we spoke about earlier. It's worth noting that because users of ADT, AutoCAD and Revit have been exposed to greater rendering capabilities within their own applications, the transition into 3ds Max and VIZ is now made much smoother. They will find there are more controls for greater precision and realism in their advanced renderings.

Many users of ADT, Revit and AutoCAD simply don't have the time to learn how to model in VIZ or 3ds Max, but want to use the significant and unsurpassed rendering/animation tools that are incorporated into VIZ and 3ds Max. The model creation in 3ds Max and VIZ is funda-

mentally the same as CAD packages, although the workflow is slightly different in the naming of modifiers and tools. This is where the advantages of using a trusted Autodesk product such as 3ds Max or VIZ are apparent. VIZ and 3ds Max are both strong parts of the Autodesk family of AEC products, and it's this which has led to superb interoperability. In user terms, this means architects and designers no longer have to worry about learning a new product to create their complex models or photorealistic renderings. They can simply carry on using the software they are used to for modelling and then file link the geometry into 3ds Max or VIZ for raising the quality of the



Image courtesy of Spine3D (www.spine3d.com)



Image courtesy of Spine3D (www.spine3d.com)

tion. It's been suggested that VIZ is for architects and 3ds Max is for design visualisation specialists. Where does Autodesk position each product?

CR: Both Autodesk 3ds Max and VIZ are excellent tools for creating photorealistic stills animations, flybys and walk-throughs. Indeed both tools are used equally by architects, designers and visualisation specialists for this very purpose. Autodesk VIZ is the perfect tool for the artist or specialist who requires more control for their visualisation than is possible from their design package. 3ds Max contains all the tools and connectivity provided in Autodesk VIZ 2007 plus the tools to do far more involved, realistic and sophisticated visualisations. These features include:

- **Advanced Modelling** - Use Power Booleans to create quick concept models.
- **Advanced animation** - Create animated characters to populate scenes or crowds to mill around in large spaces, Create complex organic or mechanical animation with the IK system.
- **Particle Flow** - Create special effects like smoke, rain, fountains and dust.
- **Enhanced Combustion integration** - Paint in the 3ds Max interface using Combustion vector paint, Enhanced compositing with a larger number of render elements.
- **Cloth system** - Easily create dynamic boat sails, curtains, tarps, tents, etc.
- **Reactor Dynamics** - Build interactions between rigid and soft objects as well as ropes, cloth and water surfaces.
- **Hair** - Create dynamic grass and reeds that blow in the wind or realistic carpets.

>> nity. There are a huge amount of new features which are excellent for AEC users. For example, scene states, asset tracking, pro Booleans, radiosity improvements combined with enhancements to materials and advanced modelling features such as hair, fur and cloth. 3ds Max 8 and VIZ 2007 have become the best versions for architects to join at and fluidly begin to create accurate realism.

An area which we highly recommend examining in greater detail is the 3D DWF export function. This gives

users the ability to forward 3D models to clients using a free download programme. This is an excellent way of communicating design intent to users with no technical knowledge. We also have the ability to 'bake' in lighting and texturing information, so we have a truly interactive 3D model which non-technical end clients can explore.

Q **There's been a lot of confusion as to the roles that VIZ and 3ds Max play in design visualisa-**

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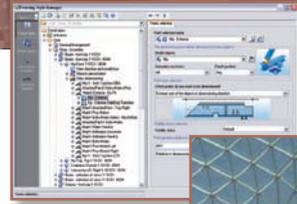
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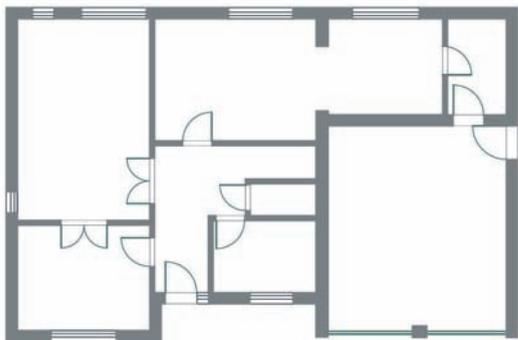
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Q What are the technical differences between VIZ and 3ds Max i.e. modelling, import, workflow, rendering, animation.

CR: The technology under-the-hood of VIZ is fundamentally the same as 3ds Max, as it's built on the same established platform. The User Interface is also similar so users can happily use both applications. However VIZ is the little brother of 3ds Max in terms of functionality.

The major differences are the ability to add extra realism and specialist animation effects in 3ds Max. For example, recently many architects or designers have been looking to computer games or films, and examining how they can use this same technology to capture their audiences. Two examples from clients are the use of 3D people and cinematic camera movement. These are two of the biggest changes in architectural animations. It's no longer acceptable to clients to have 'bill-boards' of people within their animations. Users want the ability to control the characters within their animations, by what they are doing and what they are wearing. This is where 3ds Max sets itself apart from VIZ. Users can use specialist tools with great ease.

With 3ds Max we are able to add motion-capture data (real world recording of movement) to 3D characters. The simple workflow is excellent in creating believable characters. Within 3ds Max we also have Particle flow, an animation tool for creating believable effects. Users have created rain falling through drain pipes, doors opening and causing objects to blow within scenes, and showers working - all adding to the believability of the final visuals or animations.

Q What are the plans for Maya, which was inherited from the purchase of Alias?

CR: Maya is an industry leading 3D animation and effects



package for the film and games, video, advertising and broadcast sectors, and will continue to play an active role in these markets.

Maya also plays a strong role as a visualisation solution for customers in the automotive, consumer products and advertising markets. These customers use Maya to create photorealistic images and animations of products and automobiles for design review as well as downstream marketing and advertising. Maya is a natural tool of choice in the automotive and consumer products sectors for design visualisation because of its connectivity with Autodesk AliasStudio (formerly Alias Studio) and other CAD packages. Like 3ds Max, Maya is also used extensively by the advertising world to create photo real images and animations for everything from television commer-

Image courtesy of Spine3D (www.spine3d.com)

cial to print ads and brochures. This is often referred to as 'Synthetic or Virtual Photography' and is a growing trend because it allows customers to reduce costs on expensive photo shoots and create images not possible with traditional photography.

Many AEC firms and boutique architectural visualisation companies are adding Maya to their pipeline to complement Autodesk VIZ and 3ds Max. Maya provides:

- Visualisation Solution for Macintosh customers.
- Excellent conceptual modelling tools (NURBS, Polys and SubDs).
- ToonShader for non photo real rendering.

