

Rasterize, vectorize, mesmerize.

AutoCAD[®]

Raster Design 2008



Autodesk[®]

Maximize Raster Assets

Edit, manipulate, and incorporate raster images for better decision making and eye-popping presentations. When you're ready to unlock and extend the value of scanned drawings, maps, aerial photos, satellite imagery, and digital elevation models, you're ready for AutoCAD® Raster Design 2008 software.

The AutoCAD Raster Design product allows us to take old drawings that don't have a rasterized image, rasterize it, bring it into AutoCAD, and then work with that linework. We are really in the age now that we can eliminate the digitizer as a tool, and it's very exciting.

—Eric Galvan
G.C. Wallace Engineering

Raster Design's powerful and intuitive raster tools integrate seamlessly with AutoCAD® 2008-based applications. Use AutoCAD Raster Design to clean, edit, and vectorize scanned drawings without expensive redrafting or conversions. Edit, manipulate, and prepare raster data for use in presentation and authoring applications. Incorporate scanned drawings, maps, and photographs into projects to improve decision making and enhance communications. With AutoCAD Raster Design, organizations facilitate the design process, maximize productivity—and get maximum value from raster assets.

Make the Most of Your Image Archive

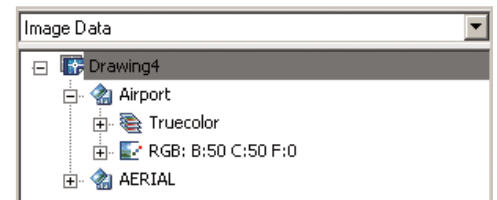
Using AutoCAD Raster Design software's comprehensive toolset, designers can integrate raster data within projects to communicate design intent accurately. Powerful cleanup tools make it easy to enhance raster image quality. And state-of-the-art vectorization and raster editing tools mean designers spend less time editing images—and more time on higher-value tasks.

Direct Editing of Multiresolution Image Formats

Increase flexibility and productivity by directly editing multiresolution image files such as LizardTech's MrSID, ER Mapper's ECW, and JPEG 2000. Save changes or edits, such as cropping and highlighting areas of interest, to JPEG 2000 format and retain the multiresolution advantages of a small file size and fast performance with high visual image quality.

Work with Several Images Simultaneously

Work in a simple and intuitive graphical environment for managing and displaying complex raster data. Get up and running quickly when working with new raster data types and operations.

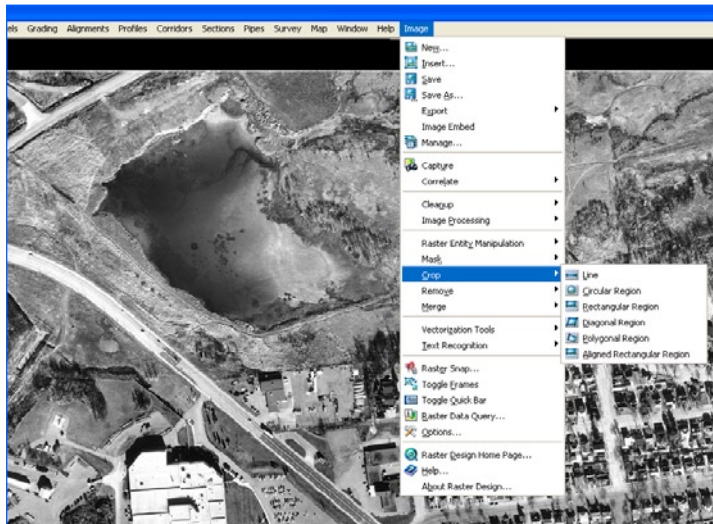


Use Industry-Standard Image Formats

AutoCAD Raster Design supports numerous image formats so designers can easily integrate and use imagery within their projects. Supported multiresolution image formats include MrSID®, ECW, and JPEG 2000. Read support for DigitalGlobe's Quickbird TIFF and the Landsat FAST L7A format multispectral imagery provide broad range of data available within your projects. AutoCAD Raster Design also includes read support for the National Imagery Transmission Format (NITF), which is crucial for the U.S. Department of Defense and the federal intelligence community. Other supported formats include

| | | |
|--------------|-----------|-----------|
| BMP | CALS | DEM |
| DOQ | ECW | FLIC |
| GeoSPOT | GeoTIFF* | GIF |
| IG4 | JPEG/JFIF | JPEG 2000 |
| PCX | PICT | PNG |
| Landsat FAST | RLC | SID |
| TGA | TIFF** | NITF |

