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Bentley Map SELECTseries 3 - Introducing 'Data Acquisition' Tools

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Data Acquisition What is it?

- Introduced in the *SELECTseries 1* releases of the Civil Product family - InRoads, GEOPAK, MXROAD and PowerCivil as a supplement or alternative to the native versions of survey and terrain modeling tools.
- To provides a modern, user friendly, intuitive interface which allows a user to compile data from disparate sources into a coherent model to feed Design and collaboration processes.
- Dynamic and Graphically oriented import of variety of formats including:
 - Raw field survey data
 - Aerial Mapping Surface Data
 - LIDAR
 - Raster DEM
 - LDD, Caice, XML 1.2
 - In other words, data formats which are directly consumed by the design workflow.
- Production of surface and geometric models

Data Acquisition What is it?

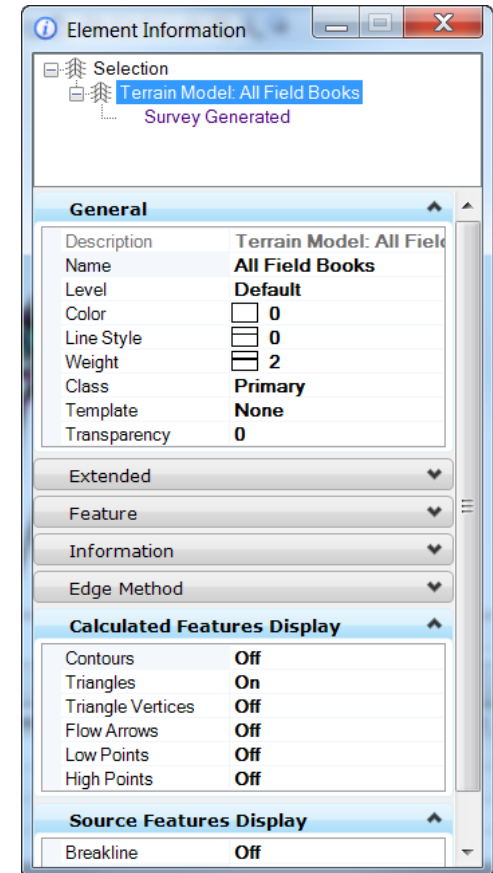
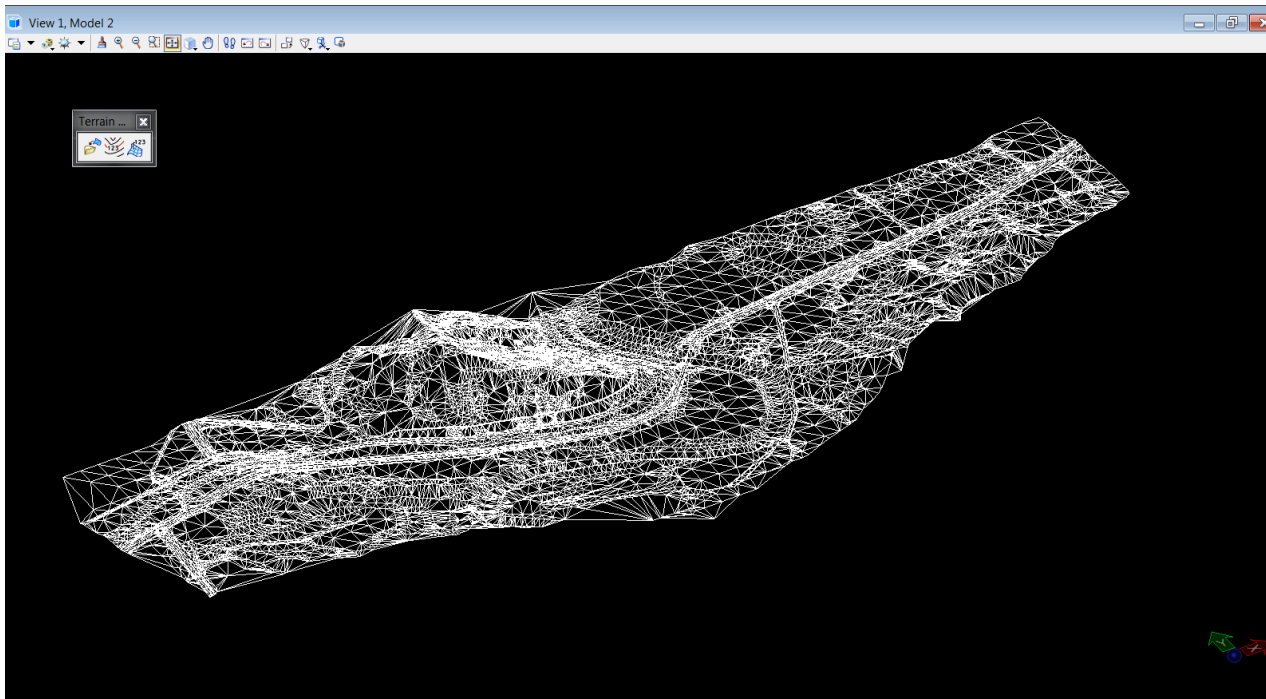
User Quote:

