Readme for Civil Site Design for Civil 3D, AutoCAD and BricsCAD

V18.01

This readme contains important information regarding the installation and use of Civil Site Design versions as described above.

Civil Site Design for Civil 3D is available for:

- Multiple AutoCAD Civil 3D based releases:
  - AutoCAD Civil 3D 2012 to AutoCAD Civil 3D 2018

Civil Site Design for AutoCAD is available for:

- Multiple AutoCAD based releases:
  - AutoCAD 2012 to AutoCAD 2018
  - All AutoCAD derivatives (eg: AutoCAD Civil 3D, AutoCAD Map 3D) release versions 2012 to 2018
- BricsCAD V16 (64bit install)
- BricsCAD V17 (64bit install)

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Installation Instructions

You do not need to uninstall any previous versions of Civil Site Design. This installation will install over the top of any previous CSD installation.

If you are installing from Civil Site Design V17 or earlier, this version of the software will require an update to your license.

If moving from V17 or earlier to V18, download the installation guide and software, and obtain your V18 license keys directly from the CSS Subscription Portal:
http://www.civilsurveysolutions.com.au/index.php/support-and-services/subscription/civil-survey-solutions-subscription

If moving from V18.00 to V18.01, there is no licensing change.

New and Improved Features

This build includes all new and improved features from V18.00..

Supported platforms now also include BricsCAD V17. It is CRITICAL that users first download and install V17.1.19 or later version of BricsCAD before installing Civil Site Design.

Utilisation of Hardware Acceleration

- By default, the software now applies hardware accelearation and the full performance of the graphics card for graphical windows (Model Viewer, Vertical Grading Editor, Cross Section, etc).
- This is controlled in the file ARDInitialise.ini (search in the C:\ProgramData\CSS\ directory and sub-directories). The following entries are added:
  - Accel=1 (this uses the graphics card for rendering)
  - Antialiasing=1 (this improves text display on the VGE and other graphical windows)
  When they are set to 1, they are applied.

Model Viewer and Combined Surfaces

- The graphics engine has been updated to reduce graphics degradation, improve image rendering, and increase speed and performance.
- A new command has been added (currently it available by typing arduv7AJEBCombinedSurfaceSettings at the command line only). This command speeds up the computation of multiple inter-related combined surfaces, with users being able to establish the order of computation of combined surfaces

Roads

- Text on the Vertical Grading Editor now applies anti-aliasing and utilises hardware acceleration via your graphics card, so redraw performance is improved.
- Shared Strings now come with the Templates from the source drawing
    - When a String is shared via the Civil Site Design Data Share command, the share folder now includes the local Templates used by the shared String. When the String is read into another drawing, it contains its own list of Templates inherited from the Source drawing.
    - This means that users no longer need to ensure that matching Templates are available in all source and receiving drawings when a Share is performed.
- If a Shared path is missing (so data was read from a folder that no longer exists) the user will be prompted to select the new data share location. This enables folder changes post sharing.
- When Build Models is used and a model is created that is linked to Auto Model, only Road, Kerb, Cul-de-sac, Knuckle and Roundabout Strings are automatically included in the built model. As new roads are created or kerb returns adjusted, the Built Model will update. Any grading strings or general strings (including draped strings) will not be automatically included in the built model. Previously a form would display for the user to repeatedly assign strings to the built models.

Resolved Issues

Model Viewer

- When Combined Surface or Satellite surface is created, the Surface Manager can now be used to create boundaries, add breaklines, etc and rebuild these surfaces. Previously, pressing Rebuild in Surface Manager for a Combined Surface or Satellite Surface would remove the source surface data

Roads

- Grading models will now render more consistently in Model Viewer. Previously, external bends were modelled using a generic code (XXL) making it difficult to apply rendering.

Pipes

- Fixed a critical issue with the Pipe Flows for Civil Site Design pipe networks. Pipe flows were being added twice (duplicating the flow values). This build addresses that fault and restores calculations to match the V17 results.
- DRAINS Catchments
    - If a DRAINS catchment was added after a network was created, the CSD flows were not added to the network automatically – Create/Update Network had to be run. These flows are now automatically included in the flow calculations for the network
- DRAINS Exchange
    - An issue could occur where the first-time import of the Civil Site Design file into DRAINS would result in one or more pipes not being imported. Simply redoing the import would resolve this, however this bug has been fixed and on first import all pipes will be included.
    - Adjusted overflow routes so that, on first creation, the Velocity in drains is toggled to be ‘Set by DRAINS’ and the safe depths are set to the default

values in DRAINS. Additionally, the velocity and safe depth/velocity fields will be exported back to DRAINS without change, once DRAINS has assigned the value and exported back to Civil Site Design
Note: A DRAINS software update may be required in order to ensure that overflow routes don't initially report ???? on them (if that happens, you can edit the data and put a space at the end of one of the invert level fields and click OK to update DRAINS so it is satisfied with the data)

- DRAINS Overflows
  - There was a problem assigning DRAINS overflow templates when multiple pit bypasses were assigned to a pit. This issue is resolved.
- An issue with pits 'forgetting' their pit rotations (and setting to horizontal) upon running Create/Update Network has been addressed. Default pit rotation will be to the next pipe leading to the outlet.

