AutoCAD®
Civil
2010

Questions and Answers

AutoCAD® Civil 2010 software, the better AutoCAD® software choice for civil engineering technicians, drafters, and surveyors, creates coordinated, reliable design information and delivers higher-quality construction documentation for transportation, land development, and environmental projects. AutoCAD Civil helps boost productivity and streamline time-consuming design tasks such as corridor and intersection design, parcel layout, pipes, grading, and customizable styles for managing CAD standards. AutoCAD Civil helps enable users to deliver more consistent construction documentation with styles-based drafting and wizard-driven plans production, and helps improve team coordination with integrated tools that help keep designs and drafting synchronized. Accelerate learning in a familiar AutoCAD® environment with tools and processes you already know.

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1 General Product Information

1.1 What are the main benefits of AutoCAD Civil 2010 software?

AutoCAD Civil 2010, the better AutoCAD software choice for civil engineering design and construction documentation, helps civil engineering technicians, drafters, and surveyors complete transportation, land development, and environmental projects faster. By intelligently connecting design and documentation, AutoCAD Civil helps users boost productivity, deliver higher-quality designs and construction documentation, and improve coordination and collaboration. AutoCAD Civil offers all the AutoCAD software functionality; the familiar AutoCAD workflow and interface enable you to start working—and realize productivity gains—quickly.

1.2 Which version of AutoCAD is AutoCAD Civil 2010 built on?

AutoCAD Civil 2010 is built on AutoCAD 2010 software. All AutoCAD 2010 functionality is included in AutoCAD Civil 2010.

1.3 Does AutoCAD Civil 2010 contain geospatial and mapping functionality?

AutoCAD Civil 2010 contains limited geospatial and mapping functionality. However, you can export AutoCAD Civil data to a spatial data format (SDF) file that you can use in AutoCAD® Map 3D software and Autodesk MapGuide® Enterprise software. SDF files store data as features, which means that you are working with real-world objects rather than geometry. In addition, you can also export TIN surface models as LandXML files. AutoCAD Civil also supports the setting and use of coordinate systems.

1.4 What types of projects are best handled with AutoCAD Civil 2010?

AutoCAD Civil 2010 can help provide notable productivity benefits for a variety of project types, including transportation, land development, and environmental projects. The software's functionality is flexible enough to be used for a variety of tasks including surveying, subdivision and parcel layout, highway geometrics and corridor modeling, golf course design, and more. The purpose-built tools inside AutoCAD Civil are best suited for the surveyor, technician and draftsperson, with a focus on design, plans production, and documentation.

1.5 What is new in AutoCAD Civil 2010?

The 2010 release of AutoCAD Civil continues to demonstrate Autodesk's commitment to high quality and increased performance and includes the following enhancements:

Performance and Capacity

- Surface performance and scalability improvements

Usability

- Updated product interface that streamlines usability by providing user interaction which is consistent across Autodesk® products, is easy to use, and is easy to learn
- Civil-specific ribbon for creating, editing, and annotating the civil model
- Improved usability via contextual tabs, rationalized user interface, and tooltips
- Improved efficiency for advanced users; easier to learn for new users

Parcels

- Parcel layout usability enhancements

- New parcel sizing options, including frontage offset, minimum width, min/max depth

Surveying

- Additional field-to-finish functionality to create survey databases from COGO points, ASCII field book information, and LandXML data
- Automatically process linework from survey database using predefined linework definition controls
- Improved management of overall survey process with introduction of import events
- Workflow improvements in figure editing

Plans Production and Production Drafting

- Ability to superimpose and label objects, such as blocks and lines, onto profiles and sections
- General label improvements including automatic staggering of overlapping labels, leader enhancements, band labels, and contour label masking
- Material hatching between surface and design profiles

Intersections

- Dynamic intersection features including curb returns, road widening, and alignment offsets
- Enhancements to alignments, profiles, and corridor modeling to support intersection design requirements
- Creation of corridor model including intersection
- Road design usability improvements

Interoperability

- Ability to import Revit® Architecture software building shells directly into AutoCAD Civil software
- Ability to locate building using location and orientation defined in Revit Architecture
- AutoCAD Civil building includes utility connection points, roof areas, building entrances, and capacity information

1.6 What is the difference between AutoCAD Civil 2010 and AutoCAD Civil 3D 2010?

The following table provides a comparison of AutoCAD Civil 2010 and AutoCAD® Civil 3D® 2010 software.

