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Chapter 1 : Technical Illustration: Techniques and Applications | Technical www.nxgvision.com

Covers traditional manual methods and information on how these constructions relate to the latest CAD methods. The text also discusses an array of the most common tools and their uses, and reflects the state of technical illustration today.

Precision Design to the exact specifications of visually detailed assembly instructions, complex user manuals and multi-faceted documentation using projected drawing, illustration and boundary tools. Employ the power of dedicated design features to create and deliver the accuracy required for any type of technical illustration project. Isometric drawing tools Create isometric or other parallel projected technical illustrations for assembly and maintenance instructions by dynamically drawing on a projected plane. Project your existing planar objects to a desired plane instead of manually calculating the skew angle and rotation. The inserted 3D model is accessible as an editable and interactive 3D element inside the illustration that can be viewed in high-resolution preview and overlaid with other graphical elements. The translation results can then be imported into the existing document to create a new file for the specific language. With illustrations instantly available in multiple languages, companies can satisfy their global business needs. Streamline the technical illustration process by accessing early 3D designs as a source file. Once the designs are updated, you can use an automated process, Auto Detection and Update, to implement the design changes engineering has applied to the original 3D source file. Plus, you can publish animated 3D visualizations as a 3D PDF or Lattice3D file format for instant sharing and publishing via online and mobile. Redesigned customizable user interface Match your desktop environment to the way you work best. Enjoy flexible desktop color scheme options, alter the color of the area surrounding the drawing page, and even customize the color of your window borders. Design tools Improve your technical communication capabilities with a large collection of powerful and dedicated illustration tools. First, explore the many possibilities with objects, such as the hide and display feature, or the ability to split vector objects, text and bitmaps. Precise illustration tools Add greater levels of detail to your technical illustrations with projected shape tools, including Thread, Well, Cylinder and Prism tools. Quickly and easily draw thread and well shapes in projected space for the creation of bolts, nuts and more. Precision layout and drawing tools Capture your intended drawing shape with exactness using the Outline Position options that recognize line width measurements for object dimensions. Use the Alignment Guides so all elements of your technical illustration are intuitively placed in their intended positions with precision. Object data items can be edited so that shapes can be manually edited as hotspots for WebCGM output. You can then create symbol libraries that can be accessed and used across projects. Reuse the style definitions that you create once and apply to the individual components in the custom symbols. Powerful design and technology with CorelDRAW Enhance your illustrations and marketing communications with the versatile creative graphics power of CorelDRAW , the intuitive, world-renowned vector illustration and page layout application for single-sourced graphic design. It essentially transforms the creativity of free form sketching into precise vector curves directly on a pen-enabled device. Reach for the Healing Clone tool to discreetly remove unwanted spots and imperfections from any image. High-DPI display and multi-monitor support Author your technical communication projects on high-definition monitors, including Ultra HD. With the improvements to multi-monitor support, the UI elements can be scaled up to a usable size while retaining the sharpness of the icons. Plus, with an updated interface and support for 5K monitors, you can also edit photos at their native resolution and see the subtlest details of any image. With an RTS-compatible pen tablet or device, you can capture important details on the fly, and retain full control of your line drawing tools and brushstrokes. Maximize the size of your drawing window with a new Touch workspace. Save time and energy by panning and zooming in a single gesture, and display only the commands and tools you use most often. Native bit and multi-core support Get your designs ready fast with native bit support and multi-core processing power in this graphic design program. Time-saving LiveSketch tool Transform the creativity of

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free form sketching into precise vector curves directly on a pen-enabled device. Using the innovative LiveSketch tool, your strokes are adjusted and combined to existing vector curves, allowing you to sketch, adjust and design on the fly. With the enhanced automation interface, developers can create utilities and macros that can interact with the drawing page. Using the new classes and methods, you can now create even more powerful utilities and macros to enhance the applications in CorelDRAW Technical Suite.

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Chapter 2 : Technical drawing - Wikipedia

The first book, Technical Illustration - Techniques and Applications by John A. Dennison & Charles D. Johnson, is a comprehensive course on technical illustration. It is written in a textbook format complete with chapter review questions, drawing problems, and a thorough glossary.

