



Release Notes
MAGNET Office
June 21, 2023

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Magnet Office V8 Release Notes

The following new additions/revisions have been made to Magnet Office v8.0.

Please take time to read the release notes. They contain information about the following:

- New Features
- Feature Enhancements
- Issue Resolutions

Information

System Requirements:

Operating System

Microsoft Windows 11 (64-bit version)

Microsoft Windows 10 (64-bit version)

Processor Speed

2GHz Core2 processor or higher

RAM

2GB RAM or more recommended

Memory

Local hard drive space of 2GB or higher recommended

Computer Resolution

1280x1024 display resolution

Internet Connectivity

Can be required by some functionality.

MAGNET Office software version 8 is now available with a refreshed user interface and has been reconfigured to simplify the product configuration. The new configuration includes a base product and two add-on modules. Existing and renewing users will automatically be transitioned to the new configurations upon license activation.

The base functionality includes powerful CAD tools and data prep options to support Topcon 3D-MC machine control solutions. Modules also include specific features to support surveying and advanced site preparation tasks.

Additional modules

Survey

Includes specific tool sets for survey and drafting.

Includes MAGNET Tools product for processing and adjustment of GNSS, optical total station, and digital level data.

Includes basic design tool sets

Site Prep

Advanced road, trench, corridor, intersection design tools as well as material takeoff and specialized road resurfacing tool sets.

Timesaving 2D to 3D elevate routines, raster to vector tool set for preparation of a constructible model for machine control.

Takeoff functionality to calculate and visualize material and labor estimates

Road Resurfacing functionality for SmoothRide projects and more.

Add-on Products

MAGNET Tools - survey data processing and adjustment toolset for GNSS, optical total station, and digital level data.

Topcon Project – project management software for large-scale infrastructure construction and earthwork projects with additional tools for mass haul planning.

Unless otherwise noted, new features, improvements and resolutions are included in the Magnet Office base configuration. Items that are included in specific modules have a module designation at the end of the description. Module designations:

- **(Survey)** – Survey module
-
- **(Site Prep)** – Site Prep module

Key Features

Sitelink3D v2

Users can now connect to and work with data with Topcon 3DMC data through the Sitelink3D web portal. New functionality and an improved user interface are now included.

Added **Task** support for 3DMC and Sitelink V2. A connection to Sitelink3D is required to create, edit, and/or archive tasks. Tasks are not stored locally and reside remotely in Sitelink3D.

Added new Sitelink3D **Region** panel

- Added option to create a region from a DTM
- Creating “New” Region, now allows for manual creation of a region in the survey view.
- Updated panel to display local and cloud (Sitelink3D) regions in separate grids.
- Region display can now be turned on/off from the grid list.
- Upload to Sitelink3D is now available in the Local grid area.
- Regions now supported for functions using boundaries for calculations.

Added new **Device Data** panel allowing for point data collected by the device to be listed, downloaded and/or directly imported into Magnet Office job.

A new **Design Set Panel** has been added.

- Updated panel to display both local and cloud (Sitelink3D) design sets in separate grids.
- Added specific tools sets for Local and Cloud (Sitelink3D) grids
- Added specific context menus for each grid
- Tree list updated to support multiple selection and expanded uses.

File Manager is new and improved combining upload and download options.

- New tool set with dual data grids for upload/download of local and cloud (Sitelink3D) data.

Added **Height Map Report** which allows for the creation and generation of a height map report in Sitelink3D.

- Import resulting new report data (*.ply, *.xyz files)
- Download resulting report data as file (*.ply, *.xyz)
- Archive, download, import existing report data files

Metadata support added. Use the Cloud Data panel to create different meta data types in Sitelink3D for use with 3DMC and Haul Truck app. Create and edit Materials, Sequence types, Delays, Operators etc.

Magnet Office 2D (Survey View) and 3D Views updated to display machines connected to Sitelink3D site. Requires Machine panel to be open in office. 2D machine shown in 2D view and 3D Machine are shown in 3D. Machine movement shown in both views. Requires office project to be connected to Sitelink3D.