Readme for Civil Site Design for Civil 3D, AutoCAD and BricsCAD

V18.00

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- Multiple AutoCAD based releases:
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- BricsCAD V16 (64bit install)
- BricsCAD V17 (64bit install)

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Installation Instructions

You do not need to uninstall any previous versions of Civil Site Design. This installation will install over the top of any previous CSD installation.

This version of the software will require an update to your license – from a V17 license to a V18 license.

You can obtain your V18 license keys, and obtain Home Use Licenses, directly from the CSS Subscription Portal:
http://www.civilsurveysolutions.com.au/index.php/support-and-services/subscription/civil-survey-solutions-subscription

The licensing system has been updated.

Network installs require install of an UPDATED LICENSE MANAGER on the server to administer the V18 license. Refer to the Installation Guide for instructions on installing and administering the new licensing

Licensing Changes

A new licensing form has been implemented for end users with the following enhancements:

-
- Display of your license status (Evaluation, Permanent, Rental)
- Display of your license type (Standalone, Network)
- Display of the platform for install
- Ability to Return a License (Standalone customers). This will return the license back to our servers and enable re-issue of that license on another computer

The **License Activation** command in General > Utilities > License Activation will display the current license status.

This form allows users to activate licenses, deactivate (return) licenses, and connect to a network server license.

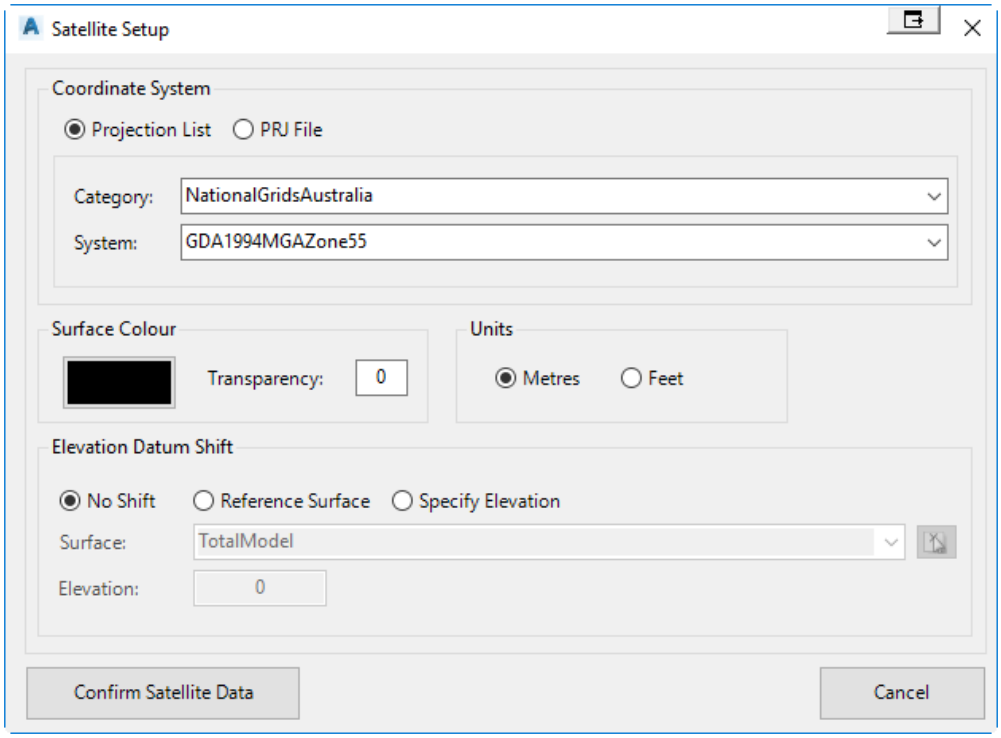
New and Improved Features

This build includes all new and improved features from V17.014.

Supported platforms now also include BricsCAD V17. It is CRITICAL that users first download and install V17.1.19 or later version of BricsCAD before installing Civil Site Design V17.015.

Model Viewer

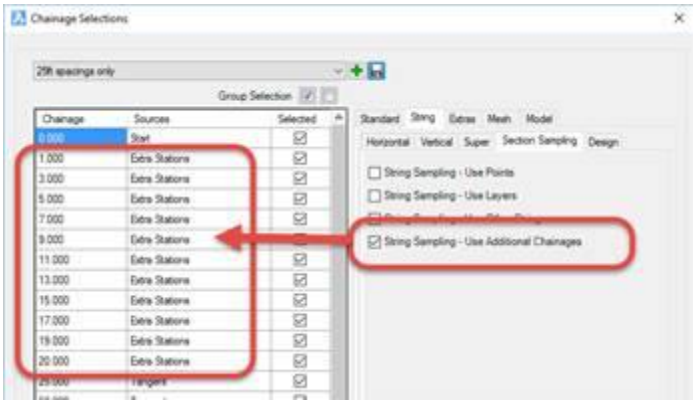
- A projection list has been added as an option to use instead of the PRJ files (these have different transformation methods pending the coordinate system selected). It is recommended that the new projection lists are used when specifying a coordinate system. Use the PRJ option if the coordinate system does not exist.



- Cache base surface option added in the Viewer Settings. This triangulates the base surface once only, to enhance speed. Base surface trimming is disabled in this mode.
- Users now have the option to save/open in the 'Toggle Display' form. This allows users to save a display state (different surface models turned on/off) and load the display in at any time. This option will have a lot of benefits when using the 'Combined Surface' command and it is required to update one of these surfaces.