Productive 3D models and visualization Add context to your technical projects by using 3D views and models in your technical illustrations. Compatibility with the latest file formats Leverage all the power you need with full support for technical publication standards, latest version. DWG CAD file import, and over other data file formats to publish, share and output important technical documents. Precise technical illustration with Corel DESIGNER Get more accuracy with this vector-based graphics application that provides many relevant functions of graphic design along with the tools needed to create detailed engineering drawings. Enjoy a seamless design experience with a tailor-made interface and unmatched customization capabilities to increase work efficiencies and output deliverables. With professional-level tools, you can ensure the photos used in your visual communications are precise and legible at any resolution. Corel Font Manager Organize and manage your font library with the intuitive Corel Font Manager and use your frequently used fonts without installing them, and work faster with fonts using the network storage feature. Quickly find and install fonts for your technical illustration projects, organize fonts for easy access, or manage unneeded fonts. In addition, you can browse and search online and local fonts, preview font glyph sets, create font collections, and more. With the enhanced automation interface, developers can create utilities and macros that can interact with the drawing page. Using the new classes and methods, you can now create even more powerful utilities and macros to enhance the applications in CorelDRAW Technical Suite. Precise New and Enhanced! Design tools Achieve unsurpassed productivity with new high-caliber features and functionality to accelerate workflow efficiency. Advance your technical communication capabilities with a collection of dedicated illustration tools that ensure accuracy and precision for isometric drawing, detailed callouts and expansive dimensioning capabilities. Isometric drawing tools Create isometric or other parallel projected technical illustrations for assembly and maintenance instructions by dynamically drawing on a projected plane. Project your existing planar objects to a desired plane instead of manually calculating the skew angle and rotation. Align and distribute nodes Align and distribute nodes using the bounding box of a selection, the page edge or center, the closest grid line, or a specified point. Distributing nodes is just as easy, adding equal spacing between them horizontally or vertically. Advanced dimension tools Eliminate the need to draw and project dimension objects in multiple steps thanks to the advanced dimension tools. Display precise measurement values in building plans and more, including radial and diameter dimensioning. Plus, with projected dimension options, your projected drawings can be quickly documented with precise and dynamic dimension lines and text. Precise illustration tools Add greater levels of detail to your technical illustrations with projected shape tools, including Thread, Well, Cylinder and Prism tools. Quickly and easily draw thread and well shapes in projected space for the creation of bolts, nuts and more. Precision layout and drawing tools Capture your intended drawing shape with exactness using the Outline Position options that recognize line width measurements for object dimensions. Use Dynamic Guides so all elements of your technical illustration are intuitively placed in their intended positions with precision. Speed up the creation of all kinds of technical graphics incl. Streamlined callout creation Track essential design details and key information with dynamic callout tools. Sticky callouts will connect or "stick" to source objects as they are moved around or modified. You can also link callout text to source shape metadata. Callouts based on object metadata are dynamic, helping you efficiently and consistently implement updates and changes. Drawing scale control Create your illustrations and diagrams in accurate scale with the drawing scale control. View the active drawing scale, switch to another preset or set a custom scale at any time. Productive Achieve unsurpassed productivity with new high-caliber features to increase workflow efficiency. Next, send the source language text for translation and

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receive translations to create localized documents literally with one click. Object data items can be edited so that shapes can be manually edited as hotspots for WebCGM output. You can then create symbol libraries that can be accessed and used across projects. Reuse the style definitions that you create once and apply to the individual components in the custom symbols. Equation Editor Manage mathematical equations as editable elements within technical illustrations using the integrated Equation Editor. Mathematical and scientific formulas can be inserted and displayed in the drawing, and then modified when needed. Increased performance and technology support Take advantage of multi-monitor viewing and Ultra HD displays support. Open and edit more large files at once, and process larger files and images faster than ever with native bit, and support for multi-core and the latest hardware. Innovative Explore groundbreaking tools for sketching, illustration and technical authoring. Publish to WordPress Send your work directly to a WordPress media library from within the application. Add Perspective effect Quickly create the illusion of distance and depth by applying perspective to bitmaps, vector objects, or both, directly in the drawing window. Apply envelopes to bitmaps Shape a bitmap interactively by placing it in an envelope and dragging its nodes. Quickly and seamlessly blend a bitmap into an illustration by using envelope presets or crafting a custom envelope from scratch. LiveSketch is a revolutionary drawing tool based on the latest developments in Artificial Intelligence and Machine Learning. Free-form sketching converts into precise vector curves. Put your keyboard aside and try the contextual onscreen UI. Powerful stylus capabilities Work quickly and efficiently with the added control for the Windows Real-Time Stylus pen-compatible tablets, such as the Microsoft Surface, in addition to the Wacom tablet and devices. Use pressure to vary the size of the eraser nib, and also link the tilt and bearing to its flatness and rotation. Flipping the stylus or pen activates the Eraser tool to erase on the fly without using the toolbox. Symmetry drawing mode Create a range of symmetrical designs, from simple objects to complex kaleidoscopic effects in real time, and boost your productivity by automating what is usually a very time-consuming workflow. Straighten photos interactively Rotate crooked images by interactively aligning a straightening bar to an element in the photo or specifying an angle of rotation. All controls are easily accessible on screen or on the property bar for perfect results in minutes. Adjust photo perspective interactively Use the interactive Perspective Correction tool to adjust the perspective of buildings, landmarks, or objects in photos. Simply line up the four corner points with a shape that should be rectangular to adjust the entire shot. Touch friendly user interface Create quick adjustments using touch or a stylus. The Touch workspace maximizes the size of your drawing window by displaying only the tools and commands used most often, plus you can pan and zoom with a single gesture.