Point Cloud

Import/Export of point cloud data has been added to Magnet Office. A new point cloud panel located in the Surface ribbon contains a toolset for importing/exporting and working with point cloud data. The point cloud data is saved externally in a sub-folder with the same name as the project (*.mjo). This sub-folder is located in the saved file directory.

New cloud groups and management tools

Import formats

- LAS/LAZ (*.las, *.laz)
- *.ply
- *.e57
- *.clr
- *.pts
- *.xyz
- Esri Ascii (*.asc)
- *.dem
- Autodesk (*.rcp, *.rcs)
- *.mjf
- *.mxl
- Note: Import of supported point cloud data available from Point Cloud panel

Export formats

- *.las, laz, ply, pts, xyz, mjf, mxl
- Note: Export of supported point cloud data available from Point Cloud panel.

Create Points allows for selection of point cloud points to write to the Magnet database

Create DTM from point cloud data allows users to quickly create DTMs without creating points.

Create Boundary from selected point cloud data provides quick creation of boundaries directly from different selection sets of a point cloud set or the entire data set.

Supports the import of point classifications when contained in the cloud data. Users can control the display of the classification sets for easy data recognition.

Display settings for point clouds include

- Color by Elevation included in context menu/Settings
- Color by Classification included in context menu/Settings

New Point Cloud snap added to snap settings, for creation of linework from point cloud.

Delete Cloud Points allows for removing areas of the cloud data when necessary. Users can choose to update the original cloud or create a new cloud when deleting point cloud points. [\(Survey, Site Prep\)](#)

Ground Filter options for reducing point cloud noise include preset and advanced parameters. Preset parameters for Rural and Urban data sets are provided for quick removal of data noise. The preset parameters also provide a good starting point for when advanced filter parameters are required. [\(Survey, Site Prep\)](#)

Decimate Cloud enables the user to reduce the number of cloud points without affecting accuracy. [\(Survey, Site Prep\)](#)

Georeference Cloud allows for positional adjustments of point cloud data when required. [\(Survey, Site Prep\)](#)

Merge Clouds provides options for merging multiple clouds during or after import. [\(Survey, Site Prep\)](#)

Custom Reports

The following reports have been updated to a new report configuration workflow supporting customization of included content, order of content, and optional inclusion of images. Customization options are accessed via right mouse button click context menu in report preview.

- Surface > Compute Volume
- Inquiry > List Data
- Inquiry > Linear Distance
- Inquiry > Compare Points [\(Survey, Site Prep\)](#)
- Inquiry > Duplicate Points [\(Survey, Site Prep\)](#)
- Inquiry > Multiple Area [\(Survey, Site Prep\)](#)

Asset Design as Construction (ADAC)

The ADAC UI has been updated to provide improved workflows. [\(Survey, Site Prep\)](#)

Improved feature and project definition tools

- “New” feature now creates a new feature based on previous feature.
- “Geometry” features now support selection of the object in the survey view to get object value details.
- Assign geometric and non-geometric from text and/or point attributes

Highlight defined data toggle has been added to the UI. This allows for quick inspection of what data has been defined and the remaining data which requires definition.

User can now use Magnet Office's Data Inspector to quickly view the ADAC attributes when hovering over a data set point.

- Data Inspector updated to display point attributes
- ObjectId included in Data Inspector as "Attributes"

A new option to screen pick drawing extents added allowing for quick graphical selection of the data extents.

Cadastre Lots updated to read polygon area for TitledArea. This allows for quick correct designation of the lot.

The CoordinateSystem setting of "Is Approximate" has been updated to default to "False"

Layer Manager

A new modeless panel for creating, editing and manipulating layer display and groups. The panel supports docking, float, autohide and collapse states which allows anytime access when open.

- Supports layer property columns ON/OFF display in the panel. Configuration accessed from context menu.
- Added Statistics. Includes stats for total number of layers, layers in use, and empty layers. Statistics is accessed from the right click context menu.
- Traditional layer manager options are now contained on the context menu accessed by a right mouse button click on layer panel
- New "Select Data" option added to context menu. This allows for selection of one or more layers in the layer manager to create a selection set of the data for use with other functionality.
- A new "Highlight" toggle is located at the top of the panel. With this toggle ON, selecting a layer in the grid will highlight its contents in the survey view. When selecting data in the survey view, the corresponding layer(s) will be highlighted in the layer manager panel grid.
- Merge option updated to support creation of new layer for merging to.