“I have been using Bentley products such as MicroStation, Modeler, TriForma, GeoGraphics, Descartes and Bentley Civil applications for close to 20 years.

The Data Acquisition tools blew me away. I love the tree approach and the ease of use were great. The amount of digital data and formats available are staggering. Totally impressed.”

SELECTseries 3

- Microstation gets a new element type !
 - **Terrain Model**



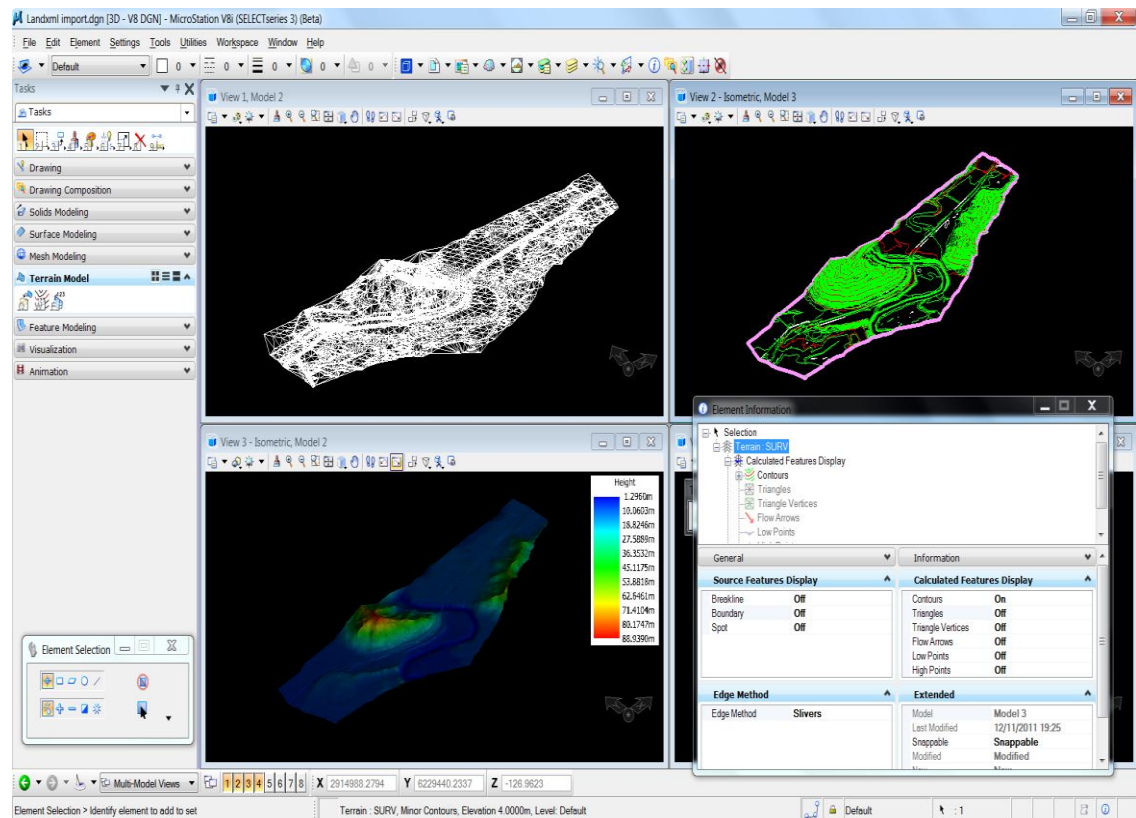
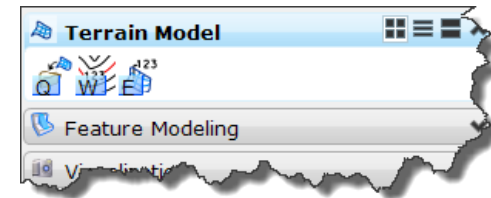
Terrain Model - What does this solve ?