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Chapter 3 : CorelDRAW Technical Suite Free Download - Karan PC

Technical Illustration done on a computer, usually with Adobe Illustrator or other vector-based application, and in some cases more specialized drafting/engineering software.

You use the tools to create great looking content, without going into Illustrator or going back to a design engineer and as for new screens from CAD. So now how do I deliver this to the end user. First being just use the composer player. This is very nice if you are using it internally for work instructions on the shop floor, but you do need to have a computer that will support players need for good OpenGL graphics sometimes that can be tough. Another option is the High Resolution Workshop to create raster image output raster meaning pixels , to be put into a technical document. But the more high-resolution images you use the file size can go up on the document. So our suggestion to maintain some interactivity, high fidelity, and smaller file size is SVG scalable vector graphics. SVG image output allows your customers the ability to view your content on a cellular phone from a work-site to fix a problem fast. The following four area in the main section are things you should consider. Output area items Lines, Color Regions and Shadows: You definitely need to output lines, but do you need colors and shadows each area up to you, but my person preference is Lines and Colors, with no shadows. This is a multiplier for every outline and silhouette created below. If the complete image is a little light on the weight, change this number up and down to globally change them all no ring of power required. This governs the way Composer creates the lines of the illustration. This method governs what the outline of the thickest line in the illustration. Please see the options below. Below are some things I linked to in this project, as you can see I linked just about anything that would make for good navigation. Most people when they start learning composer will do the following. Select the actor to add the link on. Go to the Link property under the Events category in the properties pane Then click the  menu button Select the file they want to link with. Here is the method that I use. Go to the Link property under the Events category in the properties pane In the Link properties field manually type in the name that will be the name of your SVG file that you will be linking with. This will be relative path and will update when moved. If you find that would be valuable, please comment below and let us know.

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Chapter 4 : Technical Illustration Software – CorelDRAW Technical Suite

If you are searching for a ebook by Jon M. Duff Technical Illustration With Computer Applications in pdf form, then you have come on to the loyal website.

Said another way, whenever a drawing would assist in the understanding of an invention you need at least one patent drawing. Based on my experience I can say that patent drawings are almost always required, and the easiest best way to create a better, strong application is to include many patent drawings. The only time patent drawings are not required is when the invention relates to a chemical compound or composition is being claimed, or if there is just a method or process being claimed. Still, virtually every method or process can be depicted in one way, shape or form by illustration. That being the case it would be wise for applicants to provide illustrations even when a method is being claimed. It is important, in fact critical, for inventors and those new to drafting patent application understand that it is essential that the invention be described with as much detail and specificity as possible. You do not only want to describe the specific, but not describing the specific is an enormous mistake. That is wonderful, but if you only describe the very broad, general aspects of your invention the chance of getting a patent rapidly declines to asymptotically approach zero percent. The more broad and general the more likely what you describe will be within the prior art. Without layers of nuance and specifics you wind up having nothing to add to distinguish over the prior art and as a result wind up with no patent, or a patent with claims that are clearly invalid on their face. Team up with Enhance to bring your invention to life and get it to market! The hip bone is connected to the thigh bone and so on. This is largely done referring to the drawings included in the patent application so that the reader can reference the images as they read to follow along with the discussion. Example of an exploded view, prepared by Autrige Dennis. To properly accomplish the goal of having the best disclosure possible you should also not think in terms of a single patent drawing or illustration, but rather in terms of however many patent drawings are necessary in order to demonstrate what you have invented. Most patent applications have at least several sheets of drawings, with each sheet routinely having multiple views of the invention. You may need to show various views top, bottom, right, left, etc. You may also want to break down the invention and show drawings of one or more of the component parts. In my experience most patent application do not have as many drawings as they could have, which is a mistake. Patent drawings are extremely cheap given the overall cost of everything else that goes into the patent process. At that rate you can and should have many patent drawings showing various aspects of the invention. The rules will seem archaic to those new to the field, and there is an entire cottage industry associated with patent drawings. Your patent attorney will typically not be the one creating your patent illustrations unless your invention deals with software and the illustrations are only going to be flowcharts and schematics. For all over inventions a patent illustrator will work under the direction of the patent attorney or agent to provide the illustrations desired. The Patent Office specifies the size of the sheet on which the patent drawing is made, the type of paper, the margins, and many other hyper-technical details relating to the making of the drawings. The reason for specifying the standards in detail is that the drawings are printed and published in a uniform style when the patent issues, and the drawings must also be such that they can be readily understood by persons using the patent descriptions. At the application stage there is usually no need to provide a drawing that formally meets all the requirements set forth in the patent laws, but many of the less technical requirements do apply as of the time of filing, such as the need to use the right size font to label aspects of the illustration and margin requirements. Nevertheless, there are significant benefits to submitting professional patent illustrations at the time of filing. Indeed, it is my opinion that the better view is that formal, professional patent drawings are essential in any application. While it is now technically possible to file a non-provisional patent application without drawings, it would be an extremely foolish mistake to file a patent application without drawings. Although drawings can now come after the time of filing you still cannot add new matter after filing. Since drawings really are worth 1, words or more it is virtually impossible to