String - Variable Offset

A new function, insert string by variable offset has been added. This function is in the Insert ribbon, string group. It allows for entry or selection of variable offsets from a reference line, alignment or string at user entered distances along the entity. Users can quickly create complex offset strings defining widenings and curb returns using this function to include in 3D

models. Options to insert points only and/or a string are supported. Elevation calculation options for the offset points are provided. ([Site Prep](#))

Parallel Polygon

Parallel Polygon is a new option located in the Insert Ribbon > Polygon/Polyline group. This option creates parallel polygons from existing polygons, strings, and polylines. Unclosed strings and polylines can be used to quickly create polygons for various purposes using the Close option on the dialog. When polygons are not required, this function works as an improved offset option. Options for calculation of elevations for the points created in the new object are provided. ([Site Prep](#))

IFC Support

- Import IFC format moved from File > Import to the IFC Panel
- IFC Panel is now automatically opened on import IFC file using drag and drop method.
- IFC panel Create Points tab updated to include Starting point number field
- IFC panel Create Points tab updated to include Code field for points created
- Manual Create Points updated to remain active until ended by user
- Supports multiple selection of objects using ctrl during selection
- Layers updated for easier selection for isolate and restore options

General

Import/Export

Added Import/Export support for ESRI shape files, *.shp

Import/Export Custom ASCII format updated to support RGB colors for points

Autodesk DWG format

- Export improved to support export of DTM color fill shading as an attached image. To transfer the color shading the relevant DTM must be displayed with color fill on and selected in the DTM tab of the export dialog.

Control Points

Added Carlson localization file (*.loc) import support

Coordinate Systems

Added ITRF2014 datum

Added UA_UCS-2000 datum and projections

Added NTV2 datums to installation options, supports creation of local NTV2 datums.

- Requires specification of .gsb file.

3D View now includes preset views Front, Back, Top, Bottom, Isometric NE, SE, SW, and NW. These preset views are access from the right context menu.

- General Settings dialog now opens to 3D View settings tab when opened from active 3D View.
- The 3D View is now opened as a grouped project tab and is maximized on open. The 2D/3D Split option remains unchanged.
- Added a navigation compass which is located at the bottom left of the view.

Data Inspector updated to include a new improved display window which now supports customization of data content and order and new display options:

- Point Number
- Point Notes
- Point Attributes
- Segment Slope

Prompt for Elevation in 2D view updated to include “Slope” field for calculation of next point elevation by defined slope. Requires initial point to have valid elevation.

Inquire Bearing/Distance updated to support cloud point snap.

Select Linked Points is now provided as an optional preference setting in Program Settings > Preferences and additionally as an On/Off toggle on the context menu. When on, selecting an object automatically selects its linked points.

Text Editing has been improved to include In-Place Text editing added in survey and drawing views.

Select Similar Settings updated to include “code”.

Property Manager updates

- Single point elevation adjustment
- Now lists different Area object types separately
- Object conversion updated to include option to “Retain Original Object”
- Multiple object conversion now supported

Design Groups updated to include timestamp.

Horizontal Alignment data entry improved for Japanese Custom Format.

Global and Project Survey Codes updated to include Magnet XML (*.mxi) export option.

Text Styles updated to support defining color as “bylayer”. Text entered and entity annotation using the style will adopt the defined layer color for its annotation.

Right Mouse Button Context Menu options updated for no selection and multiple object selection states.

- No selection added options
 - Insert String
 - Insert Line
 - Insert Polygon
 - Insert Point
 - Create by coordinate
 - Create by direction
 - Select Linked Points (toggle)
 - Select by
 - Isolate Layer(s)
 - Restore Layer(s)
 - Previous Selection
- with selection, copy and move options added

Road View updated to add option to add prefix/suffix to DTM name.

Program Preferences tab reorganized, and new preferences added.