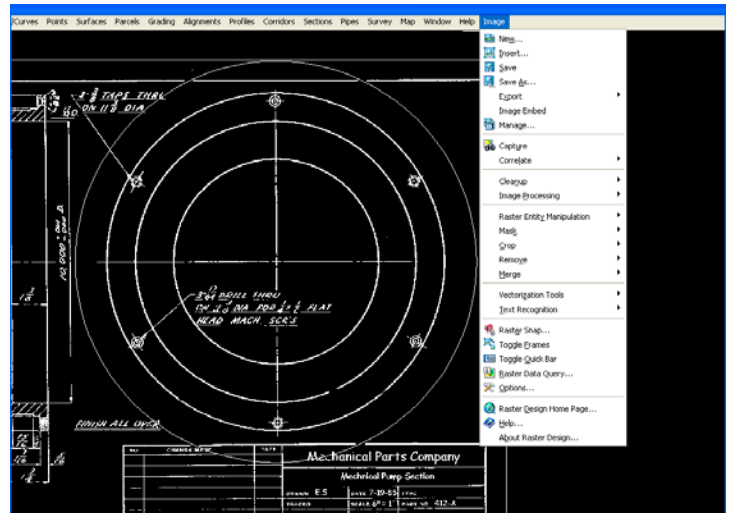
(National Imagery Transmission Format)



versions 2.0 and 2.1 Quickbird TIFF (DigitalGlobe)
 *8- and 16-bit multispectral GeoTIFF
 (most satellite data including Landsat and IKONOS)
 **Up to 16-bit single-band TIFF (IKONOS and other 11-bit single-band data)

Manage DWG Files and Images

Embed bitonal images within the drawing file so a DWG™ file can contain both imagery and design data without using external image reference files. Simplify document management tasks by maintaining and transporting only one file and avoiding the necessity of tracking external image references. Easily and reliably send drawings containing images to clients, partners, and agencies, and avert problems with image paths at the receiving end.



Clean Raster Drawings and Images

Improve usability and legibility of scanned drawings with powerful image cleanup tools. Despeckle removes stray pixels in images resulting from scanning of dirty or faded drawings or blueprints. Deskew corrects drawings that were crooked as they were fed through a scanner. Bias corrects distortion in an image's aspect ratio. Mirror can correct transparencies that have been scanned upside down.

Use the Touchup tool to reduce time and effort in cleaning up scanned drawings and maps. This paint-style drawing tool uses multiple resizable brushes that paint in either foreground or background image color. Use it to fill in gaps, touch up characters, or delete unwanted information on drawings.

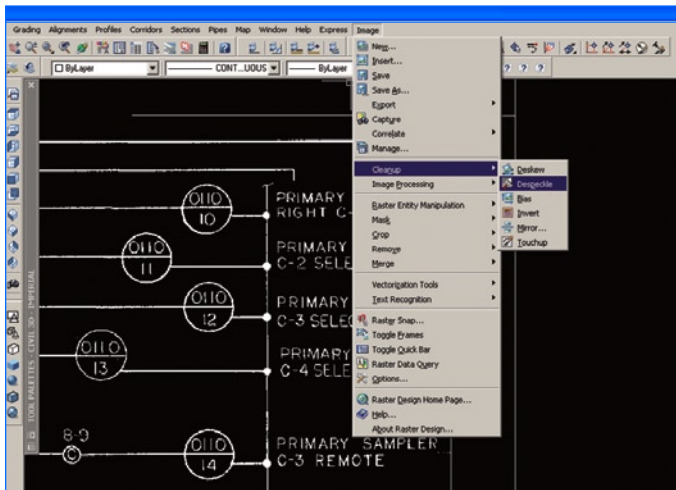


Improve Decision Making and Enhance Communication

Enhance AutoCAD-Based Imaging Functionality

Use AutoCAD Raster Design to extend the use of image archives. Complement AutoCAD software and AutoCAD-based products with AutoCAD Raster Design as the preferred raster editing tool. Civil engineering and geospatial professionals use AutoCAD Raster Design for data editing, manipulation, and preparation. The software's image editing and saving functionality provides the ability to