Roads

- The Section Manager list now included Add Extra Sampling sections added to the road (string). To be included, the extra sampling must be ticked on for display in the VGE

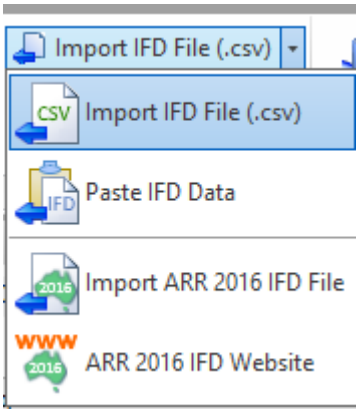


Labels

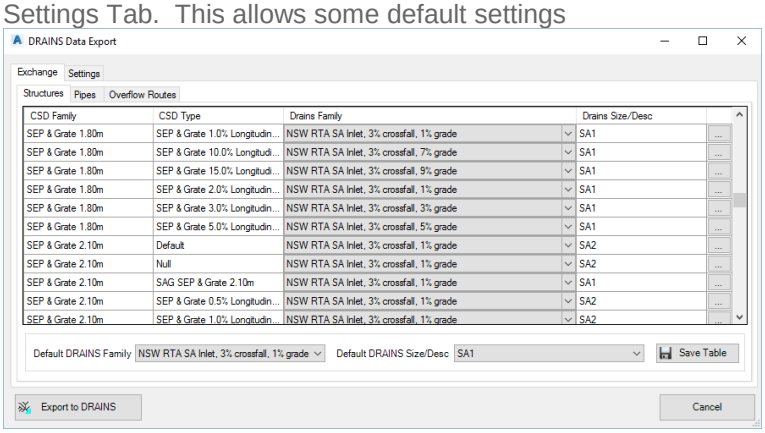
- You can now copy text elements in a label style
-  A new Chainage (Station)/Offset label can be applied to CSD alignments. This label gets its bearing from the alignment and can report chainage (station), offset and surface elevations
    - Station/Offset labels can have a Text1 and Text2 field added – these are direct user input fields in the Offset Labels form.
-  Labels can now support 10 user editable fields – a new command Edit User Input Fields will populate a form to enable user type in for all edit fields
-  A 2 point surface label function has been added. Users can now pick two points to report average slope. A default style named Surface – Slope 2 Point… has been included as a starting point.

Pipes

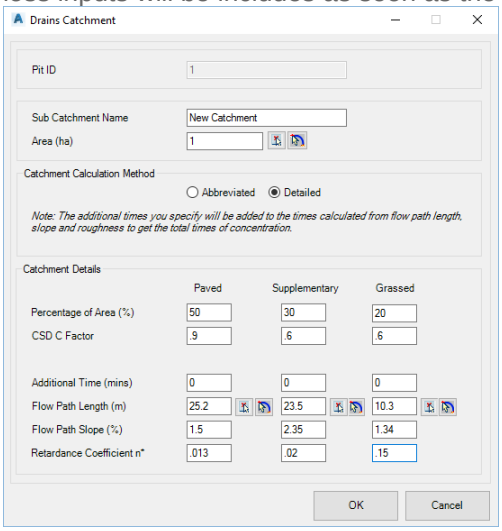
- ARR 2016 rainfall data can now be imported into the project using the *Import ARR 2016 IFD* command. We have also supplied users with a direct link to the ARR 2016 IFD Website to attain this data.
- All international users can now import IFD data (via a CSV file) using the *new Import IFD (.csv)* command.



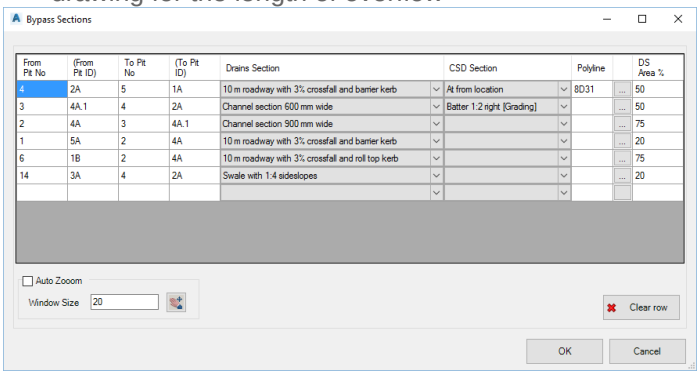
- DRAINS Exchange Improvements
  - The software will locate the DRAINS Default Database and use the available pipes, pits and overflow routes to improve efficiency of mapping data between Civil Site Design and DRAINS
  - A new Export form has been developed:
    - Lookup Tables tab
      - Pits tab. Lists the Civil Site Design pits and allows picklist assignment of DRAINS pits (using the DRAINS Default Database). You can aslo set a Default for any pits that aren't mapped. This auto populates the DrainPits.txt file
      - Pipes tab. Lists the Civil Site Design pipes and allows picklist assignment of DRAINS pipes (using the DRAINS Default Database). You can also set a Default for any pipes that aren't mapped. This auto populates the DrainPipes.txt file
      - Overflow tab. This lists all Pit Bypasses and allows assignment of DRAINS overflow routes, as well as assigning a percentage of catchment flow to the route
    - Settings Tab. This allows some default settings



  - A dedicated DRAINS catchment can now be created and allows direct input matching the ILSAX inputs for catchments. The new continuing-loss/initial-loss inputs will be includes as soon as the import is supported by DRAINS.