	AutoCAD Civil 2010	AutoCAD Civil 3D 2010
Target user and application	Civil engineering technicians, drafters and surveyors for developing civil engineering	Same as AutoCAD Civil + Civil engineers and designers responsible for design, analysis and simulation
Industries	• Land Development • Transportation • Environmental	Same as AutoCAD Civil

Drafting and Documentation	• Plan production and drafting • Drafting styles and standards • Reporting	Same as AutoCAD Civil + Map Books
Design	• Surface creation and design using grading and feature lines • Parcels • Corridor modeling and road design • Pipe Layout	Same as AutoCAD Civil + Quantity takeoff functionality
Surveying and Coordinate Systems	• Support of surveying workflow for civil engineering projects from field to finish • Import and process raw survey data from most data collector formats • Survey database • Traverse and least-squares adjustment • Automatic creation of survey figures • COGO • Coordinate system settings and transformations • Export for machine control	Same as AutoCAD Civil + Drawing clean up tools
Data Management and Team Coordination	• Xrefs (including annotation of civil model) • Data shortcuts • Advanced data management with Autodesk® Vault 2010 software (included)	Same as AutoCAD Civil + Drawing query tools
Data Exchange and Interoperability	DGN, LandXML, Google Earth™, and SDM	Same as AutoCAD Civil + Image insertion and manipulation + geospatial data import and export
Stormwater Design and Analysis	No	Stormwater design and analysis with Hydraflow Storm Sewers Extension, Hydraflow Hydrographs Extension, and Hydraflow Express Extension for AutoCAD® Civil 3D®
Geospatial Analysis and Mapping Tools for Civil Engineering	No	Topology analysis tools including buffer, overlay and dissolve

1.7 What benefits does Autodesk Vault 2010 provide users of AutoCAD Civil 2010?

For companies looking for more advanced data management for their civil engineering workflow, the addition of Autodesk® Vault 2010 software included with AutoCAD Civil 2010, enhances the data shortcut functionality with advanced change management, version control, user permissions, and archive control. For more information about Autodesk Vault software included with AutoCAD Civil 2010, visit www.autodesk.com/civil.

1.8 Do I need to use Autodesk Vault to share civil model data with AutoCAD Civil 2010?

AutoCAD Civil 2010 introduces a more consistent workflow and user interface that is independent of Autodesk Vault. Autodesk Vault is still included and is integrated into AutoCAD Civil 2010 for users who require data management capabilities. However, AutoCAD Civil 2010 users can opt to work in a data shortcut (non–Autodesk Vault) environment if Autodesk Vault is not appropriate for their organization. Functionality, such as the ability to create dynamic labels in model elements that are displayed in AutoCAD software external references (xrefs) provide organizations with even more flexibility to implement the workflow that best suits their needs.

1.9 What are the options for moving to AutoCAD Civil 2010?

Autodesk offers a variety of options for purchasing AutoCAD Civil 2010 software, including new licenses, cross-grades from AutoCAD, AutoCAD LT® software, AutoCAD® Map 3D, CAiCE™ Visual® Transportation products, and AutoCAD® Land Desktop software products. Options vary by country and region. Contact your Autodesk Authorized Reseller for more information.