- Perform (true) coordinate transforms on raster data
- Crop large data sets to include only the area of interest
- Merge sections of raster together to create a larger "seamless" image
- Tile large data sets into several smaller ones
- Convert from one file format to another
- Export georeferencing information
- Threshold or change color depth of imagery
- Use image-processing functions to enhance or correct imagery
- Make color palette adjustments
- Work with multispectral data sets
- Clean up scanned maps
- Convert scanned data to vector



Make the Most of Color and Grayscale Images

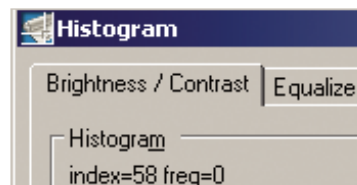
With the Palette Manager tool, designers can

- Determine which colors an image uses
- Change an existing color entry (or entries) to map to a different color
- Combine several color indexes into a single mapped color
- Compress the palette
- Import and export palettes
- Rearrange image colors
- Standardize images on a single color palette
- Gain more control over transparency color selection



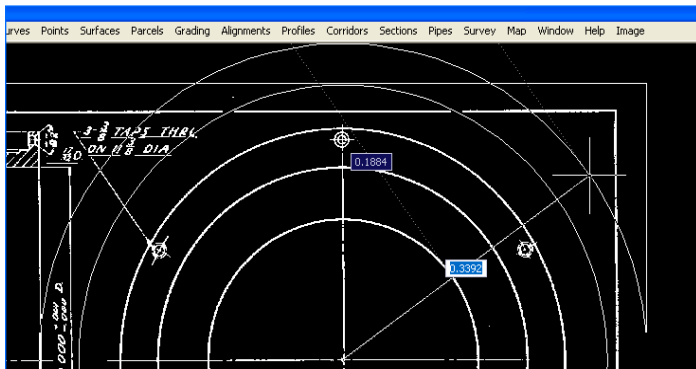
Enhance Images with Intuitive Image-Processing Tools

Several image-processing features are available to enable designers to get the most from existing imagery. The Histogram feature includes functions to equalize images, adjust brightness and contrast, convert grayscale or color images to bitonal images, convert color images to grayscale, and perform nonlinear tonal adjustments. The Convolve feature has smoothing filters to reduce ruggedness and noise as well as sharpening filters to make differences in shading more distinct. The Invert feature reverses the light and dark shades of binary, color, and grayscale images. These and other image-processing features in AutoCAD Raster Design can improve the appearance of existing images, so organizations get the full benefit from their investment in image archives.



Accurately Convert Raster to Vector

Use VTool primitives with dynamic dimensioning and grip editing for efficient and intuitive raster to vector conversion in AutoCAD Raster Design. Create circles, arcs, and rectangles from raster, and directly verify the geometry on screen or use grips to facilitate the verification process. Increase productivity and the value of existing design data by taking advantage of heads-up input, dynamic dimensioning, real-time feedback, and faster conversion.



Modify Raster Entities Without Converting to Vector

The Raster Entity Manipulation (REM) tools provide the ability to directly edit and modify raster objects. Extend and trim REM entities to each other, as well as to AutoCAD entities. Create offset or fillet REM entities from existing raster entities. Working directly with raster objects saves time and effort in editing scanned drawings and maps.

Use Standard AutoCAD Commands on Raster Regions and Primitives

Edit raster entities in binary, color, and grayscale images. Adjust the radius of a raster circle, remove some dimension lines on a mechanical drawing, or use REM to copy electrical symbols between images. REM commands define raster entities as REM objects. Use AutoCAD commands to move, scale, copy, rotate, and perform other operations on those objects. Merge modified raster data into an existing image, or create a new image from them. Save time by reusing existing data instead of redrawing. Smooth integration with AutoCAD accelerates learning and improves productivity.