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- Vector rendering for Flash export.
- A unique PaintEffects engine which enables artists to quickly paint 3D vegetation for landscaping details.
- Fluid dynamics engine for water effects.
- Adobe connectivity: Illustrator import. Export render layered to PSD files (great for final image compositing in PhotoShop).
- StudioTools connectivity.
- CAD data import (Pro/E & Solidworks).

Q We've heard that real time rendering is proving to be hugely popular in the DCC sector for film and games development. What exactly is real time rendering, what hardware do you require, and how important is this technology to design visualisation users?

CR: Real time rendering (RTR) has been around for about four years commercially within the design visualisation community, but only recently have we seen widespread advancements in its technology and its ease of use for us, as end users. As designers we're extremely lucky in that if there is technology within the games or film industries that we think will help us, we can implement that technology

to our own advantage. Many architectural clients are now utilising these techniques to help win pitches. For example, end users love the ability to interact with products and architectural scenes, and it's this that has been the major driving force of RTR. This interaction is the greatest benefit for design visualisations; it helps to remove the grey area from designs or 2D plans. RTR is very similar to computer games where users have complete freedom to explore 3D scenes and have a much clearer understanding than any animation or image would ever do for them.

With 3ds Max's established heritage in the Games market, we are able to push these RTR's using this same technology to create more detail and add believability with advanced techniques, such as Normal mapping and texture baking the material and lighting information onto the models.

Q There's also been a lot of talk about doing final renderings with GPUs (Graphics Processing Units) as opposed to CPUs (Central Processing Units). What are the advantages of rendering with a graphics card as opposed to a workstation processor, and how is this done in practice?

CR: GPU rendering remains a grey area for many users, but it's generally the technology that allows content to be visualised without the need to produce traditional final renderings before seeing an approximation of the texturing and lighting output. The main advantage for users is GPUs and the amount of RAM held on the graphics cards allow us to work with models in a much more responsive environment. For example, we can cache or load large model scenes into the RAM. This allows the user to zoom, pan and rotate around the geometry much faster than they could do without this technology. This brings tremendous time and cost saving advancements for everyone, as the designs can be visualised within the viewport in realtime. This is an important step in producing real-time cinematic renderings so we are able to work interactively. Many 3ds Max users already using GPUs and RAM on the graphics cards are welcoming these advancements. This technology helps to relieve the CPUs of the strain of viewport display and in turn boosts the computer's performance. A good graphics card is just as valuable as a good CPU or motherboard.

The GPU will alleviate the strain on CPU's for producing 3D content, and in turn provide a quicker machine, so we can create more detailed and complex realtime imagery. Texture mapping polygons have also been memory intensive and this technology will help to alleviate this burden on the CPUs. The newest graphics cards will even decode HD (high-definition) videos, again taking strain away from the CPUs. In short we are seeing greater performance in using GPUs in conjunction with CPUs.

Q How important is 64-bit Windows to design visualisation users and when can we expect to see 64-bit versions of 3ds Max and VIZ?

CR: 64 Bit technology is important to us as designers for many reasons. As technology currently stands we are limited by the Windows Operating System, which will access a maximum of 2GB of RAM on a standard computer, unless we use a switch in the boot ini file of the computer, (although only recommended for experienced users) we can then increase this to 3GB maximum. In real terms when we have other programmes installed and running on the machine, this addressable allocation drops. For example, if we're using 2GB of RAM, then it will drop to approx 1.5GB. This means for renderings, file loading and general usage of large-scale files, we're influenced by the amount of RAM we have in the machine. With 64-bit technology, we're able to use more RAM, and therefore have more raw power available to us. This is an area which is rapidly changing and remains very exciting for everyone involved, whether that's users or developers. 3ds Max and VIZ continue to be at the forefront of design visualisation. As technology progresses, so do users' expectations, and it's this that's helping Autodesk to develop new technology.

Chris Ruffo is Design Visualisation Industry Manager at Autodesk Media & Entertainment division

www.autodesk.co.uk

Prize Competition!

Win a copy of Essential CG lighting Techniques with 3ds Max, by Darren Brooker.

Lighting is the one thing that makes or breaks any CG environment, and this is particularly true in design visualisation. A new book, *Essential CG Lighting Techniques with 3ds Max*, provides a single volume that looks at both the technical and practical aspects of lighting in CG. It covers the concepts and theories behind the techniques and tricks that are essential in a production environment. The stunning colour illustrations throughout the book illustrate just what can be done, while the tutorials show you exactly how to do it.

Every ounce of theory is backed up with practical tutorials, using the free trial versions of 3ds Max and Combustion supplied on the companion DVD. The tutorials take you from the fundamentals of lighting, right through to advanced techniques with many new sections, including ones that cover radiosity techniques, rendering with mental ray, and compositing.

The author, Darren Brooker, is a 3D specialist at Autodesk Media and Entertainment and has worked for

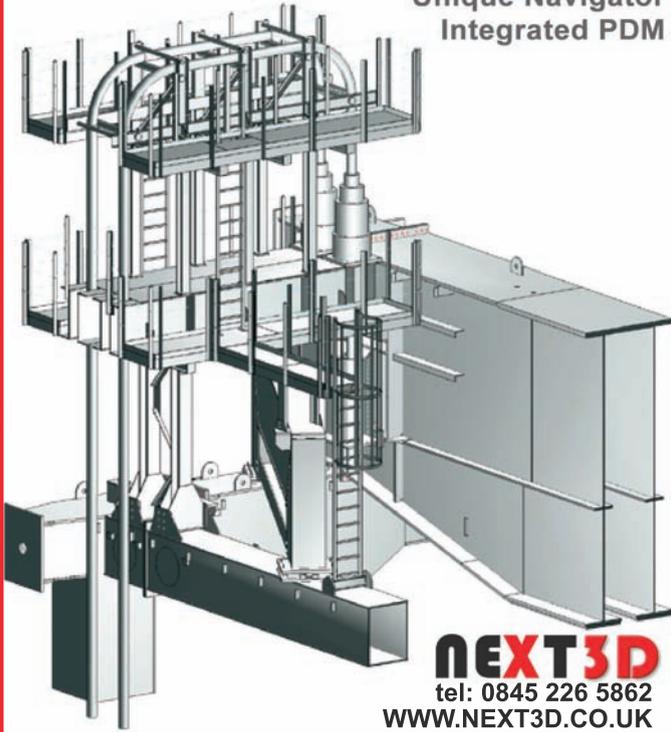
several top UK CG studios, including, Cosgrove Hall Digital, Pepper's Ghost and Red Vision, where he was part of a team that won a BAFTA for Best Visual Effects.