- **Shared access rather than conversion and distribution**
- **Achieve CAD standards**
- **Add additional annotation**
- **Interrogation / Analysis**
- **Visualisation**

MicroStation SELECTseries 3 – Terrain Model

includes

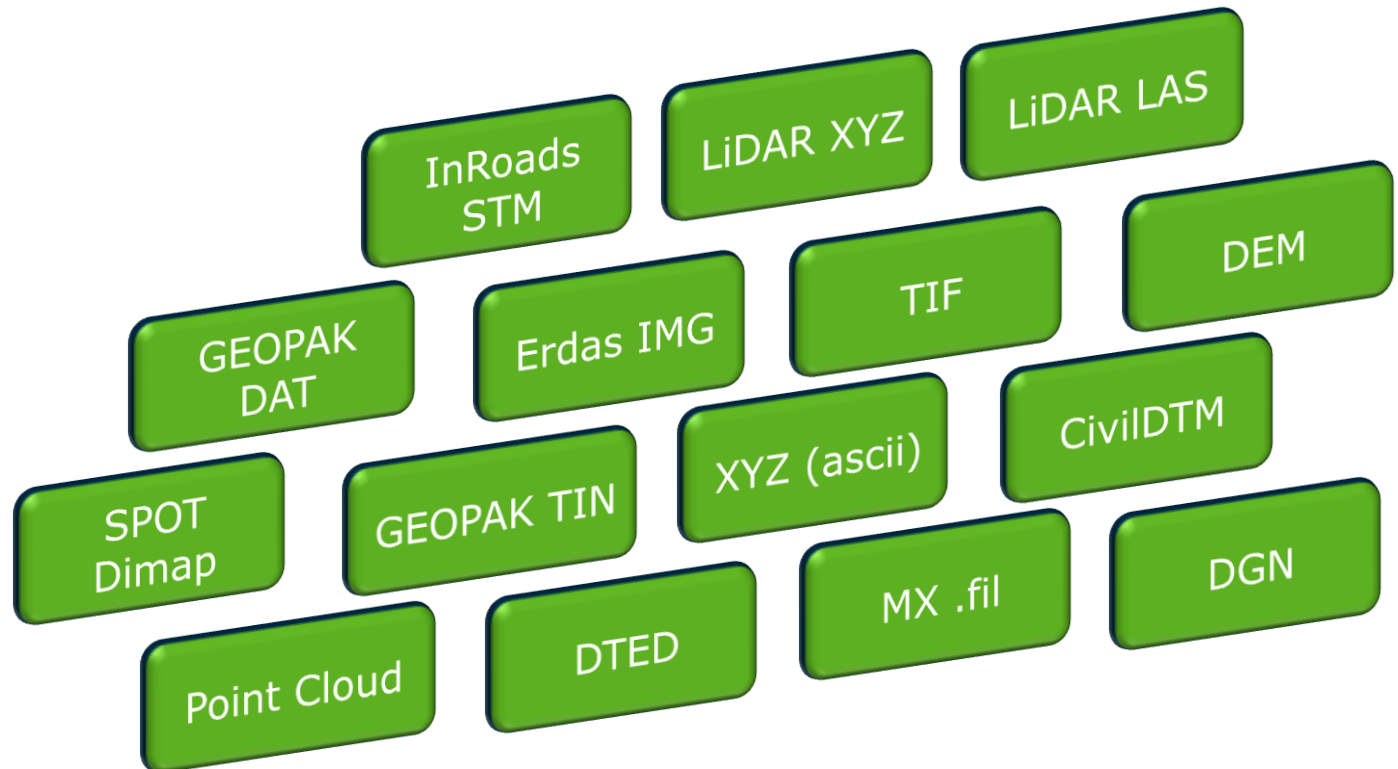
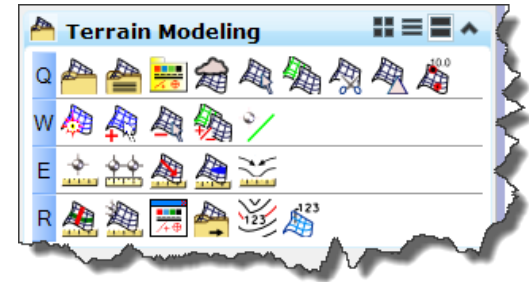
- LandXML import
- Terrain Display Themes
- Analysis Tools
- Annotation tools