2 Technology

2.1 Is there an API (application programming interface) for extending AutoCAD Civil 2010? What data is included?

Yes. AutoCAD Civil 2010 software includes the full AutoCAD 2010 software APIs as well as a broad API for AutoCAD Civil objects and annotation. This API includes the ability to query references and create data such as point groups, surfaces, alignments, profiles, parcels, and the corridor model. Full documentation of the API is included in the product as a help file. Third-party developers around the world are using this API to help create new applications that extend AutoCAD Civil.

2.2 What survey communication support is available for AutoCAD Civil 2010?

AutoCAD Civil 2010 includes the Survey Link extension on the product DVD. Using the Survey Link extension, you can easily convert proprietary raw survey data into an Autodesk field book for use in AutoCAD Civil. By harnessing the power of field books, you can more quickly and easily import and process survey data, making the field-to-finish process easier. Using the Survey Link extension included with AutoCAD Civil, you can work with most raw survey data formats, including TDS raw data (.rw5 and .raw); Sokkia SDR Numeric 4 and SDR Alpha 14; Topcon FC-4, GTS 210/220/310 raw data, and DL-100 Digital Level; Leica® GRE3 and GSI raw data; SMI; and Nikon® AP800, 700, DTM500, 400, 300, DR48, and more.

In addition, several third-party partner applications provide survey communication support for AutoCAD Civil 2010 software, including Leica, Trimble Link, and Topcon:

- Leica X-change provides a link between Leica System 1200 surveying equipment and the AutoCAD Civil environment.

- Trimble Link for AutoCAD Civil enables users to transfer survey and design data between the AutoCAD Civil database and Trimble field systems, including the TSC1™, TSCe™, ACU Controller, Trimble CU Controller, Geodimeter® CU600, and supported Nikon instruments. It further supports the use of Trimble site controller systems.
- Topcon Link software is an import-export utility that transfers data from the GPT7000i to a desktop or laptop for analysis or exchange with AutoCAD Civil.

For more information on survey partner products, visit www.autodesk.com/civil .

3 Installation, Configuration, and Licensing

3.1 Can I install AutoCAD Civil 2010 on a computer with other applications that are based on AutoCAD?

The following AutoCAD-based applications can be installed on the same system as AutoCAD Civil 2010.

	2010	2009	2008	2007
AutoCAD Civil	N/A	✓	N/A	N/A
AutoCAD Civil 3D	✓	✓	✓	✓
AutoCAD Land Desktop		✓	✓	✓
AutoCAD	✓	✓	✓	✓
AutoCAD Map 3D	✓	✓	✓	✓
AutoCAD Architecture	✓	✓	✓	✓

3.2 What are the system requirements for AutoCAD Civil 2010?

Visit www.autodesk.com/civil for a complete list of system requirements.

3.3 Can AutoCAD Civil 2010 be installed from a CD?

The AutoCAD Civil 2010 product package ships with DVD media only. Subscription customers also have the option to download AutoCAD Civil 2010 software. CD media is not available.

3.4 What are the prior use rights for AutoCAD Civil and AutoCAD Land Desktop subscription customers?

Notwithstanding anything to the contrary in the EULA for AutoCAD Civil, if you have validly purchased a cross-grade license from AutoCAD Land Desktop to AutoCAD Civil, you can continue to use the AutoCAD Land Desktop seat from which you cross-graded for a period of 18 months from the time you install AutoCAD Civil. Also, the legacy AutoCAD Land Desktop seat cannot be installed separately from your AutoCAD Civil installation. Finally, AutoCAD Civil subscription does not include either AutoCAD Land Desktop or AutoCAD® Civil 3D®—Land Desktop Companion software as part of the product.

3.5 How is Autodesk Vault installed?

The Autodesk Vault client installation is included in the AutoCAD Civil 2010 installation as an option. The server component is provided on a separate DVD. This component is not

needed on all user desktops. Organizations should consider several issues before installing AutoCAD Civil 2010, such as whether the project functionality in AutoCAD Civil is going to be used, and if so, where project data will be stored. For more information, see the materials included in the product.