The generous guys at Focal Press have provided AEC Magazine with half a dozen copies of this excellent book to give away to six of our lucky readers. To be in with a chance of winning a copy simply email your details to cgcompetition@aecmag.com. The closing date of the competition is **28th July, 2006**.



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Revit Structure 3

After much anticipation, Autodesk has finally launched its new Structural Design tool, Revit Structure, into the UK market. But what is the target market, why has it been introduced at Version 3 and what happened to 1 & 2? CADline's Paul Woddy explains.

Paul Woddy

While we've been hearing a lot about Revit Structure over the past year, it was only officially launched in the UK last month. Versions 1 and 2 were tried out on the US market first in order to develop the functionality of the product without having to worry about localising everything. So Revit Structure 3 is effectively the first worldwide release and will be sold here in the UK together with AutoCAD 2007 as AutoCAD Revit Series - Structure.

Revit – or Autodesk Revit Building as it is now known – has contained a menu dedicated to structural modelling since the early days. So is Revit Structure any different?

Well yes and no. No, in that Revit Structure and Revit Building are developed as a common platform. Yes because it is different in terms of the interface and some of its capabilities which are tailored for structural engineers and technicians. Revit Structure has all the benefits of information-rich co-ordination and rule-based intelligence that we have started to take for granted with Revit, but with an engineering focus.

Many of the immediate visual differences can be explained as a change in the default template, view settings, and component libraries, but we have tools here that do not exist in the Building package – some of which would be very useful but let's leave that for another article! The main target market here is Structural Engineers and Technicians and many of the interface choices are based around that demographic.

Autodesk define the theoretical process of using Revit Structure in two ways;

Autonomy: The engineer will develop the structural elements of a building in Revit Structure as an anatomical model, add loads and tweak the analytical model before round-tripping through an analysis tool to clarify the section sizes etc. Back in Revit, building sections and fabrication details are compiled and prepared for publication.

Teamwork: The architect supplies the engineer with a model of the building, either substantially complete or as a work in progress. The engineer extracts the relevant information from the model, taking for example walls and associated openings, while effectively ignoring the content of the opening. Grids and levels are transposed and if required, Top of Steel levels replace Finished Floor Levels. The engineer then works his magic and adds extra support where needed. The above analysis and preparation of drawings is the same, and then the model is issued to the architect for information and review. They can then

Revit Structure integrates a physical model - for layout, coordination, and documentation - with an independently editable analytical model for design and analysis.

show the structural frame in relation to the architectural façade. If either party makes a change, then the copy monitor will highlight the alterations to the other team. Once we get the HVAC boys using the same system, we have a powerful building coordination tool.

Whilst the benefits of the latter option are obvious, in the short term, whilst the market share of Revit Building is relatively small, we must assume that Revit Structure can operate effectively on its own. Several producers of analysis software have developed links with Revit, including RoboBAT's Robot Millennium and Fastrak from CSC, which are both used extensively here in the UK. The decision by CSC is on the surface an odd one as they are effectively supporting a product in direct competition with their 3D+ software. When you dig deeper, however, it is a similar argument to the time-worn Architectural Desktop versus Revit discussion, which boils down to whether customers are in the market for SBIM (Single Building

Information Modelling) or not. Either way CSC wants to maintain the position of Fastrak which is the company's main focus.

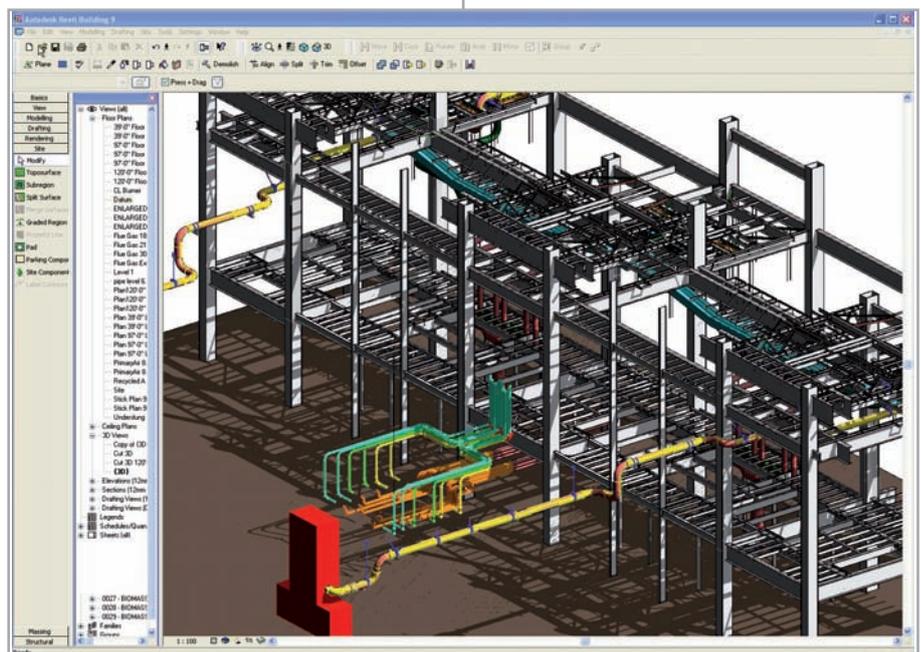
As the product and its associated links to analysis are still in their infancy, we will have to wait and see how they work effectively, but each analysis software house promises full two-way communication with the Revit model, replacing elements and maintaining a co-ordinated model. The model can be started in Revit as suggested by Autodesk, or it can originate in the likes of Fastrak before being moved across to Revit for model presentation and drawing production.