MicroStation SELECTseries 3 – Terrain Model

Vertical Product enhancements

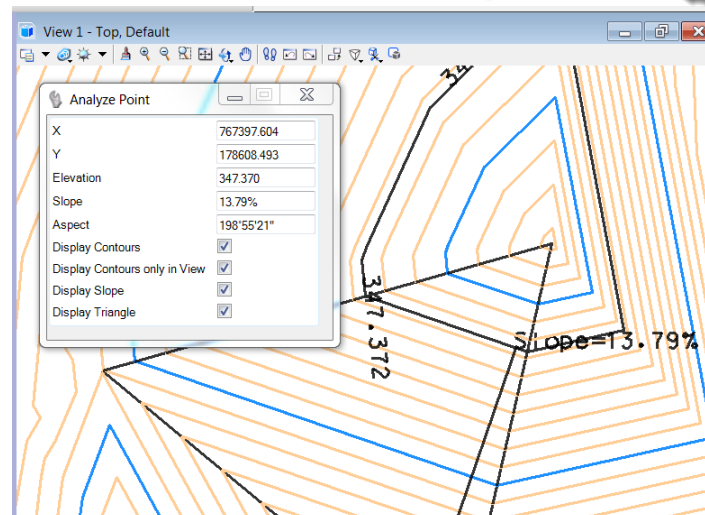
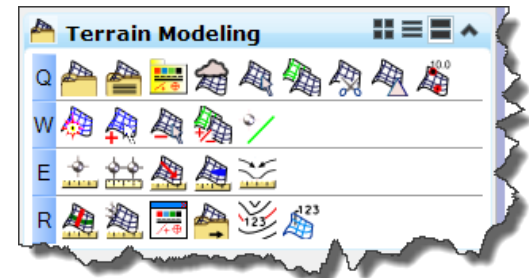
- Extensive import options
 - Binary File
 - Graphics



MicroStation SELECTseries – Terrain Model

Vertical Product enhancements

- Extended Analysis Tools
 - Volumes
 - Points
 - Trace Slopes
 - Ponds
 - Watershed
- Reporting tools
 - Duplicate Points
 - Crossing Features
- Export
 - Native Civil Products
 - LandXML

A screenshot of the 'Terrain Model Report Dialog' window. It features a table with the following data:

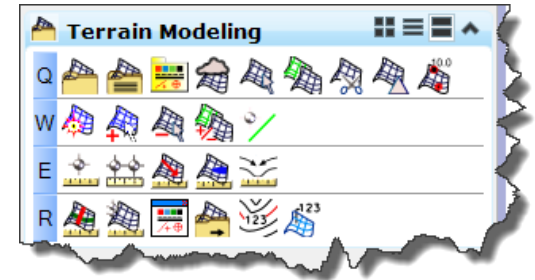
Intersection Point	Level On Feature 1	Level On Feature 2	Level Difference	Feature Type 1
767881.767, 179802.367	313.464	312.189	1.275	Breakline
767881.869, 179781.059	311.745	313.354	1.609	Breakline
767882.707, 179768.940	311.390	313.878	2.488	Breakline

SELECTseries 3 – Terrain model

- So where does this leave Data Acquisition ?