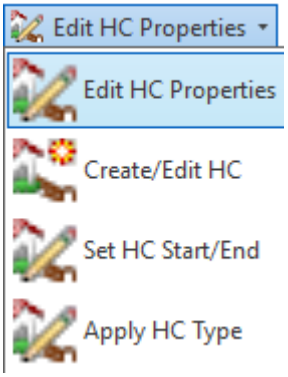


- A new DRAINS Overflows command has been added to allow users to assign DRAINS information to be transferred as overflow routes:
  - Overflow route template
  - Overflow route length using a polyline in the drawing
  - Percentage of catchment flow to the route and using a polyline in the drawing for the length of overflow



- During Import, new DRAINS pits and pipes can be included in Civil Site Design – new pipes and pits can be created upon reading in the DRAINS data. A form will display for selecting to include the pit - pipes connected to two pits will be included. Following this process, run the Redraw Networks command to update display. Use Create/Update Network command to include these in the Civil Site Design pipe network.

- A new command has been added that allows users to arrange the plot order of networks.
- Create/Edit house connection command has been added that allows user to create and update house connections.
- A new command has been added that allows user to edit the lot number, area, offset and connection type of the house connection.
- Users now have the option to override the start/end elevations of a house connection.



- The new Set Pit Rotation command allows users to define a rotation for any specified pit.

USA Profile Plotting

USA Profile Plotting has been revamped to enhance how labelling is applied to the design profile in profile views. Improvements:

- Created a dedicated form for adding random station/elevation labels
- Enhanced the profile annotation form
  - You can now add different geometry types and choose the Label Style to apply
  - You can omit any label geometry via user selection of a Section List (not including vertical curve labels)
- Added a viewport option to show a model viewport above or below the profile view

Resolved Issues

Model Viewer

- When line-marking ranges are added, they are now automatically sorted in the line-marking regions list based on the starting chainage/station. The form size has been increased to assist with selection of line-marking files.

Roads

- If the Multi Setout command was run, and following this a String was deleted, it would still display in the Multi Setout command when next run. This has been corrected.
- Particular formatting in the GENIO file format would result in the updated GENIO Export tool failing – this issue has been addressed.
- The new GENIO export command expected the designer to first update the Model being used in the output, resulting in only partial code information being transferred to the output – the referred model is now updated as part of the command.
- Updating elevations in the Grid View form (from the Vertical Grading Editor, this button  , or the Vertical Grading tab on the Create/Edit Grading form) did not update the surface in the drawing. Edits made in this form now update the surface/s automatically.
- Simplified the Create Draped Strings command – single button click to create all draped strings
- Added an auto update button on the Create/Edit Grading form > Vertical Grading tab. Previously editing the items in the grid view did not update the model in the drawing as changes were made. This can be switched off by the user and use a manual surface update
- Grading form now has a Volumes tab (useful for AutoCAD and BricsCAD platform users) with a streamlined output

Pipes

- House Connections
  - Internal Drop controls have been reinstated – these were non-functional in the previous release
  - If the minimum slope defined for the House connection is greater than the minimum slope specified for the pipe used by the House Connection, the House Connection will adopt the minimum slope specification for the house connection by setting pipe invert levels on each pipe ('locking' the levels).
- Particular formatting in the GENIO file format would result in the updated GENIO Export tool failing – this issue has been addressed.
- The new GENIO export command expected the designer to first update the Model being used in the output, resulting in only partial code information being transferred to the outut – the referred model is now updated as part of the command.
- Renamed the Civil 3D XML Conversion command to 'Edit Conversion Tables' to better reflect the command outcome – users pick the conversion file to edit from a radio button list.
- Retired the dedicated Watercom DRAINS conversion files (pit and pipe) as they can be accessed from the above command and have less importance with the changes to the DRAINS export command.

Surfaces (AutoCAD and BricsCAD users)

- Volume Surfaces form has been revamped to streamline output of volume information to file (on-screen volume output view able to be copied across to any text based editor) and quickly update.

Profile View Plotting (USA)

- Fixed issue with the VC labelling for side roads, where a PVI was close to the start/end of a Vertical Curve
- Fixed issue with detecting and changing presentation for reverse curve locations

- Created dedicated command for adding random station/elevation labels
- Enhanced the profile annotation form to allow for override of label geometry (via user selection of a section list)
- Fixed some issues with dynamics for the labels (grip edits)

Known Issues

Surfaces

- Volume Surface Output (AutoCAD and BricsCAD only)
    - Using the Create/Update button in the Surface Manager on a surface created via the Volume Report command will result in the elevation data being removed. If this occurs, simple redo the Volume surface output – it will then build using all the data you've added in Surface Manager
- Combined Surface Output command
    - Using the Create/Update button in the Surface Manager on a surface created via the Combined Surface command will result in the elevation data being removed. If this occurs, simple redo the Combined Surface output – it will then build using all the data you've added in Surface Manager

Roads

- Cross Section Plots
    - Update when VGE Closes
        - You need to click on the Update Intersection Match Ins  button to refresh the output plots – close does not auto refresh output plots
- Grading
    - You must apply a template to the grading if you expect boundaries to be applied
    - Boundaries (and trimming) is not correctly applied if you include curve/s in your source grading CL polyline, and the offsets to codes extend beyond the radial point of the curve/s
    - Grading is designed to do overlap correction between adjoining lines – it will not resolve overlap where intermediate lines/curves would need to be ignored in order to find an intercept point.
- Intelligent Sections
    - Ticking on the box to emulate the batter conditions for both cut and fill situations will not work for fill situations, except where the user has set a negative value for the minimum value on any conditional elements. This is 'as designed' however the toggle name is misleading. If the toggle is on, only the one conditional table is applied for both cut and fill situations.
- Renaming Roads
    - When renaming a Road or other string, Model Builder must be closed in order to register the change.