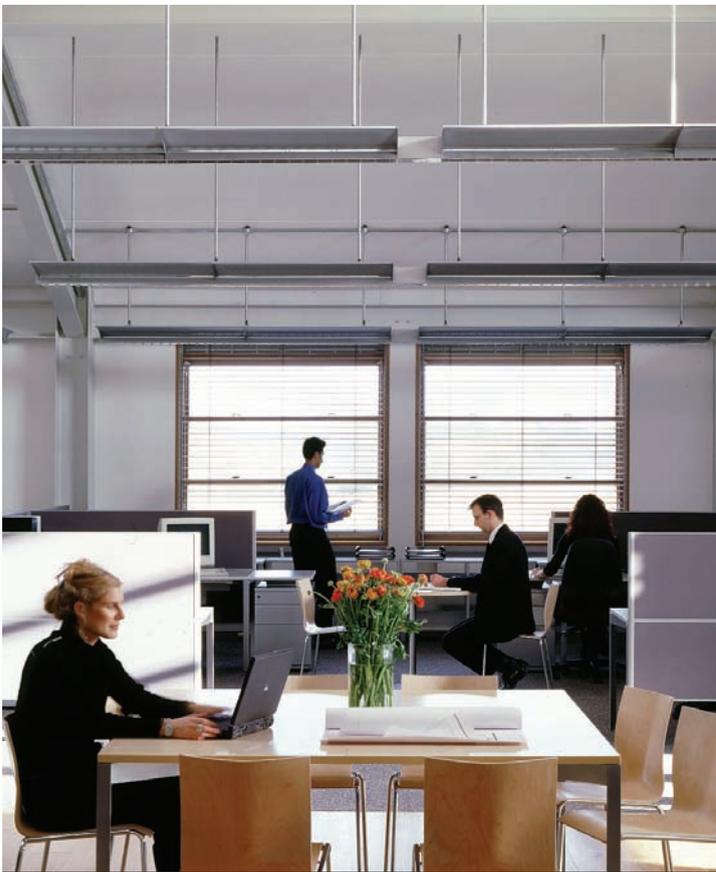
One thing that we can say from experience is that where engineers have opted for Revit, the reasons have not always been for the links to analysis but more fundamentally, co-ordination of information and communication of this information in various formats. 'A change made anywhere is a change made everywhere' is a concept that interests people just as well in engineering as it does in architecture.

When an engineer/architect partnership adopts Revit as its platform, the results are astounding, with unparalleled levels of communication between the disciplines and then on to the customer. This has major implications on the industry as a whole with closer ties and better understanding of the finished building. Something I think worth striving for.

www.cadline.co.uk

As the product and its associated links to analysis are still in their infancy, we will have to wait and see how they work effectively, but each analysis software house promises full two-way communication with the Revit model





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LatimerCAD DistToPlan

After carrying out a building survey, as-built plans are commonly re-created inside a CAD system. DistToPlan looks to streamline the process with the help of a handheld Leica Disto plus laser measurement device and a standard Tablet PC running AutoCAD.

Greg Corke

Product: DistToPlan **Supplier:** LatimerCAD **Price:** £795 **Website:** www.theolt.com

The creation of building plans on site is always going to be quicker with pen and paper, but even the most experienced surveyor may not spot errors until he's sat back at his desk. This is where DistToPlan from LatimerCAD look to streamline the process, by enabling surveyors, architectural technicians or even facilities managers to create a full set of as-built AutoCAD plans, before they've even left the site.

LatimerCAD has been developing a range of AutoCAD-based surveying tools for a number of years. The company's TheoLT solution provided surveyors with a set of easy-to-use tools to capture point data on building façades with a total station that feeds data directly into AutoCAD (or LT) on site. DistToPlan builds on this relationship between surveying device and CAD product but takes the ease of use factor to new levels. You don't necessarily have to be a trained building surveyor to use DistToPlan. All you need is an understanding of the surveying techniques, a point and click Disto plus laser distance meter, and a tablet PC or notebook running AutoCAD (or LT).

Building plan creation

DistToPlan is an ARX application that creates an environment inside AutoCAD to enable a Disto plus device to be used as a real time drawing tool for the creation of building plans. As measurements are taken, data is fed from the Disto plus directly to a notebook or tablet PC running AutoCAD via a wireless Bluetooth connection.

Each new room is first defined in DistToPlan's 'Room Manager' where all data relating to the room is organised according to layers and description. In DistToPlan there are two key ways to draw room plans. The simplest method is the 'rectangular room' where the user takes distance measurements for the length and width of a room, then measures the diagonal so DistToPlan can automatically check for errors and make adjustments as necessary. This is particularly important for old buildings where rooms are often not square.

For more complex rooms the Angle mode or 'Follow Wall' method enables the user to take a wall measurement, and then use the arrow keys on the Disto plus device to define their direction. Once a room is closed, DistToPlan calculates the area automatically and displays it in the Room Manager.

Features such as doors and windows can be added with ease using dedicated tools controlled via dialogue boxes. For example, for the creation of doors the user simply defines the distance along a wall, the door width and hinge position and DistToPlan will automatically cut

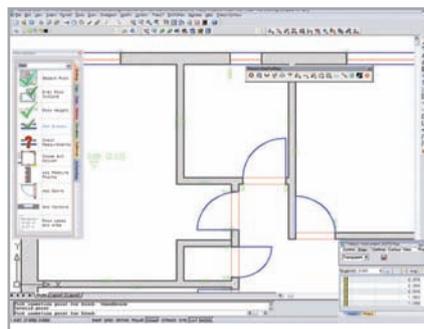
back the wall and place the door complete with swing. For multiple doors and windows users can quickly measure node points along a wall and drop in doors and windows as required. Other features such as bay windows and chimney breasts can also be added with ease.

Adjusting for errors: Any surveying process is always going to be subject to errors, and DistToPlan excels in its ability to adjust for these. In addition to diagonal measurements, which can be used to check and adjust for errors in rectangular rooms, DistToPlan includes a tool which closes and distributes errors that arise when defining irregular rooms wall by wall. For these adjustments, tolerances can be defined and DistToPlan will alert the user if it falls outside, indicating a measurement error. Individual distances can then be re-measured and revised as necessary using dedicated tools. If there is a high degree of confidence that certain lines and points are positioned correctly, the user can constrain the room geometry, with any adjustments working around these fixed positions.

In addition to any adjusted data, DistToPlan automatically stores all original measurement information on a separate AutoCAD layer, so there is a complete audit trail of the plan production process.

Aligning rooms: Buildings will typically be surveyed room by room, but to fully define a building plan, individual rooms need to be aligned. For this, users simply define a reference point, wall offset and a cutback distance which will enable DistToPlan to adjust for any errors. Adjacent walls can also be aligned by door and window openings with DistToPlan automatically adjusting for errors around these fixed points.

The Plan Builder palette (located on left of screen) guides users through the plan building process to ensure that no critical information is omitted from the survey.

