

Start thinking in 3D.

**AutoCAD®**

Civil 3D® 2009



Autodesk®

# A Better Way of Working

Working with AutoCAD® Civil 3D® software is quite simply a better way of designing, analysing and documenting civil engineering projects.

Civil 3D does cut time off the design process, but its real power comes in change and coordination. Using Civil 3D means I can stop worrying about changes and focus on getting the best design possible to the client.

—Terence Kwong  
Civil Engineer  
Curtins Consulting

By intelligently connecting design and documentation, AutoCAD Civil 3D helps you boost productivity, deliver higher-quality designs and construction documentation, improve coordination and clearly communicate design intent to win the next job. Whether you work on land development, transportation or environmental projects, Civil 3D is the right choice for your organisation.

#### Not Just Faster: Higher Quality

Working with Civil 3D reduces the time it takes to design, analyse and implement changes, so you can evaluate more what-if scenarios—realising improved results faster. And with styles-based draughting you can reduce errors and deliver higher-quality, more consistent construction documentation.

#### On Schedule and on Budget

With Civil 3D, the entire team works from the same up-to-date model so they stay co-ordinated throughout all project phases. Through a scalable approach ranging from xrefs and data shortcuts

to integrated data management and version control, Civil 3D gives local and remote team members parallel access to the latest model, helping to keep projects on schedule and on budget.

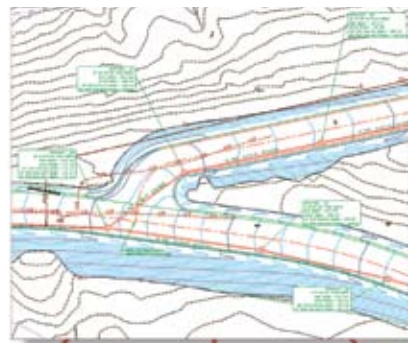
#### Communicate Winning Ideas

Smart design is not everything. You need to communicate your ideas to multiple stakeholders, including the public and review boards. With 3D visualisation tools, Civil 3D makes it easy to create high-impact presentations that quickly communicate design intent to your audience.

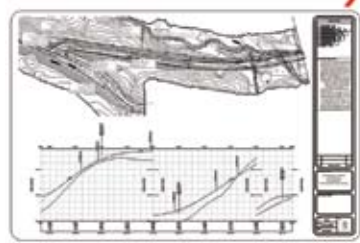
#### One Flexible Solution

With Civil 3D, you have the flexibility to handle a broad range of project types, including land development, transportation and environmental. In addition, the software has the depth of functionality to support the technical needs of your entire project team—from civil engineers, designers and draughters to surveyors.

**One Change.  
Multiple Updates.  
All Automatic.**



**Model.** Use the intelligent and dynamic tools to quickly make a design change at any stage of the project.



**Draughting.** The model automatically reflects any changes to draughting and annotation throughout the project. Sheets update with the most current and accurate design information, helping to reduce errors and omissions.



**Visualisation.** Quickly and efficiently produce visualisations that remain in sync with design changes as they are made.

Station	Area	Volume	...
0+00	100	1000	...
0+10	120	1200	...
0+20	140	1400	...
0+30	160	1600	...
0+40	180	1800	...
0+50	200	2000	...
0+60	220	2200	...
0+70	240	2400	...
0+80	260	2600	...
0+90	280	2800	...
1+00	300	3000	...

**Reports.** Whether it's a volume, structure or pipe table, when a change to the design is made, all the crucial information for your reports and tables updates automatically.



## Pipes

Use rules-based tools to lay out sanitary and storm drainage systems. Make changes to pipes and structures using graphical or numerical input and conduct interference checks. Plot and complete final draughting of the pipe network in plan, profile and section views, and share pipe network information, such as material and size, with external analysis applications.



Data provided by JR Engineering

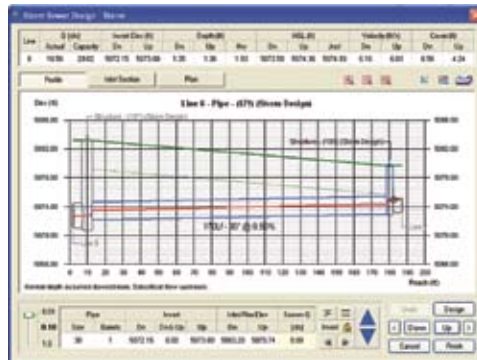
## Mass Haul Diagrams

As the coordination between engineers and contractors becomes increasingly important, mass haul diagrams continue to be a vital tool for planning the movement, amount and placement of material during construction. Use Civil 3D to generate mass haul diagrams for analysing the distance over which cut and fill can balance, the amount of material to be moved, the direction of movement and the identification of borrow pits and dump sites.