Pipes

- Add Catchment – Compute Tc
    - When compute Tc is ticked on and the user selects a polyline from the drawing (or draws one) the slope value will report NaN instead of a value if the drawn polyline goes outside the Design surface. This affects AutoCAD and BricsCAD customers only – user type in off slope is required
- Create Services - Polylines outside the Existing and Design surfaces
    - If polylines are snapped onto or outside the surface and used to create services, expect errors with the elevations assigned to any pipes/pits outside the surface.

Pipes+ Menu Removed

The Pipes+ beta menu has been removed for this release – recent changes have disabled many previously working aspects (such as water supply functionality). We hope to return the Pipes+ menu into the beta environment with the next software update.

Readme for Civil Site Design for Civil 3D, AutoCAD and BricsCAD

V17.014

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Civil Site Design for Civil 3D is available for:

- Multiple AutoCAD Civil 3D based releases:
  - AutoCAD Civil 3D 2012 to AutoCAD Civil 3D 2017

Civil Site Design for AutoCAD is available for:

- Multiple AutoCAD based releases:
  - AutoCAD 2012 to AutoCAD 2017
  - All AutoCAD derivatives (eg: AutoCAD Civil 3D, AutoCAD Map 3D) release versions 2012 to 2016
- BricsCAD V16 (32bit and 64bit installs)
- **BricsCAD V17 (64bit version only)**

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Installation Instructions

You do not need to uninstall any previous versions of Civil Site Design. This installation will install over the top of any previous CSD installation.

This version of the software will require an update to your license – from a V16 license to a V17 license.

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New and Improved Features

This build includes all new and improved features from V17.01.

Supported platforms now also includes BricsCAD V17. It is CRITICAL that users first download and install V17.1.17-1 or later version of BricsCAD before installing Civil Site Design V17.014.
Bricsys fixed an issue that was resulting in Civil Site Design crashing out BricsCAD.

Model Viewer Satellite Image Support

- When running the **Satellite Surface**  or **Satellite Image**  Command the following Map options are now available at the time of selecting the image area:
  - Google Maps
  - Nearmaps
  - Hybrid maps (maps including road names)

  Some of these map options will require authentication/api keys to authorise your use of the service. The Viewer Settings allow for inclusion of the necessary authorisations
  Previously only Bing maps were able to be used.
- To improve speed on larger base surfaces, a Fast Refresh option has been introduced. When ticked on the software will not re-triangulate to trim out the Base

surface for the design and other surfaces included. A transparency can be applied to the surface so that the design surface/s is/are visible when located below the base surface.
Fast redraw can be enabled in the Viewer Settings

Resolved Issues

Model Viewer

- When linemarking ranges are added, they are now automatically sorted in the linemarking regions list based on the starting chainage/station. The form size has been increased to assist with selection of linemarking files.

Roads

- If the Multi Setout command was run, and following this a String was deleted, it would still display in the Multi Setout command when next run. This has been corrected.
- Particular formatting in the GENIO file format would result in the updated GENIO Export tool failing – this issue has been addressed.

Known Issues

Surfaces

- Volume Surface Output (AutoCAD and BricsCAD only)
    - Using the Create/Update button in the Surface Manager on a surface created via the Volume Report command will result in the elevation data being removed. If this occurs, simple redo the Volume surface output – it will then build using all the data you've added in Surface Manager
- Combined Surface Output command
    - Using the Create/Update button in the Surface Manager on a surface created via the Combined Surface command will result in the elevation data being removed. If this occurs, simple redo the Combined Surface output – it will then build using all the data you've added in Surface Manager

Roads

- Cross Section Plots
    - Update when VGE Closes
        - You need to click on the Update Intersection Match Ins  button to refresh the output plots – close does not auto refresh output plots
- Grading
    - You must apply a template to the grading if you expect boundaries to be applied
    - Boundaries (and trimming) is not correctly applied if you include curve/s in your source grading CL polyline, and the offsets to codes extend beyond the radial point of the curve/s
    - Grading is designed to do overlap correction between adjoining lines – it will not resolve overlap where intermediate lines/curves would need to be ignored in order to find an intercept point.
- Intelligent Sections
    - Ticking on the box to emulate the batter conditions for both cut and fill situations will not work for fill situations, except where the user has set a negative value for the minimum value on any conditional elements. This is 'as designed' however the toggle name is misleading. If the toggle is on, only the one conditional table is applied for both cut and fill situations.
- Section Volumes
    - An inaccuracy in volumes could result when the subgrade was extended to surface. This issue has been resolved
- Renaming Roads

- When renaming a Road or other string, Model Builder must be closed in order to register the change.