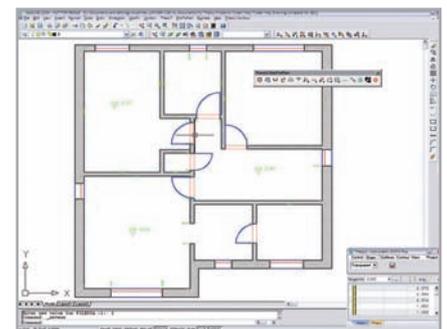
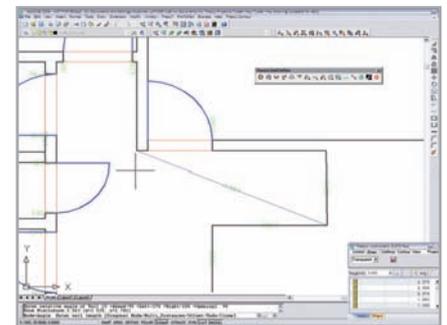


Plan builder: Distoplan includes an excellent Plan Builder utility that enables a company to build up a standard workflow for its staff. This not only aids those less experienced in the art of surveying, but also offers non-AutoCAD users a helping hand to step through the plan building process and avoid missing any tasks. Each individual task is accessed through the dedicated Plan Builder palette with DistToPlan automatically placing a tick by each icon as it is completed. Users are not able to move onto the next task until the previous task is finished.

Beyond plan creation: In addition to the extensive plan creation tools, those running DistToPlan on a Tablet PC can utilise a number of additional data types to enrich the survey. Handwritten notes can be taken with the Tablet PC's Journal, voice notes can be added with the built in microphone and users can take pictures with camera phones and link back to the Tablet PC via bluetooth. All of these additional data types can then be hyperlinked from within the AutoCAD drawing to create a single reference for all survey related data.

Conclusion

Over the past few years Leica's Disto plus has established a strong footing in the building surveying sector. What DistToPlan does is provide a simple way to get Disto plus distance measurements directly into AutoCAD for the production of building plans. However, DistToPlan does much more for AutoCAD than just replace a mouse with a laser measurement device. It enables surveyors, architects or facilities managers to clearly see and correct errors as they occur whilst giving them the confidence that all the data collected during a survey is both accurate and complete. And while the use of DistToPlan will probably mean more time on site, this will be more than offset by a minimum amount of re-work back at the office, the elimination of site re-visits, and most importantly, the subsequent acceleration of AutoCAD plan production.



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Plan preparation with ADT

Rosser Morris, a small Bedfordshire-based practice, has found Architectural Desktop to be the perfect tool for designing and preparing plans and particulars for local authority Planning and Building Regulation approval.

It's easy to presume that only larger organisations need to take advantage of the latest technology. After all, don't smaller firms rely on a more personal approach to win their business?

In reality, owner-operators are often very willing to try out new ways of working. They are only too aware of the need to balance customer service with the bottom line – and often only a clever software solution can help them do this.

Rosser Morris, a small practice designing and preparing plans and particulars for local authority Planning and Building Regulation approval, is a case in point. It has found that using Autodesk Architectural Desktop (ADT) has actually helped improve its relationship with clients and has even become a selling point for its services. At the same time, ADT is also helping increase productivity, ensuring that fees can remain competitive.

Ben Morris and Graham Rosser have been friends ever since they went to school together. Although they initially both embarked on separate career paths, they recognised a need in the domestic market for consultancy on design and planning and consequently pooled their experience.

When they formed the consultancy neither had very much knowledge of CAD. Rosser, a chartered surveyor, had been a building inspector and Morris' background was in manufacturing. However, while he was doing a post-graduate diploma in surveying, Morris was introduced to ADT by a lecturer.

"I had never really used AutoCAD properly, but I found ADT very intuitive and easy to pick up," he says. He was sold on the software – and on using it as a tool for 3D design to help give the newly-formed Rosser Morris an edge over its competitors.

Now, with the help of training from Autodesk Authorised Training Centre, CABS Premier Training, ADT forms the basis of both its design process – and its customer service. "The 3D element is really what gives us the edge over everybody else," says Morris.

Now, once one of the Rosser Morris team has visited a client's property, taken measurements and discussed what can and can't be done under current planning policy, they prepare the plans using ADT. The client is then invited to sit down with them for an hour or so and discuss every aspect of the design.

"We can show them a 3D model of our proposed design and rotate it so they can view it from all angles. This really blows them away. Many people can't relate to 2D plans, but this way they can really see what they will be getting.

"They can then suggest changes – for example, they may suddenly decide they want a change to the downstairs cloakroom, or it could be something really simple like needing a window to be little bit higher or the back

door on an adjacent wall.

"We can then manipulate the model in front of the client so that we get it just right there and then they can see what the revised design will look like. With a right click all the elevations are updated to reflect this change – it happens in less time than it takes to talk about it.

"A lot of them comment that they or others have had plans done in the past, but they have never before had a say in the conceptual process. And you can see why – without ADT we would have to spend a good few hours adjusting the drawing and everything connected with it.

A combination of Rosser Morris' experience with local authorities and ADT means that the team can help secure the planning permissions needed without any fuss.

"We were one of the first firms in the area to make online submissions through the planning portal on the building regulations side of things. We've worked closely with both planning departments and building control in order to get the style of our plans correct for them – so that we supply all the right information," explains Morris.

"Using ADT also helps smooth the planning process. For example, on some occasions we've submitted an isometric view showing volumes to satisfy permitted development requirements.

"As added value to our clients we are able to make any changes requested by the planning authorities free of

charge. This really helps sell our service. Without ADT the changes could easily take around half a day of our time and so we wouldn't be able to offer this, but with ADT we can do it very quickly and easily."

It is clear that ADT is a real lynchpin to the service Rosser Morris offers. But does it also earn its keep from a business efficiency point of view?

"Yes, absolutely," confirms Morris. "We use content especially developed for the UK and now we've got certain styles set up and have a close understanding as to how these work, I reckon we can put together a scheme much quicker than anyone can draw it.

"We also find the level of detail very good and I have never seen drawings with the amount of detail we provide, I must admit. We work closely with our structural engineer and he finds we can give him all he needs to do the steelwork, for example."