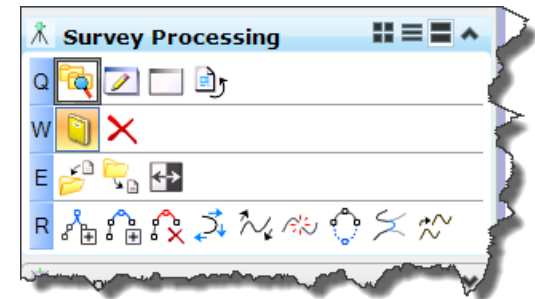
- Data Acquisition matures to become

- Terrain Modelling (Microstation plus Extended Product Capability)
- Survey



- Additional Survey Functionality added includes

- Enhanced user interface with
 - Additional tooltip information
 - Enhanced Editing capability
- More Survey Instruments including media file tagging



Demo

- Terrain Modelling
- Survey

Bentley Map SELECTseries 3

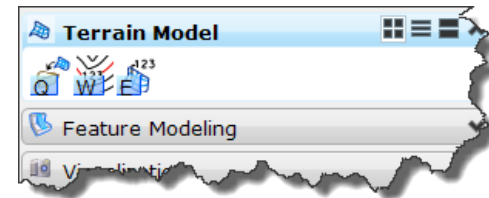
Concepts Recap

- Terrain Modelling
- Survey

MicroStation SELECTseries 3 – Terrain Model

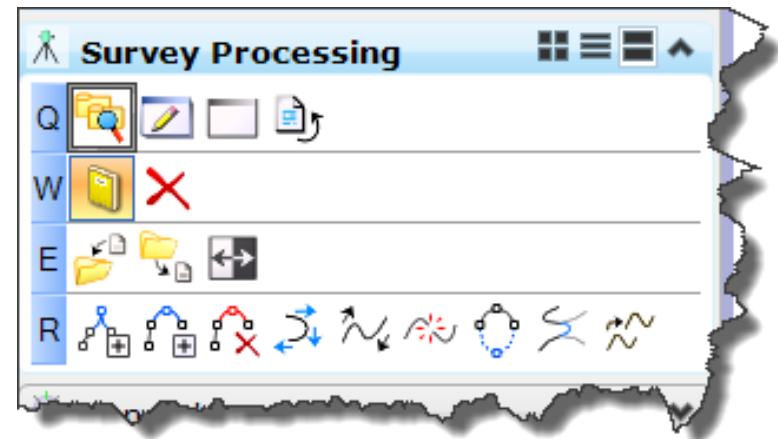
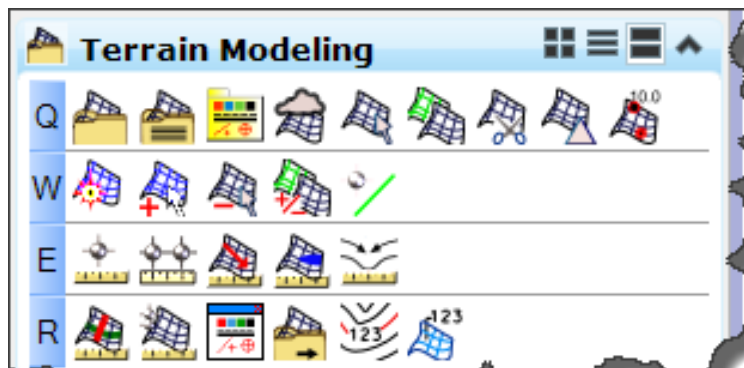
includes