Pipes

- Add Catchment – Compute Tc
  - When compute Tc is ticked on and the user selects a polyline from the drawing (or draws one) the slope value will report NaN instead of a value if the drawn polyline goes outside the Design surface. This affects AutoCAD and BricsCAD customers only – user type in off slope is required
- Create Services - Polylines outside the Existing and Design surfaces
  - If polylines are snapped onto or outside the surface and used to create services, expect errors with the elevations assigned to any pipes/pits outside the surface.

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New and Improved Features

- Changing the Text Scale (DPI scale) using Windows is now better handled in the forms. Previously the text size would change however the form buttons would not. There is now auto scaling occurring across the forms so that buttons shouldn't disappear when text scaling is increased from 100%.

Site Tab

- The Grading Tab has been renamed SITE and includes new features
- Satellite Surface  Command
  - Allows type in and navigation to any location worldwide (via Google Earth) and extraction of both terrain data and geo-referenced image inserted in the drawing (in BricsCAD, the image is saved to file with an accompanying georeference file and must be inserted using the image insert command)
- Satellite Image  command
  - Allows type in and navigation to any location worldwide (via Google Earth) and extraction of a geo-referenced image inserted in the drawing.
  - In BricsCAD, the image is saved to file with an accompanying georeference file and must be inserted using the image insert command)
- Point Cloud  command
  - Allows x,y,z data to be imported into Model Viewer for review, edting and surface creation.
- Import Objects  command
  - Object data, sight distance lines and linemarking created/added in Model Viewer can be inserted in the drawing
    - Object data is inserted as a user definable block in the drawing – users pick the block associated with named objects in Model Viewer
    - Sight distance lines are drawn on separate layers for visible and obstructed sight lines
    - Linemarking is drawn as closed polylines with solid fill hatch

Model Viewer

- HECRAS 2D Export
  - Exports the surface data from Model Viewer as a GEOTIFF (.tif) able to be imported into HECRAS 5.0 or later as a Terrain
- HECRAS 2D Import
  - Imports the 2D flow results from HECRAS 5.0 or later into Model Viewer for 3D visualisation and animation of the flow/flood results
- Civil Site Design added as Additional Surfaces
  - If a Civil Site Design surface is added under Additional Surfaces in Toggle Display, the selected Material Style now applies to the surface
    Note: This only applies for AutoCAD 2016 and 2017, Civil 3D 2016 and 2017 and BricsCAD V16 and V17

Alignments

- When the Edit Alignment form is open, grips display on the vertices of the created alignment. These can be moved graphically by clicking on the grips and selecting a new location, updating the alignment geometry.

Grading

- A directional arrow is displayed on the grading polyline selected, to clearly show the direction of the polyline
- You can now reverse the direction of the polyline used for grading, before creating the grading string
- You can now click on the Pick icon next to the Elevation and add an elevation by selecting a location in the drawing.

Pipes

- An error could be generated in the Reports, because some setting/s were incomplete. This error message no longer displays.

- When adding a catchment area and drawing/selecting the polyline for the Catchment Flow Length, the Flow Slope would report as NaN – this has been corrected and the slope is now reported from the surface
- New command can by typed in **ARDUV7ARRANGENETWORKS** to set the order of plotting multiple networks.

Roads

- Enhanced GENIO Export  command
  - This command allows for the user to select what codes to export from each string, set code name adjustments and assign 6D or 10D controls to any string in the output
- When a surface has been created to represent the existing ground and the name is not the same as that referred to in the Active Drawing Settings, a message is regularly displayed advising that the default surface is missing, or that it's been created with dummy coordinates. This message has been suppressed. If only one surface exists in the drawing when a command is run, that surface is automatically set as the default sampled surface
- The Compute Superelevation form has been revamped to include an image describing the different inputs in the form.
- CAD Output Command Outputs
  - Users can now tick on to output to CAD objects
    - Height Shading
    - Slope Arrows
    - Slope Shading
    - Direction Shading

    Note: Currently the option for surface outputs MUST be set to All Surfaces for this output to apply. The output will only apply to currently displayed surface analysis.
- The Model Builder select form has been redesigned to make it clear that there are two options for creation
  - From scratch (user sets all strings to include and all trims)
  - Linked to Auto Model (road network objects are automatically included and road trimming assigned. These update when Build Model is opened, if new roads are added or kerb geometry changes, etc)
  - Edit

    Note: Translation for the new terms is only applied for Civil 3D 2016 and 2017, AutoCAD 2016 and 2017 and BricsCAD V16 and V17
- New command added to delete roundabouts: arduv7DeleteRBWithMissingAlignments
  - This command deletes any roundabout with a missing alignment for the central island. If there are other things missing (eg: kerbs, roads, outr island) the user can choose to delete these strings as well.
- BETA command – arduv7AssignAllTemplatesToRoad
  - This command will generate cross section outputs for every template created. Process:
    - Create a dummy Road String, with 1m spacings
    - Start the above command and select this road – each template will be applied at 1m spacings
    - Plot the outputs

Data Share

- A new 'Multi' select button in the Read Share form allows users to select a folder containing multiple shared folders from multiple drawings, instead of having to pick individual folders representing each project.

Resolved Issues

- A translation file is used by the software to modify some text in the forms. Previously this translation file was disabled.
  Note: This only applies for AutoCAD 2016 and 2017, Civil 3D 2016 and 2017 and BricsCAD V16 and V17

Alignments

- When using the Create Alignment command, the command could fail to utilise the geometry if there were lots of vertices, close together. The algorithm has been improved to handle these cases.