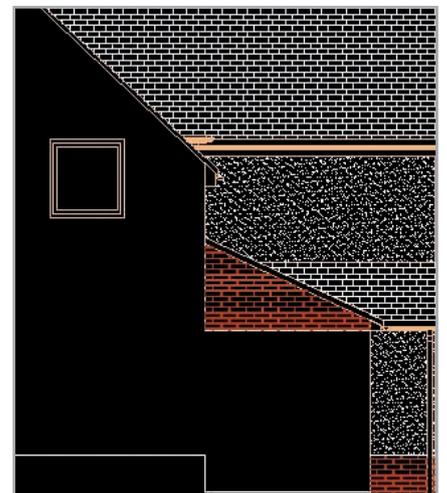
Mike Hall of Autodesk Authorised Reseller Computer Aided Business Systems Limited (CABS) agrees: "Rosser Morris is typical of a certain type of open-minded and determined small business that can really get a lot out of using this software. To them it's not just technology, but an integral part of their offering and they obviously enjoy using it and maximising what it can do – to the benefit of their clients."

Morris admits that sometimes they even have the challenge of sorting out other people's miscalculations. "There's a definite shortage of practical knowledge when it comes to small scale domestic projects – and sometimes architects have designed structures that actually can't be built," he says.

"Our prices are keen and, as a small business, we can't afford to make one mistake. But using ADT we know we are providing designs that will work in the real world – and that in the end means it has really proved its worth."

www.autodesk.co.uk/adt
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We can show them a 3D model of our proposed design and rotate it so they can view it from all angles. This really blows them away. Many people can't relate to 2D plans, but this way they can really see what they will be getting.



Getting there - maps and LBS

James Cutler

The AEC sector needs to be au fait with OS MasterMap Integrated Transport Network (ITN) Layer in order to meet the needs of customers and add value to already rich propositions, says eMapSite's James Cutler.

Location based services (LBS) were touted as both the "killer app" for 3G telephony and the saviour of the telecoms companies who spent so much on their 3G licenses. That these promises have been slow to come to fruition is not in doubt and we will not explore the reasons here. However, it remains a "given" that place, where you're at, where you might like to get to and how, lie at the heart of a huge raft of services, some ubiquitous, others virtually invisible and it is the role mapping plays in these and how these impact our sector that do bear closer examination.

What's changed?

Traditionally, roads really were lines on maps or in road atlases and, except at the very largest scales, transport networks have generally benefited from enhanced cartographic representation in these, historically printed, media. This makes maps easier to read and for the user to plan their route, navigate along the way and deviate where necessary. Roads, or at least road alignments don't change very much and new roads, such as bypasses or the M6 Toll Road, are much less frequent than is popularly imagined, so the printed page has sufficed for 100 years.

However, with hundreds of millions of holes being

dug in our roads every year and 30 million vehicles moving around, the reality is that as a nation we are moving slower than ever while at the same time the pace of life and the pressures of work demand more, faster. As congestion avoidance has become a business imperative the parallel falling cost of consumer tools, such as GPS and PDAs, and the development of a new generation of in-car navigation tools has seen the whole area of routing and navigation move rapidly from a "nice to have" in luxury models to standard sales rep kit.

There remain four major publishers of road atlases (OS, AA, Phillips, Bartholomews) and a raft of smaller boutique publishers catering for special sectors, from major road haulier to off road cyclist. As well as motoring organisations, into this space have come Navteq, TeleAtlas and andmapping, touting a new generation of digital mapping focused more or less entirely on LBS, routing and navigation. Alongside Google, Yahoo!Maps et al, much of whose mapping content comes from one of these three sources, mapping – and especially representation of road networks therein – is more woven into the fabric of everyday existence and decision making than ever before whilst national mapping agencies have, to some extent, been sidelined.

And the Ordnance Survey?

Ordnance Survey's flagship OS MasterMap Topography Layer contains what might be termed a "traditional" road theme, representing, at scale, the physical actuality of all roads, tracks and paths in Great Britain. For convenience this theme is provided as both lines (for road edges, curtilage and so on) as well as polygons for individual road segments. OS MasterMap does not include any information relating roads to addresses or other points of information or to the network structure for navigation, although the building block of OS MasterMap, the TOID (Topographic Identifier), facilitates integration with such data sources (and much more).

OS used to offer OSCAR (Ordnance Survey Centre Alignment of Roads) Traffic Manager, providing a digital representation of the road network much used by transport planners, publishers and local authorities in particular. However, although OSCAR did contain addressing, it did not contain any road restriction information (RRI), now an essential component of road/network mapping, and has been withdrawn (the final release/update was April 2006). One of the reasons for this withdrawal has been the latest release of OS MasterMap Integrated Transport Network (ITN) Layer. Originally released in 2003, not long after OS MasterMap Topography in response to growing demand from mobile network operators, solution providers and software developers, ITN is designed to support many different types of applications, including telematics (both business to business and business to consumer), location-based services, asset management and publishing. ITN contains two themes, Roads Network and Road Restriction Information:

The Roads Network is ideal for sophisticated data analysis functions, such as real-time routing, down to entry-level mapping for visual functions.

Road Routing Information (RRI) – has comprehensive restriction and advisory route information, which may influence a driver's choice of route. Included are:

- Mini roundabouts
- Bridge heights
- Traffic calming
- Vehicle restrictions
- One-way roads
- Vehicular type access and time restrictions

ITN's content does, to an extent, parallel content in other products such as Navteq's NavStreets and TeleAtlas' street mapping, a factor that has contributed to the emergence of a multitude of licensing models for these products depending on how they are being deployed. Most of these more sophisticated uses derive from web and in-car applications where the RRI is a critical component in the value add proposition rather than from conventional CAD or GIS use.

Road Maps and what you can do with them... (briefly)

This does not detract from the utility of ITN particularly for transport planning applications including re-routing, modelling, diversion planning, road maintenance and emergency response. For example, a nationally consistent naming convention based on TOIDs serves to eliminate





trans-boundary naming differences evident in neighbouring NLPs and NSGs. Further, adoption of the polygonal element of ITN can drive efficiency savings through the elimination of local surveying in roadway measurement, through procurement planning and through resource allocation.

Also, ITN has been central to the preparation of Integrated Risk Management Plans and Fire Service Emergency Cover plans by Fire Authorities to estimate emergency response times, lives at risk and property loss as well as to evaluate the costs and benefits of different resource allocation and positioning strategies.

Harnessing ITN for the Enterprise....