## Storm Water Hydraulics and Hydrology

Three new extensions are available to Civil 3D customers for storm water hydraulics and hydrology including storm sewer design, watershed analysis, detention pond modelling and culvert analysis.

- Hydraflow Storm Sewers Extension for AutoCAD® Civil 3D® software is an easy-to-use, full-featured storm sewer design and analysis package.
- Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® software is a comprehensive solution for watershed analysis and detention pond design, from simple sites to complex watersheds with interconnected ponds.
- Hydraflow Express Extension for AutoCAD® Civil 3D® provides a collection of powerful calculators that solve everyday hydraulics and hydrology problems for culverts, channels, inlets, hydrology and weirs.



## Better Coordination

AutoCAD Civil 3D software enables your entire team to work from the same consistent, up-to-date model so they stay co-ordinated throughout all phases of the project, from survey to construction documentation. By providing a scalable approach to data management and team coordination, Civil 3D addresses the needs of any organisation, regardless of size or organisational structure.

### Data Shortcuts and References

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. For example, if a surveyor creates the existing ground surface, engineers and designers can connect to that data in parallel to conduct design tasks such as parcel layout or road design. Annotation can also be generated from the data shortcuts or directly through an xref to help ensure that production draughting remains in sync.

### Advanced Data Management

For companies looking for more advanced data management for their civil engineering workflow, the addition of Autodesk® Vault technology, included with Civil 3D, enhances the data shortcut functionality with advanced change management, version control, user permissions and archive control.

# Better Documentation

Creating and delivering construction documentation is the final step for most civil engineering projects. It is also one of the most time-consuming, error-prone phases of a project.

## Draughting Styles and Standards

Civil 3D provides an extensive library of country-specific CAD styles to control virtually every aspect of drawing display. Colours, linetypes, contour increments, labelling and much more are fully controlled by styles. Civil 3D also provides a framework for customising your own styles and standards to match the needs of your organisation.

## Production Draughting

Automatically generate production plans such as fully annotated section sheets, profiles, grading plans and more. Most important, draughting can be generated across multiple drawings by using xrefs and data shortcuts. The result is a workflow that enables production sheets to use a single instance of the model. And if the model changes, you can quickly synchronise all production sheets to reflect the update.

## Plan Production

Civil 3D includes a comprehensive tool for the layout of plan and profile sheets. Fully integrated with the AutoCAD Sheet Set Manager, the Plans Production wizard automates the layout of sheets and matchlines along alignments, and generates plan and profile sheets based on the layout. The finished product is a series of drawing sheets ready for final annotation and plotting.

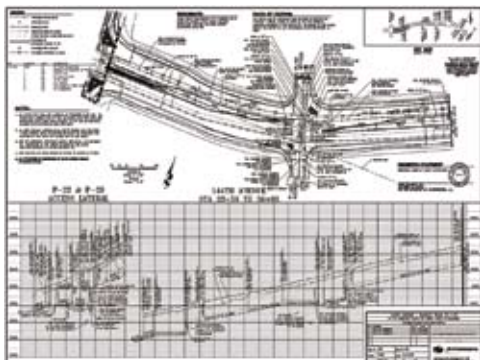
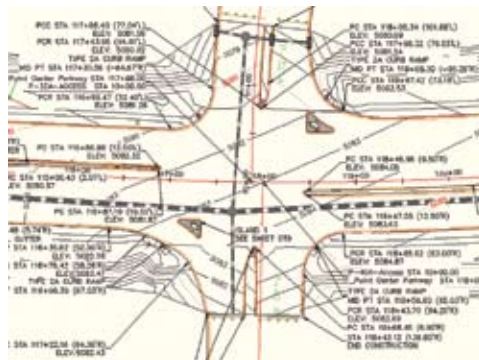


Image courtesy of JR Engineering

## Annotation

Civil 3D annotation is derived directly from design objects, through external references, and updates automatically when the design changes. It also automatically responds to changes in drawing scale and view orientation so if you rotate or change the plot scale within different viewports, all labels update instantly.



Data provided by JR Engineering

## Reporting

Civil 3D provides flexible, real-time and extensible report generation directly in the software. And because the data is derived directly from the model, reports update dynamically, providing quick feedback as design changes are made.

## Map Books

Designed for use with the Sheet Set Manager, the map books feature lays out sheets across your entire project while generating key maps and legends for your entire sheet set. This capability is ideal for laying out utility maps, grading plans or even cross-section sheets.