Grading

- Improvements have been made to reduce the instances of the polyline geometry falling 'out of sync' with the grading string geometry. An issue was found with the Plot to Layout command in Cross Section Plots triggering the loss of synchronisation.
- Users can type the command **arduv7ResetEventFlags** if synchronisation is lost between the polyline and the associated grading string

Pipes

- An error could be generated in the Reports, because some setting/s were incomplete. This error message no longer displays.
- When adding a catchment area and drawing/selecting the polyline for the Catchment Flow Length, the Flow Slope would report as NaN – this has been corrected and the slope is now reported from the surface
- Pipe networks with a trailing space (blank) would not correctly save
- The 3D Output command would not output 3D polylines for a network that contained spaces in the network name.
- The Auto Services command was adding the cover and pipe diameter to the Obvert selection method when a 3D polyline was used.

Roads

- When a surface has been created to represent the existing ground and the name is not the same as that referred to in the Active Drawing Settings, a message is regularly displayed advising that the default surface is missing, or that it's been created with dummy coordinates. This message has been suppressed. If only one surface exists in the drawing when a command is run, that surface is automatically set as the default sampled surface
- Renaming a Road String did not transfer changes into Model Builder. This has been addressed.
- An issue could occur with propogation of a kerb check report in Notepad when a Road was edited in the Vertical Grading Editor. This resulted from rebuilding of Built Model/s that are linked to Auto Model. This notepad display has been suppressed.
- Vertical Grading Editor
  - Design Data Form
    - Copy Codes command has been optimised to improve speed when editing. Because of the updating process, having multiple, and particularly cross referenced, Copy Codes could result in slow edit response in the Vertical Grading Editor when IP's were being adjusted.
  - Grid Editor Form
    - An error message could display when editing values in the grid editor if a cross section window was also displayed. The Vertical Grading Editor not update until the refresh button was pressed. This has been addressed.
- Kerb Returns
  - When a kerb return was deleted, it would not be fully removed from the system until the corresponding alignment was deleted. This issue has been resolved.
- Model Builder

- Grading Strings were not being fully referenced into Model Builder – they were not displaying when they were included/excluded and codes couldn't be edited for the grading strings. This has been addressed – grading strings can be included in Model Builder equally with other strings.
- Deleting a Built Model now deletes the display of that model from the drawing
- Previously, Model Builder was not including a sample to trim the Side Road at the start/end of kerb strings.
- Auto Model wasn't properly represented in Model Builder when roundabouts were included. The kerb RDUM code was continuing to be included on the kerb strings, which overlapped the roundabout strings.

- Intelligent Sections
  - The Test Intercept control was not being correctly applied in all geometry conditions
  -
- Long Section Plots
  - The Hatch command could fail if the design surface did not extend for the full length of the alignment
- Cross Section Plots
  - If explode was ticked on, some objects in the plotted output were not refreshing when replots were applied.
  - Very close section spacing (within .005) could cause the Section Manager to generate an error.
  - Trailing decimals were being incorrectly truncated. The 'zero' values were being removed, rather than rounding.
  - CSD Built Models
    - If the trimming of the CSD Built Model (in the Configure form) was not set to use the cross section extents, then nothing would display for the sections of the CSD Built Model.
    - Improved the pickup of codes set to plot, for presentation of offsets. Previously, the selected codes didn't always match the code list configured in the CSB Built Surface form
  - When referencing a CSD Built Model or design surface, the first and last sections often would not display fully.
  - When Boundary by Layer is used and the layer is outside the surface, the label is no longer drawn at a y value of zero on the sections.
- Plan Linework updating
  - When a Grading String was included in model Builder, the plan linework didn't always update fully when the model was edited.
- Cul-de-sacs
  - Previously, the LIP code couldn't be used to create a cul-de-sac if EB code was used for the default intersection connection code
  - Running Update All Roads could result in part of the cul-de-sac to not display in certain projects
- Superelevation
  - Users now select a superelevation table when they start the superelevation command and this populates the list of Maximum Superelevation values available. Previously, the list of maximum superelevation options did not necessarily correlate with the available values in the superelevation table selected
  - A save and load style option has been added to superelevation to make it easier to pre-set the design controls to apply
- Auto Model Datum
  - Some improvements have been made to handling subgrade when the bottom of the kerb subgrade is higher or lower than the bottom of the pavement subgrade. There is still a (smaller) distance with a sloped subgrade section to 'transition' across the vertical step between the pavement and kerb bottom
- Set Road Defaults
  - In the Set Road Defaults form the default left and right batters were set to zero (resulting in no batters). This has been changed back to 1 (as it was previously)
  - Two redundant columns have been removed from the form.
    Note: This only applies for AutoCAD 2016 and 2017, Civil 3D 2016 and 2017 and BricsCAD V16 and V17

- Roundabouts
    - If any data for a roundabout is missing (eg: the central island is deleted) then the roundabout is not loaded into Auto Model (previously the Roads could continue to be trimmed even after a roundabout was deleted)
    - You cannot delete a Road String that is being used by a Roundabout – you will need to delete the Roundabout first using the command arduv7DeleteRBWithMissingAlignments

Data Share

- Previously, the surface display in the source drawing would be replicated to the receiving drawing. This resulted in the inability to separately position contour labels in the receiving drawing. This problem has been resolved.
- When Sync Share was run, any new objects created in the source drawing would be includes in the share across to the receiving drawing. This behaviour has been addressed – new items are added by running the Add Share command only.