AEC enterprises are increasingly seeing themselves (and being seen in turn) as multi-disciplinary organisations bringing together the disciplines required by the client to build best of breed solutions and, away from "hard" engineering, offer all manner of services as part of the overall package. In this last arena, information technology is, despite its ubiquity and seeming ease of use, one area where outsourcing and hosting have become the norm as organisations small and large look to reduce risk while leveraging existing tools and technologies from the relevant specialist sources. As discussed in an earlier article the way forward is that specialised elements of such solutions necessitate the integration of external non-branded services, often into a browser interface.

Given the sophistication of ITN (it is a complex data-

base based on GML) it is no surprise that hosted web services are the preferred solution for systems integrators and developers alike when looking to add routing, navigation and location-based services to third-party applications. Transport Direct (www.transportdirect.info) is one example where DfT and OS themselves worked together on a portal that gives instant access to comprehensive journey information by both public and private transport across Great Britain. It includes a journey planner, maps, live travel information and onward links to coach and rail fares and ticketing services from different travel retailers.

Route planning from motoring organisations, the short-lived pocketroutes service, to say nothing of MultiMap's and Streetmap's "inline" services and the array of services from their foreign competitors that have made mapping ubiquitous are but the visible exemplars of such an approach. Invisible to most are the huge raft of Intranet and Extranet applications where location, routing and related information are embedded as a (small) part of a wider application, from asset management (road and track-side inventory, estate management, grounds maintenance etc) to event reporting (accident, incident, resource monitoring) and environmental monitoring.

The other major area where road network information is absolutely critical is logistics. In areas such as routing, navigation, geofencing, exceptional load planning, hazard avoidance, risk reduction, load insurance profiling and last mile delivery both road network and road restriction information play a central role, be it for route optimisation,

delivery scheduling, fuel efficiencies, pollution reduction, driver break planning or monitoring and evaluation of route records. The proliferation of home deliveries, specialised cargoes, high value goods, online ordering, large distribution centres and so on has brought incredible pressures on the transportation element of the supply chain at the same time as transportation costs continue to rise inexorably. The tools at the disposal of load planners, dispatchers and their colleagues provide a variety of mechanisms for driving efficiencies and managing costs while hopefully improving delivery forecasting accuracy. Ocado is only able to offer its one hour delivery window through dint of investment in these areas – tremendous savings to the economy would be derived from universal adoption of these tools through reduced lost work days waiting at home and wasted journeys!

As competition increases the demand for enhanced services to acquire or maintain competitive advantage will increase the demand for outsourced services on the addition of this functionality to existing solutions. Organisations in the AEC sector that understand these opportunities and work with these clients will be well positioned to benefit.

Emergent technologies such as low power wireless sensor networks offering so-called pervasive, immersive or palpable "information environments" in which assets and resources interact with each other during a process, event or lifecycle as well as communicate with some form of command or oversight protocol system. Such solutions are far from far-fetched and will require at their heart an intelligent geoinformation infrastructure in which road and transport networks will be a central, vital layer.

In summary, the AEC sector needs to be au fait with OS MasterMap ITN and competing products and with their application in order to meet the needs of customers and add value to already rich propositions (applied and advanced transport planning capabilities). So, when a local authority client seeks a shortest routes to schools solution or another client asks you to provide an on-demand service for delivery drivers or you need to set up remote asset management systems, you can deliver - even in reality you are using a variety of internal and external skillsets and tools. After all we want to keep our customers, and keep them happy!

This article was written by James Cutler, CEO at eMapSite, a platinum partner of Ordnance Survey and online mapping service to professional users

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On the right track

Leading rail network engineering consultancy Holland Railconsult generates up to two million technical drawings and specifications every year. The company enhanced its file sharing and archiving processes with Acrobat Professional and PDF.

Holland Railconsult is an engineering consultancy providing capacity, safety and integration solutions to some of the world's busiest rail networks. Up to two million technical drawings and specifications are generated across the company every year from hundreds of different CAD, engineering and office applications. These documents need to be shared with clients who often don't have access to the applications they were created in. Archiving the documents effectively also presents a challenge as software upgrades can make re-reading archived files problematic. Holland Railconsult needed an application that would make file sharing easy and would provide backwards compatibility into the distant future.

Holland Railconsult's largest client, ProRail, had introduced PDF as a common standard for the storage of graphical CAD and text documents. Holland Railconsult had been using PDF on a small scale but this new client requirement generated the impetus to standardise on the format across the organisation. It was essential that the accuracy of the PDF produced was as good as that of the original CAD drawing: "We wanted to use software that would guarantee the creation of problem-free PDFs – no problems with PDFs that were created and no problems with the software that created them. For that reason we chose Adobe Acrobat Professional," explained René Dorleijn, Team Leader, Engineering Applications, Business Department, Holland Railconsult.

Back to the future

It was essential that Holland Railconsult partnered with a company that would be able to support its document archiving requirements far into the future: "Business continuity is important for us. We needed to be able to read documents ten to 20 years into the future and we wanted a company with an ongoing programme of product development," Dorleijn continued.

Acrobat 7.0 Professional is now installed company-wide at Holland Railconsult and is available to all users: "We consider Acrobat to be a fundamental extension of the operating system," emphasised Peter Dubbelman, IT Consultant, IT Department, Holland Railconsult.

Holland Railconsult has achieved all of its objectives since the roll-out of Acrobat. Documents from many different applications can be delivered to the customer in a format that can be universally read using the free Acrobat Reader. Both text and graphical documents can be consolidated into a single Acrobat document, improving presentation of client reports and making them easier to access and distribute. Documents can be commented on using Acrobat Reader and returned via email, which has

increased customer satisfaction and reduced feedback times, all of which have enabled better communication and understanding and speeded project completion timescales.

Acrobat documents are backwards-compatible, meaning that even a document created using an early version of Acrobat can be opened with the newest version of Acrobat Reader. This is important for Holland Railconsult as it ensures that statutory obligations concerning archiving documents are met. Technical drawings can still be referred to in ten or 20 years time, and the longevity of the document is ensured.

Across the enterprise

Not only is Acrobat standard in the IT and Engineering divisions of the company, it is a universally accepted medium for document interchange, adopted in Marketing, Customer Service, Operations, Legal and HR. The ability of Acrobat to integrate seamlessly with existing applications is a key benefit for Holland Railconsult. Applications ranging from word processors, spreadsheets and CAD tools through to bespoke in-house packages including the Peoplesoft HR and Baan Financials systems all produce PDFs providing consistency and standardisation across the entire organisation. All this has meant a significant stream-

lining of Holland Railconsult's business processes and the use of Adobe Acrobat is a daily integral part of the company's operations, meaning significant efficiency gains across the board and enhanced internal and external communications.