Match Images to Your Project

Align an image to existing vector linework by specifying control points on the image and drawing. The Match command rotates, scales, and moves the image all at once. One-step image registration saves time and improves accuracy when working with raster or hybrid files.

Preserve Image Georeferencing Information

Civil, mapping, and GIS (geographic information system) projects require georeferenced imagery to enhance presentations. Use powerful options to save the georeferencing information to a resource file, a world file, or a GeoTIFF file. Save processing time and file storage space by exporting just a world file without the associated image.

Erase Raster Lines, Arcs, and Circles Easily

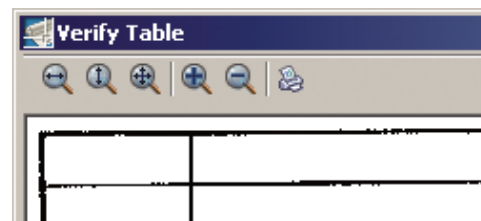
Delete a raster line, arc, or circle defined as a primitive object using the Quick Delete functionality of SmartPick. AutoCAD Raster Design automatically detects the geometry of the selected raster entity, deletes it, and cleans up intersections with other raster entities. Modify scanned drawings quickly and accurately.

Convert Raster Data to Vector

Do you often have to update or modify scanned engineering drawings or maps? Are you forced to convert raster lines, arcs, and text to vector for use in AutoCAD-based products as part of your drawing, model, or design? Not any more. With AutoCAD Raster Design software's vectorization tools, designers can interactively convert raster to vector to accelerating project turnarounds and improving efficiency.

Use Optical Character Recognition

Recognize machine and hand-printed text and tables on raster images to create AutoCAD text or multiline text (mtext) automatically. Use interactive verification to correct results with dictionary matching. Save manual data entry time and improve accuracy when converting drawings with lots of text.

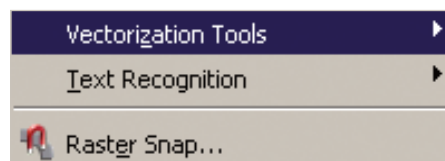


Communicate Ideas Precisely and Effectively

Create compelling presentations that combine information-rich raster images and intelligent vector drawings. Present proposals and internal communications that integrate maps, satellite data, and other forms of imagery. Share design and analysis findings with a high degree of specificity, and provide detailed graphical representations that speed project approvals.

Create Polylines and Contour Objects Rapidly

Generate polylines or AutoCAD® Land Desktop contour objects from scanned contour maps enabling designers to create surfaces from them in AutoCAD®-based design applications. The semiautomatic process makes conversion highly efficient as well as accurate.



Create Breaklines from Raster Drawings

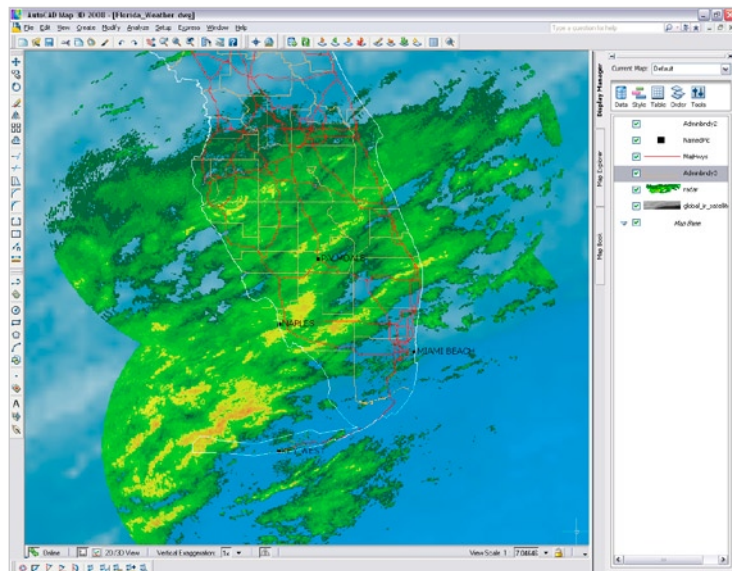
The 3D Polyline Follower command traces a defined path, stopping at each point where it intersects raster contours to prompt for elevation data. Designers can then use these 3D polylines as breaklines to help create surfaces in AutoCAD-based design applications.