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know how meaningfully descriptive drawings could be provided after the time of filing without adding new matter. That has lead the Patent Office to warn everyone that the best practice remains filing drawings at the time of filing. In order to capture the full benefit of a filing date, a patent application needs to completely cover the invention and all permutations as of the time the application is filed, thus multiple quality patent illustrations are quite helpful. This is provided, of course, the drawing is detailed enough to convey nuanced information about your invention. Because the detail of the patent drawing is what saves you, having a professional patent illustrator is quite wise. Without question, the best way to broaden the scope of any application is to file the application with multiple, detailed and professional drawings. The benefit received from professional patent illustration is well worth the investment. Now, how do you make the drawings? As much as I can appreciate art I am no illustrator. There are so many rules and regulations with respect to patent drawings that like virtually all other patent attorneys and agents I would rather focus my time and energy on the law and the patent process than on meeting the technical requirements that will satisfy the picky requirements of the USPTO. The benefit of hiring someone is that these folks specialize in patent drawings, they know all of the little picky details, and the drawings they make will be accepted by the Patent Office the first time around. Autrige created the images of a hamburger used in this article, which were originally created for my article titled Working with Patent Drawings to Create a Complete Disclosure , which is essential reading for those new to patent drafting. If you are like many inventors and you need some engineering or development assistance I recommend you consider Enhance Product Development. Enhance can help you design your invention. They work in CAD and ultimately can create a 3D rendering of your invention. Although 3D renderings are not used in patent applications, they are particularly helpful if you want to move toward licensing your rights. The nice thing using Enhance is that they can print many drawings easily from a variety of vantage points. These drawings would be perfectly fine for a provisional patent application, and could possibly also be used in a non-provisional patent application. But if you need help and are thinking about licensing then working with Enhance gives you the double benefit of getting at least provisional patent drawings combined with development and licensing assistance.

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Chapter 5 : Canvas 15 | Canvas GFX

Note: Citations are based on reference standards. However, formatting rules can vary widely between applications and fields of interest or study. The specific requirements or preferences of your reviewing publisher, classroom teacher, institution or organization should be applied.