Having successfully and effectively integrated Acrobat into its business as a document distribution and archiving medium, Holland Railconsult is keen to use some of the more advanced functionality available in version 7.0. To further enhance the archiving functionality, Holland Railconsult is investigating scanning incoming paper-based documents to PDF for storage and archive, to complete the record set of archived PDF data. Add to this the ability to archive emails as PDFs – again a feature that is available in Acrobat 7.0 – and Holland Railconsult will have created an end-to-end document management process that captures all project knowledge and is built on the firm foundation of Adobe Acrobat.

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DirectX versus OpenGL

Robert Jamieson

Later this year Microsoft will be launching Windows Vista, its long awaited next generation operating system. With Vista actively promoting DirectX, Robert Jamieson asks what is the future of OpenGL, the 3D API used by most CAD applications?

Microsoft Vista will support ICDs (installable client driver) from vendors like ATI and Nvidia but Microsoft's new toy is favouring DirectX, and several CAD vendors have already switched to DirectX. However, OpenGL is still used by many current CAD applications, so what is the future support going to be like on this 3D OS?

I think a history lesson on the 3D API standards is needed to get a clear understanding of some of the issues. The OpenGL API was developed by SGI as a way of giving developers access at a low level with a high degree of control to generate real time rendering. It can be used for precise CAD type models or covered

performance in 3D was attained all the "mid range" solid modeling software applications (SolidWorks, Mechanical Desktop – AutoCAD etc) had a user-friendly platform to promote their wares on. Autodesk was given an award by Microsoft for helping to make Windows NT a success, for example.

While Microsoft was gaining some success on its professional platform, the humble Windows 3.1, then Windows 95, needed a boost into 3D to get people away from MSDOS. They started with WinG API but after purchasing RenderMorphics and exposing the API, DirectX emerged. This has become a dominant API in the games world but in the beginning the games

WHQL tests are good but they test against standard Windows functions and some Microsoft software but not against your CAD application to see if it draws lines correctly on the screen!

in textures and used in games so it's classed as a general purpose API. SGI started this development with IRIS GL (GL referring to graphics language). This was proprietary to SGI hardware and not an open standard. SGI wanted to introduce more people to their available skills and hardware and developed OpenGL as a portable API for "lower end" hardware with the ability to upgrade to SGI's exotic stuff later. An "Architecture Review Board" was established with then key players like DEC and IBM to maintain standards. This has been passed on to new members now, but OpenGL spent many years with the same standards and some people stating it had stagnated.

The move to Windows

In 1992 Microsoft announced Windows NT with a 32-bit API to compete with Unix in the professional space. OpenGL was eventually ported to Windows NT version 3.5 two years later. Microsoft's software implementation had its problems with performance not being as good as expected and taking a lot of resources. A lot of IT managers would run 3D OpenGL screen savers which would take so much power it would slow the servers down, and Microsoft sent out a document not recommending it to be used. Version 1.1 of OpenGL in NT4 and Windows 95 was a lot better. This opened the door to graphics card manufactures to implement ICDs and therefore improve the performance dramatically. Once

manufacturers were getting better performance with their own specialised 3D engines. As support for DirectX grew from the hardware manufacturers, the software developers followed the DirectX route as it became easier to do this than write their own 3D engines. Today there are two main hardware competitors in the DirectX (and OpenGL) space - ATI and Nvidia. Other players are around but there is a massive learning curve to cap the performance of these two.

DirectX and the future

Microsoft controls DirectX, and with the demise of SGI (it's in Chapter 11) OpenGL's future is left to the big warring hardware players to support it. On the Linux platform OpenGL is a popular 3D standard but in the

What is an ICD?

Legacy ICDs (Installable Client Drivers) are used with Windows XP today. In Windows Vista they will likely disable the DWM (Desktop Window Manager) when loaded to try to talk to the hardware directly. This will probably remove the Aero interface. Windows Vista ICDs will go through another layer that is compatible with Aero interface and will be composed on the fly with the DWM.

numbers game for units Microsoft rules. Of course, OpenGL's open nature is not something we normally associate with Microsoft. Windows Vista implements DirectX 10 for games and applications and requires full DirectX 9 support to get the "full" Aero interface of the OS. Developers are going to need to code for this and if they use OpenGL today either port their software to DirectX or use one of the ICDs from ATI or Nvidia to run on Vista. Microsoft states that current Windows ICDs will work today, but they are not allowed to talk directly to the hardware and have to go through another layer.

CAD on DirectX

Bentley and Autodesk have already provided solutions on DirectX. What is quite interesting is their view to supporting these platforms. In Autodesk's Inventor 11 the OpenGL driver is faster than the current DirectX driver, but the view from the support site says that the performance will improve on the next release. One of the vendors stated that the reason they went this way was because of WHQL testing. This is the Microsoft hardware labs performing tests on drivers before they are released, and increases the stability of drivers. The point they were making was that, if Microsoft was testing them, they didn't need to. This is quite interesting as it is quite clear that WHQL tests are good but they test against standard Windows functions and some Microsoft software but not against your CAD application to see if it draws lines correctly on the screen! If the CAD support teams are hoping Microsoft is going to do the work for them it's going to be interesting! DirectX development moves at a fast pace. With all the new stuff coming through DX10 etc I'm not sure how consistent it will be.

WHQL certification

Microsoft is closing holes in driver support now to be ready for Vista and I fell into one recently. Doing some updates to my mother in law's PC, I unplugged a working scanner. Some Windows updates were applied and when I was finished I plugged it back in. Windows complained that the driver was not WHQL approved and would not let it be installed. There was no listed Microsoft update I could uninstall, and the scanner manufacture stated that it did not do WHQL drivers as it cost money to get them tested. It is a large manufacturer as well! Now it looks as if I'm buying a new scanner as a Christmas present for the mother in law now. I know other similar updates are being applied to XP in preparation for Vista as a lot of drivers will be moved over to the new OS.

It looks as if big things are happening whether we like it or not. Just make sure that any hardware purchases you make are from good manufacturers who will support you in the future or you could get into more trouble than me with the mother in law because she can't scan her photos in.

Robert Jamieson works for workstation graphics specialist, ATI.

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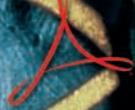
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