Get Better Raster to Vector Results

Place vector geometry on specified layers using polyline width settings based on the width and pattern of the underlying raster linework. Use vector separation to control contour creation by integrating with AutoCAD Land Desktop settings. Vector separation saves time and gets better conversion results.

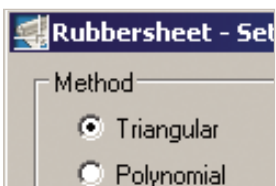
Improved Interoperability with AutoCAD Map 3D 2008 and AutoCAD Civil 3D 2008

AutoCAD Raster Design provides greater flexibility by allowing the retrieval and editing of imagery accessed by the AutoCAD® Map 3D 2008 and AutoCAD® Civil 3D® 2008 FDO raster providers. Perform data preparation tasks such as true coordinate transforms, cropping unwanted regions, merging multiple images together, and image processing operations by capturing Map Display Manager Layer-based raster data or data stylizations. Save these image edits and modifications for AutoCAD Map 3D or AutoCAD Civil 3D to access through an FDO reconnect.



Improve Accuracy with Rubbersheeting

Two rubbersheeting algorithms are available: polynomial and triangulation. Use the triangulation algorithm when working with global positioning systems (GPS) and surveyed control points. Use the grid option when establishing a regular array of control points. Improve accuracy, and get more predictable results using rubbersheeting.



Enhance Presentations by Capturing the Moment

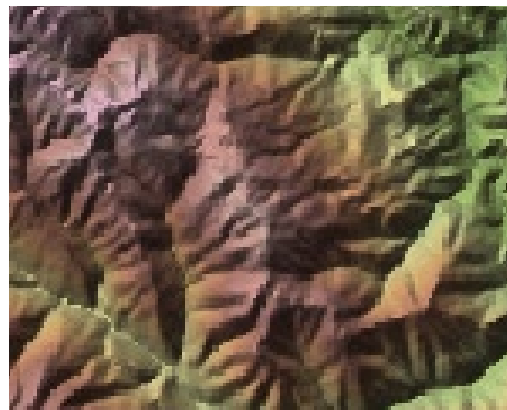
With the Image Capture feature designers can create a TIFF-format snapshot of color-mapped imagery at the same insertion point, resolution, and scale as the original. Extend DEM or multispectral data analysis for use in other applications such as Microsoft® Word and PowerPoint® programs, and AutoCAD software. Use the snapshot to produce "what-if" scenarios and enhance presentations.

Use Elevation Data for Better Analysis

Digital elevation model (DEM) data provides readily available surface information for large areas. Analyze DEM data for elevation, slope, and aspect. Use color-mapped DEM files for interpretation and map composition. Take advantage of easily obtained, low-cost data for timely and effective analysis and presentations. Use DEM data as input for site suitability analysis. Elevation data is supported in USGS DEM, DTED, and ESRI® GRID formats.

Manipulate Multispectral Imagery and DEM Data to Fit Projects Needs

Multispectral and DEM data must often be edited before it can be used efficiently in a project. Available editing operations include transforming data from native coordinate systems when using AutoCAD Map 3D or AutoCAD Civil 3D software. Crop these images to conform to your project area, and merge images to cover larger areas with a single image. Change image density to handle images more efficiently. Save time by adapting multispectral and DEM data to the coordinate system used by the project. Make more efficient use of large multispectral images by reducing them to cover just the area needed for a project.



When our customers bring in their old drawings that might have been sitting in a drawer for 30 years, it's safe to say that the quality of the drawings may have degraded from age, water damage, or just plain old dirt. Scans that result from such damaged drawings aren't the highest quality; however, with the powerful suite of tools in Raster Design, including rubbersheeting, despeckling, and others, we can massage the data and make it accurately convey the design intent once again.

—Michael C. Johnson, CEO
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