3.6 Is installation and use of Autodesk Vault required with AutoCAD Civil 2010?

No, AutoCAD Civil provides a scalable approach to data management and team coordination that helps to address the needs of any organization, regardless of size or organizational structure. Starting with xrefs and data shortcuts, project team members can share model data such as surfaces, alignments, and pipes, and work off the same instance of a design object for multiple design tasks.

3.7 Do I need to purchase a dedicated server to store project data?

An Autodesk Vault server can be set up in a variety of ways. Before installing AutoCAD Civil 2010 software, an organization should determine how it wants to save and share project data. Options include the following:

- Define a local machine as the data server
- Define another production machine as the data server
- Define a dedicated machine as the data server

Where project data resides is determined during installation, but the location can be changed at any time after the software is installed.

3.8 Can Microsoft SQL Server be used to host Autodesk Vault data?

If you are currently using a previous version of Microsoft® Server Desktop Engine (MSDE) in conjunction with Autodesk data management server, you should consider upgrading to either Microsoft SQL Server™ 2005 Workgroup or the full version of Microsoft SQL Server 2005. By upgrading from MSDE to a newer version of the SQL server, you increase the maximum number of CPU's and the maximum database size limitation of 4GB. AutoCAD Civil 2009 includes an option to install the Autodesk® Data Management Server. The standard database installed with Autodesk Data Management Server includes Microsoft SQL Server 2005 Express.

4 Compatibility and Interoperability

4.1 Are AutoCAD Civil and AutoCAD Civil 3D drawings and model data compatible?

Yes. The drawings and objects are the same in both applications and can be shared seamlessly.

4.2 Can I open drawings created in previous versions of AutoCAD Civil in AutoCAD Civil 2010?

Yes. When a file that was created in an earlier version of AutoCAD Civil software is opened with AutoCAD Civil 2010, both the drawing and objects are updated to the 2010 format when the drawing is opened and saved.

4.3 Can I save drawings in AutoCAD Civil 2010 for use in previous versions of AutoCAD Civil or AutoCAD software?

The AutoCAD 2010 DWG file format has been updated and is different from the 2007/2008/2009 DWG file format. This new format is also the same DWG file format that is used in AutoCAD Civil 2010 software. To support the use of previous AutoCAD releases, AutoCAD Civil 2010 has a built-in SaveAs

function so you can save drawings to prior AutoCAD releases. However, users who open an AutoCAD Civil 2010 drawing in previous AutoCAD Civil releases will be unable to modify or interact with the model. All base AutoCAD operations will be enabled but AutoCAD Civil-specific commands will not be enabled. Note also that the AutoCAD Civil model objects will remain in the drawing and will be fully accessible once the drawing is opened again in AutoCAD Civil 2010.

You can also export the AutoCAD Civil 2010 drawings to the DWG format for use with previous versions of AutoCAD. When this is done, the civil model will be extracted as AutoCAD primitives.

4.4 Can I share an AutoCAD Civil 2010 drawing with others who are using AutoCAD 2010?

Yes. You can share AutoCAD Civil 2010 drawings with AutoCAD 2010 users. However, AutoCAD 2010 users should install the AutoCAD Civil 2010 object enabler so that they can manipulate AutoCAD Civil labels in the drawing without affecting the model. When the file is reopened in AutoCAD Civil 2010, the drawing loses no information and all labels are in place. The object enabler is included on the AutoCAD Civil 2010 software installation DVDs and can be downloaded from the Autodesk website.

Note: The AutoCAD Civil 2010 object enabler can be installed only on the 2010 family of products.

4.5 What products does the AutoCAD Civil 2010 object enabler work with?

The AutoCAD Civil 2010 object enabler works with AutoCAD 2010, AutoCAD® Mechanical 2010 software, AutoCAD® Electrical 2010 software, AutoCAD® Architecture 2010 software, AutoCAD® MEP 2010 software, AutoCAD Map 3D 2010 software, Autodesk® 3ds Max® 2010 software, and Autodesk® Navisworks® 2010 software.