Known Issues

Surfaces

- Volume Surface Output (AutoCAD and BricsCAD only)
    - Using the Create/Update button in the Surface Manager on a surface created via the Volume Report command will result in the elevation data being removed. If this occurs, simple redo the Volume surface output – it will then build using all the data you've added in Surface Manager
- Combined Surface Output command
    - Using the Create/Update button in the Surface Manager on a surface created via the Combined Surface command will result in the elevation data being removed. If this occurs, simple redo the Combined Surface output – it will then build using all the data you've added in Surface Manager

Roads

- Cross Section Plots
    - Update when VGE Closes
        - You need to click on the Update Intersection Match Ins  button to refresh the output plots – close does not auto refresh output plots
- Grading
    - You must apply a template to the grading if you expect boundaries to be applied
    - Boundaries (and trimming) is not correctly applied if you include curve/s in your source grading CL polyline, and the offsets to codes extend beyond the radial point of the curve/s
    - Grading is designed to do overlap correction between adjoining lines – it will not resolve overlap where intermediate lines/curves would need to be ignored in order to find an intercept point.
- Intelligent Sections
    - Ticking on the box to emulate the batter conditions for both cut and fill situations will not work for fill situations, except where the user has set a negative value for the minimum value on any conditional elements. This is 'as designed' however the toggle name is misleading. If the toggle is on, only the one conditional table is applied for both cut and fill situations.
- Section Volumes
    - An inaccuracy in volumes could result when the subgrade was extended to surface. This issue has been resolved
- Renaming Roads
    - When renaming a Road or other string, Model Builder must be closed in order to register the change.

Pipes

- Add Catchment – Compute Tc
    - When compute Tc is ticked on and the user selects a polyline from the drawing (or draws one) the slope value will report NaN instead of a value if the drawn polyline goes outside the Design surface. This affects AutoCAD and BricsCAD customers only – user type in off slope is required
- Create Services - Polylines outside the Existing and Design surfaces
    - If polylines are snapped onto or outside the surface and used to create services, expect errors with the elevations assigned to any pipes/pits outside the surface.

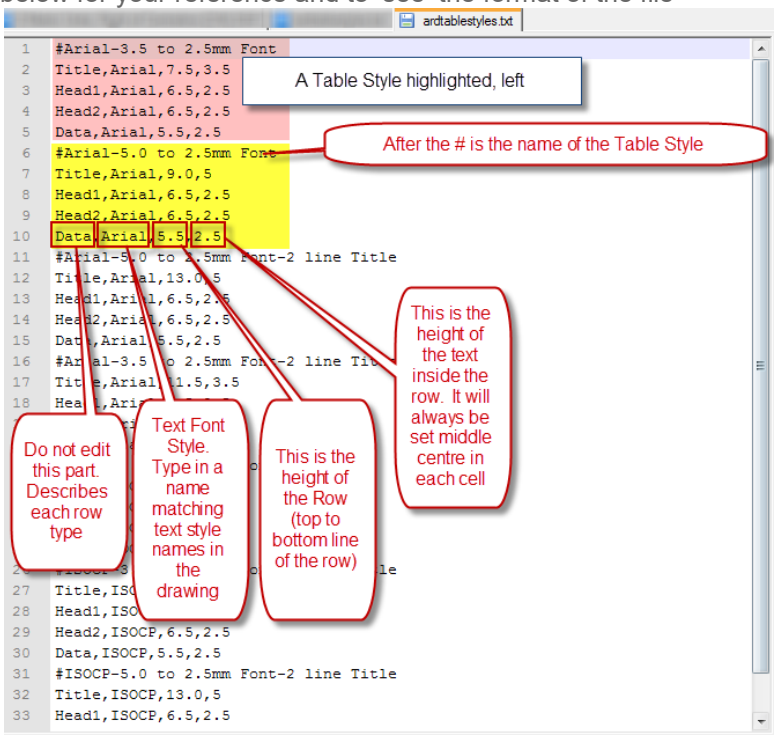
Tables (BricsCAD Customers Only)

- If you cannot create BricsCAD tables from the Civil Site Design table output commands, there is an option to revert to standard CAD entity tables. The process is:
    - Open the Active Drawing Settings > Styles Tab
    - Tick on the option 'Draw Tables as Lines and Text'

When you select table output, the pick list of available table styles will change to match with the CSD Table Styles you have set up.

About Editing the BricsCAD Table output – CSD Table Styles

Users can edit the table output by opening the file **ardtablestyles.txt** in the **CSD Settings** folder – this table sets out the text font, text heights (and row heights) for the title, headings and data rows. Edit in Notepad as required: A view of a sample file is below for your reference and to 'see' the format of the file



Important information - .NET Framework 3.5.1

If you're experiencing issues running Civil Site Design (i.e. you receive an *'Unknown command*' whilst running the software), ensure that Microsoft .NET Framework 3.5.1 is turned on. You can turn on Microsoft .NET Framework 3.5.1 by following these steps...

1. Type 'Windows Features' in the Windows Start menu
2. Run 'Turn Windows Features on or off'.
3. Ensure Microsoft .NET Framework 3.5.1 is ticked on.