- LandXML import
- Terrain Display Themes
- Analysis Tools
- Annotation tools



Accessing the Tools

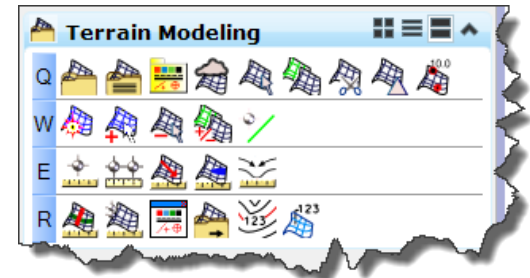
- *Task Navigation Menus*



MicroStation SELECTseries 3 – Terrain Model

Vertical Product enhancements

- Extensive import options
- Extended Analysis Tools
- Reporting Tools
- Export



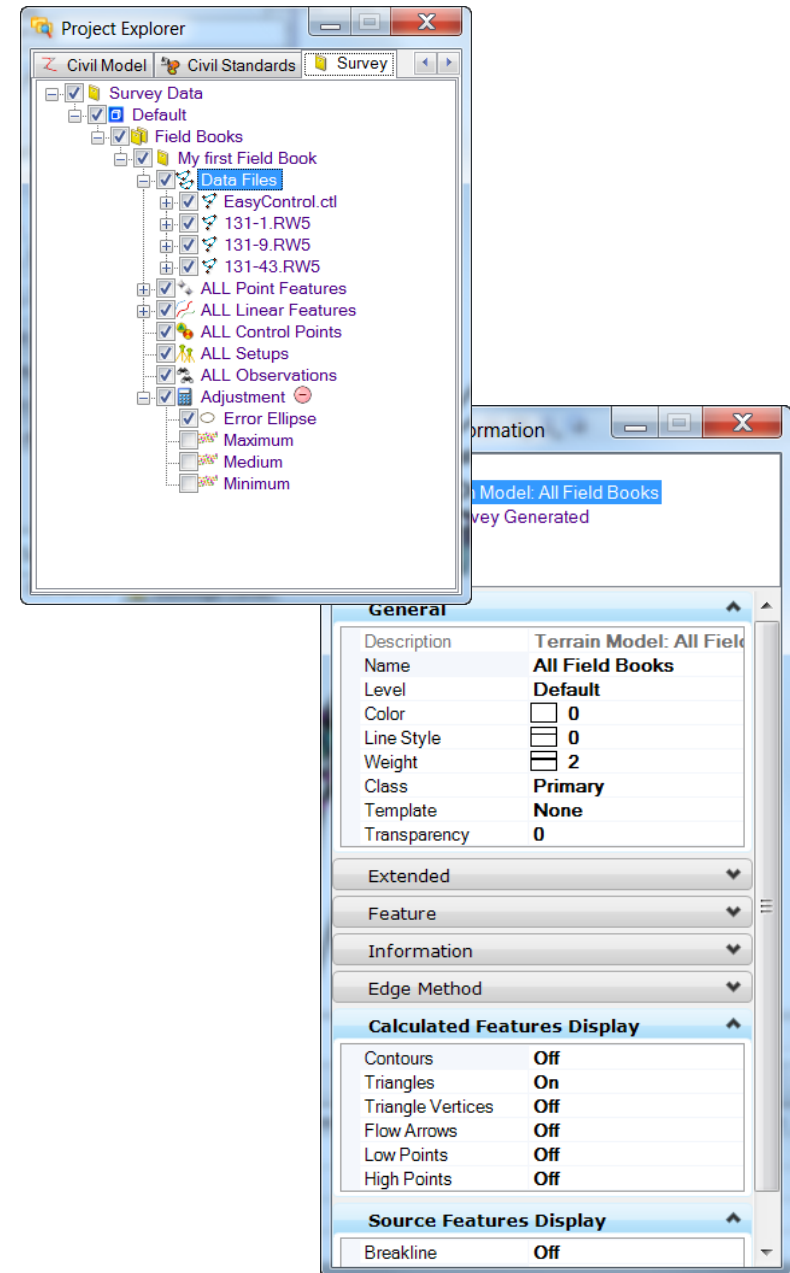
Survey

- ***User Experience***

- In place editing
- Context Toolbar
- Bulk editing via tabular listing

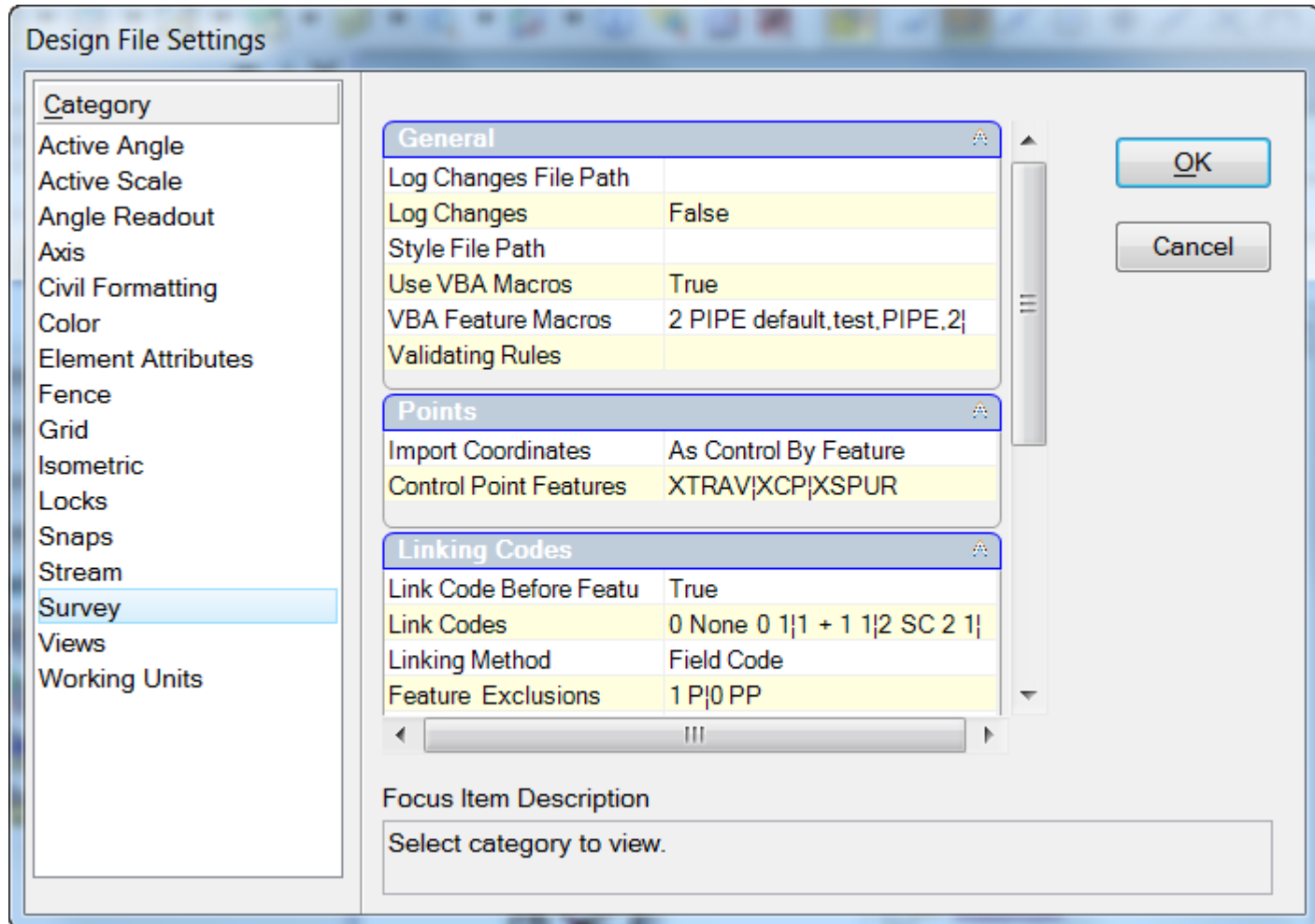
- ***DGN Data Store***

- No external files
- Dynamic Model updates
- Undo/Redo
- Design history
- File protection
- Digital signatures
- Etc.