4.6 Can AutoCAD Civil 2010 read and write DGN format files for use in MicroStation software?

Yes. AutoCAD Civil 2010 can read and write MicroStation® DGN format files.

5 Consulting, Training, and Support

5.1 Are there other resources that can help me learn more about AutoCAD Civil 2010?

There are many resources that you can take advantage of, including webcasts, reseller seminars, discussion groups, consultant programs, and more. Visit www.autodesk.com/civil for more information.

From instructor-led or self-paced classes, to online training or education resources, Autodesk offers a robust portfolio of learning solutions to fit your individual needs. Get expert guidance or implementation services at an Autodesk Authorized Training Center (ATC®), access learning tools online or at your local bookstore, and validate your experience with Autodesk certifications. To learn more, visit www.autodesk.com/learning.

5.2 What learning and training materials ship with AutoCAD Civil 2010?

AutoCAD Civil 2010 software includes a collection of tools accessible from the Learning Resources page that help you get up and running more quickly. This includes Getting Started with Civil, tutorials, and best practices.

6 Subscription

6.1 Can AutoCAD Civil 2010 be purchased without Subscription?

Yes, AutoCAD Civil 2010 can be purchased without Subscription. Note, however, that only Subscription customers receive product updates, e-Learning, and other subscription benefits. Several Subscription pricing options are available, including single and multiyear contracts. Contact your Autodesk Authorized Reseller for complete details.

6.2 What benefits does an AutoCAD Civil software Subscription offer?

Get the benefits of increased productivity, predictable budgeting, and flexible license management with Autodesk® Subscription. You get any new upgrades of your Autodesk software and any incremental product enhancements, if these are released during your subscription term. A range of community resources, including web support direct from Autodesk product support specialists and self-paced training to extend your skills, make Autodesk Subscription the best way to optimize your investment in AutoCAD Civil software.

The annual fee includes:

- Autodesk Subscription offers a way to make your AutoCAD Civil software costs predictable. Whether you opt for a one-year subscription or a multiyear contract, the costs are known for the entire term of your contract.
- Product enhancements may include extensions, bonus packs, or other rich content for AutoCAD Civil—exclusive to Subscription customers. Only Subscription customers can access these new product downloads that add new functionality or features to your AutoCAD Civil software. You can adapt them into your current workflows and apply them immediately to your new projects to help you stay competitive.
- Autodesk Subscription helps make managing software licensing hassle-free and flexible. You have added flexibility to allow your employees to use their AutoCAD Civil software—in the office or at home. Better yet, designers are entitled to run previous versions of the AutoCAD Civil software concurrently with the latest release (under certain conditions), so updates will not cause disruptions to ongoing projects where clients or partners are running previous versions.
- Get what you need to stay productive with AutoCAD Civil software. With web support you get direct, one-to-one communication with Autodesk product support specialists for answers to your installation, configuration, and troubleshooting questions. And you do not need to keep track of support records and email trails, because we will do it for you!
- Get your team up to speed quickly with access to a complete library of interactive training tools and high-quality, self-paced e-Learning lessons that allow users to increase their productivity and master new skills. E-Learning lessons give you a quick and easy way to learn about the features and functionality of AutoCAD Civil software. These short lessons are available on demand and complement more in-depth training provided through Autodesk Authorized Training Centers or Autodesk Authorized Resellers.

To learn more, take the Autodesk Subscription tour at www.autodesk.com/subscription.

6.3 What product downloads are available for AutoCAD Civil Subscription customers?

For the latest product downloads, please visit www.autodesk.com/civilsubscription. Downloads may include the latest release of the software, extensions, bonus packs, or other rich content for AutoCAD Civil software—exclusive to Subscription customers and can be downloaded from the Subscription Center www.autodesk.com/subscriptionlogin.

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