Sketching[edit] Sketch for a government building A sketch is a quickly executed, freehand drawing that is usually not intended as a finished work. In general, sketching is a quick way to record an idea for later use. Architectural sketches, for example, are a kind of diagrams. This tool helps architects to abstract attributes of hypothetical provisional design solutions and summarize their complex patterns, hereby enhancing the design process. A sliding straightedge known as a T-square is then placed on one of the sides, allowing it to be slid across the side of the table, and over the surface of the paper. The T-square is used to hold other devices such as set squares or triangles. In this case, the drafter places one or more triangles of known angles on the T-square—which is itself at right angles to the edge of the table—and can then draw lines at any chosen angle to others on the page. Modern drafting tables come equipped with a drafting machine that is supported on both sides of the table to slide over a large piece of paper. Because it is secured on both sides, lines drawn along the edge are guaranteed to be parallel. Primary among these are the compasses, used for drawing simple arcs and circles, and the French curve, for drawing curves. A spline is a rubber coated articulated metal that can be manually bent to most curves. Drafting templates assist the drafter with creating recurring objects in a drawing without having to reproduce the object from scratch every time. This is especially useful when using common symbols; i. Templates are sold commercially by a number of vendors, usually customized to a specific task, but it is also not uncommon for a drafter to create his own templates. This basic drafting system requires an accurate table and constant attention to the positioning of the tools. A common error is to allow the triangles to push the top of the T-square down slightly, thereby throwing off all angles. Even tasks as simple as drawing two angled lines meeting at a point require a number of moves of the T-square and triangles, and in general, drafting can be a time-consuming process. A solution to these problems was the introduction of the mechanical "drafting machine", an application of the pantograph sometimes referred to incorrectly as a "pentagraph" in these situations which allowed the drafter to have an accurate right angle at any point on the page quite quickly. These machines often included the ability to change the angle, thereby removing the need for the triangles as well. In addition to the mastery of the mechanics of drawing lines, arcs and circles and text onto a piece of paper—with respect to the detailing of physical objects—the drafting effort requires a thorough understanding of geometry, trigonometry and spatial comprehension, and in all cases demands precision and accuracy, and attention to detail of high order. Computer aided design[edit] Main article: Computer-aided design Today, the mechanics of the drafting task have largely been automated and accelerated through the use of computer-aided design systems CAD. There are two types of computer-aided design systems used for the production of technical drawings" two dimensions "2D" and three dimensions "3D". The lines, circles, arcs, and curves are created within the software. It is down to the technical drawing skill of the user to produce the drawing. There is still much scope for error in the drawing when producing first and third angle orthographic projections, auxiliary projections and cross sections. A 2D CAD system is merely an electronic drawing board. Its greatest strength over direct to paper technical drawing is in the making of revisions. Whereas in a conventional hand drawn technical drawing, if a mistake is found, or a modification is required, a new drawing must be made from scratch, the 2D CAD system allows a copy of the original to be modified, saving considerable time. View of a CAD model of a four- cylinder inline crankshaft with pistons A 3D CAD system such as KeyCreator, Autodesk Inventor, or SolidWorks first produces the geometry of the part; the technical drawing comes from user defined views of that geometry. Any orthographic, projected or sectioned view is created by the software. There is no scope for error in the production of these views. The main scope for error comes in setting the parameter of first or third angle projection and displaying the

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relevant symbol on the technical drawing. Buildings, aircraft, ships, and cars are modeled, assembled, and checked in 3D before technical drawings are released for manufacture. The various disciplines electrical, electronic, pneumatic, hydraulic, etc. BS and ISO produce standards to show recommended practices but it is up to individuals to produce the drawings. There is no definitive standard for layout or style. The only standard across engineering workshop drawings is in the creation of orthographic projections and cross section views. Drafting can represent two dimensions "2D" and three dimensions "3D" although the representation itself is always created in 2D. Drafting is the integral communication of technical or engineering drawings and is the industrial arts sub-discipline that underlies all involved technical endeavors. In representing complex, three-dimensional objects in two-dimensional drawings, the objects can be described by at least one view plus material thickness note, 2, 3 or as many views and sections that are required to show all features of object. Architecture[edit] To plan a renovation, this architect takes measurements, which he later enters into his computer-aided design software. Architectural drawing The art and design that goes into making buildings is known as "architecture". To communicate all aspects of the shape or design, detail drawings are used. In this field, the term plan is often used when referring to the full section view of these drawings as viewed from three feet above finished floor to show the locations of doorways, windows, stairwells, etc.

Chapter 6 : Formats and Editions of Technical illustration with computer applications [www.nxgvision.com]

Interactive Technical Illustration in many applications, but not in technical illustration where all of the benefits of computer generated technical.

Chapter 7 : Technical Illustration with Computer Applications - Jon M. Duff, Jon M. Dudd - Google Books

Computer Graphics Metafile (.cgm) format for Technical Illustrations Most users of graphics applications will be concerned with viewing their output on a graphics screen. On being satisfied with.

Chapter 8 : Patent Drawings The Way to Better Patent Applications - www.nxgvision.com | Patents & Patent

Airbus ACGM Technical Illustration as per Technical Data Specifications Most users of graphics applications will be concerned with viewing their output on a graphics screen.

Chapter 9 : What Is a Technical Illustrator? | Career Trend

Add context to your technical projects by using 3D views and models in your technical illustrations. With XVL Studio Corel Edition, integrated with CorelDRAW Technical Suite , you can create high-quality renderings from 3D views that are imported from DWG, 3DS, or IGES 3D model files.