## Design Review

Today, the engineering process from design through construction is more complex than ever. Design review often involves team members who are not CAD software users, yet who are vital to the project. Publishing to DWF™ format helps overcome these challenges by extending design review, digitally, to the entire team.

Being able to change views instantly really eases the work process. In addition, you are able to show plans and prerequisites to your customers in a very defined and obvious way. Recently I held a meeting with a customer where we added a car park right into the 3D model. It is that easy.

—Peter Asteberg  
Project Manager  
Vägverket Konsult

## Visualisation

Most civil engineering projects require you to deliver presentations to review boards and funding agencies. But preparing those presentations can be time-consuming and disconnected from the design process. Civil 3D provides integrated tools for developing 3D visualisations directly from the model. You can even publish to Google Earth to quickly demonstrate how designs fit into the surrounding landscape.



Image courtesy of Tibi Architects and RDV Systems

AutoCAD Civil 3D makes designing much faster. We set a couple of in-house styles and build one computer model. Everything is matched automatically. Compared to other tools we can make alternative designs and make changes much faster. Only Autodesk offers this technology.

—Jan de Boer  
Project Manager  
Grontmij

**Autodesk Ltd.**

1 Meadow Gate Avenue  
Farnborough Business Park  
Farnborough  
Hampshire GU14 6FG  
United Kingdom

**United Kingdom**

Phone 0800 917 7766  
[www.autodesk.co.uk](http://www.autodesk.co.uk)

**Ireland**

Phone 1850 930 165

**Autodesk BV**

Postbus 8651  
3009 AR Rotterdam  
The Netherlands  
[www.autodesk.nl](http://www.autodesk.nl)

**Autodesk AB**

Box 14261  
SE-400 20 Gothenburg  
Sweden

**Sweden**

Phone 020 35 11 00  
[info@autodesk.se](mailto:info@autodesk.se)  
[www.autodesk.se](http://www.autodesk.se)

**Norway**

Phone 800 102 24  
[info@autodesk.no](mailto:info@autodesk.no)  
[www.autodesk.no](http://www.autodesk.no)

**Denmark**

Phone 80 88 12 20  
[info@autodesk.dk](mailto:info@autodesk.dk)  
[www.autodesk.dk](http://www.autodesk.dk)

**Finland**

Phone 08001 14680  
[info@autodesk.fi](mailto:info@autodesk.fi)  
[www.autodesk.fi](http://www.autodesk.fi)

**Other countries**

Phone +46(0)31 726 00 00  
Fax +46(0)31 726 00 26  
[infonordic@autodesk.com](mailto:infonordic@autodesk.com)  
[www.autodesk.co.uk](http://www.autodesk.co.uk)

**Learn More or Purchase**

Access specialists worldwide who can provide product expertise, a deep understanding of your industry and value that extends beyond your software purchase. To purchase AutoCAD Civil 3D software, contact an Autodesk Premier Solutions Provider or Autodesk Authorised Reseller. To locate the reseller nearest you, visit [www.autodesk.co.uk/reseller](http://www.autodesk.co.uk/reseller).

To learn more about AutoCAD Civil 3D, visit [www.autodesk.co.uk/civil3d](http://www.autodesk.co.uk/civil3d).

**Autodesk Services and Support**

Accelerate return on investment and optimise productivity with innovative purchase methods, companion products, consulting services, support and training from Autodesk and Autodesk authorised partners. Designed to get you up to speed and keep you ahead of the competition, these tools help you make the most of your software purchase—no matter what industry you are in. To learn more, visit [www.autodesk.co.uk/support](http://www.autodesk.co.uk/support).

**Autodesk Subscription**

Get the benefits of increased productivity, predictable budgeting and simplified licence 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, and you get exclusive licence terms available only to subscription members. A range of community resources, including web support direct from Autodesk technical experts, self-paced training and e-Learning, help extend your skills and make Autodesk Subscription the best way to optimise your investment. To learn more, visit [www.autodesk.co.uk/subscription](http://www.autodesk.co.uk/subscription).

[www.bsa.org](http://www.bsa.org)



**Autodesk®**

Autodesk, AutoCAD, Civil 3D and DWF are registered trademarks or trademarks of Autodesk, Inc., in the USA and/or other countries. All other brand names, product names or trademarks belong to their respective holders. Autodesk reserves the right to alter product offerings and specifications at any time without notice, and is not responsible for typographical or graphical errors that may appear in this document.

© 2008 Autodesk, Inc. All rights reserved. 00000000000118234