- Added Duplicate Point prompt during input toggle
- Added Highlight color preference for Survey and Drawing views
- Added Reset Panels to default positions/sizes option

String > Densify Points

- updated to add toggles to apply spacing to line segments and/or arc segments of the string.
- Added new By Total Distance option for consistent spacing

Snap Settings, updated to include new Cloud Point snap.

DTM Editor

- Add Surface Points updated to include “Confirm Elev” toggle. Ctrl+E also toggles this setting on/off when editing DTM. (Survey, Site Prep)

Create Cut/Fill DTM updated to add a new flag for “Isolate Cut/Fill DTM”. When on only the newly create cut/fill DTM will be displayed. All existing DTM display settings are turned off.

Show Cut/Fill Only setting in the surface ribbon has been removed and added to the DTM Manager. When ON the shading for all CF DTMs in the job is turned on. The display settings of existing DTMs are not affected.

Duplicate Points (Survey, Site Prep)

- Updated to include option to create point with averaged coordinates and specify new point layer.
- Updated to support duplicate linked points and updating linework.

Web Map Service (WMS) improved performance. (Survey, Site Prep)

- New WMS regions (Australia, etc.) supported

Compute Volume updated to automatically include an image of the volume area in the volume report. To remove the image, right click and toggle off “visible” on the cut/fill dtm name.

Takeoff calculation has been updated to include warnings for linework and subgrade set up issues. Issues found are now highlighted red in the survey view. (Site Prep)

Notices/Issue Resolutions

A new folder by the name of the mjo file is created when the project is saved. In this folder two additional sub-folders may reside. These sub-folders are used for point clouds and 3D Views used in the office project.

Creating new projects and creating new projects now open to an individual tab.

Project Views are now placed in the project tab group. The active tab is now shaded for quick recognition.

Inquiry > Exclusion Areas updated to an individual function. Previously contained in the Multiple Areas function.

Resolved issue opening projects containing corrupt road design data. The corrupted design data was preventing opening of the project entirely. Program has been updated to display a notice of the corrupt design data and will continue to open the project, after confirmation, removing the corrupt road design. Uncorrupted data is retained.

Alignment Station/Offset display updated to remain active when commands active

Magnet Enterprise Login Icon updated to highlight when connected

File recovery corrected to retain background images

Resolved GC3 export scale factor issue. The scale factor value contained invalid characters when using with Topcon LPS (Local Position System)

Import PDF updated to resolve image quality issue after import.

Resolved issue with creation of Magnet Drawing from Magnet Tools; attributes included were not editable.

File recovery updated to correct issue with incorrect extension of cc6 being added during recovery which randomly resulted in corrupt files.

Resolved issues with Selection Cycling

- Layer Off was prompting twice for the object selection.
- Now restricted to only object types prompted for function. For example, Inquiry>Bearing/Distance restricted to points and lines, preventing the listing of polygons etc.

Resolved issue with v6.x projects containing DTMs that were no longer present when opening the project in v7.x. The program has been updated to restore these DTMs.

Resolved issue in Corridor design when using conditional cut/fill side slopes using same string name. Cut/fill pivot point determined with the conditional tie (batter) string separated at this point. The tie (batter) string is now separated at the calculated cut/fill pivot point. [\(Site Prep\)](#)

Corrected issue with cross-section re-extraction not updating intervals in the Road view in some cases.

Resolved issue in Roads view, cross-section settings not holding list of manually entered codes for plotting. [\(Survey, Site Prep\)](#)

Resolved issue with custom keyboard shortcuts when using single characters. Shortcut command was being executed during text entry. [\(Survey, Site Prep\)](#)

Create Title Block revised to support long layer names during creation [\(Survey, Site Prep\)](#)

Drawing Editor

- Newly created layers in the Survey view are now defaulted to display Off in previously created, existing, drawing views.
- Export to pdf corrected to include polygon fill.

Corrected Export to legacy 3DMC files, In3 and pt3, to use file name specified during export instead of the Magnet Office project name.

Modeler ribbon and functionality has been removed.

Sync function removed from File ribbon.

Parallel Line updated to reinstated start point as nearest to picked location along line.