Survey Preferences

- *MicroStation Settings > Design File*



Style File

Preserves existing investment in features from

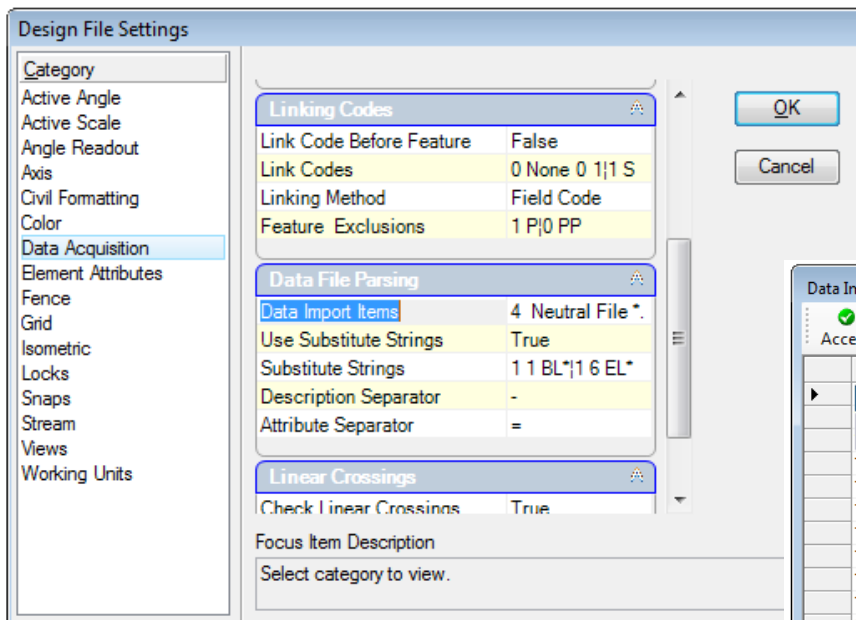
XML – generated from a GEOPAK SMD

XIN – InRoads Styles file

PSS – MX Styles file

Data Import Items

- *Provides access to a customizable list of supported data types*



The image shows the 'Data Import Items' dialog box, which displays a list of supported data types. The table below represents the data shown in the dialog:

Use	Vendor	Title	Filter	FileTypeln	FileTypeOut	Executa	Executa	FormatFj	Arg
<input checked="" type="checkbox"/>	NeutralFile	Neutral File	*.xnf	None	Neutral				
<input checked="" type="checkbox"/>	GEOPAK	Geopak Intermediate File	*.out	None	Intermediate				
<input checked="" type="checkbox"/>	InRoads	InRoads Intermediate File	*.fwd	None	Intermediate				Survey.ti
<input checked="" type="checkbox"/>	MX	MX Intermediate File	*.wrw	None	Intermediate				
<input checked="" type="checkbox"/>	LandXML	LandXML	*.xml	None	LandXML				
<input checked="" type="checkbox"/>	LandXMLAdvance	LandXML Advanced	*.xml	None	LandXML				
<input checked="" type="checkbox"/>	LeicaDBX	Leica DBX	*.xcf	None	None				
<input checked="" type="checkbox"/>	TrimbleLinkEngine	Trimble Link Engine	*.job	None	None				
<input checked="" type="checkbox"/>	FieldGenius	Field Genius	*.dbf	None	None				
<input checked="" type="checkbox"/>	CAICE Project	Caice Project	*.pt4	None	LandXML				
<input checked="" type="checkbox"/>	LandDesktopProje	Land Desktop Development	*.dfm	None	LandXML				
<input checked="" type="checkbox"/>	GEOPAK	Caice	*.kcp	RawFile	Intermediate				
<input checked="" type="checkbox"/>	GEOPAK	Caice SRV	*.srv	RawFile	Intermediate				
<input checked="" type="checkbox"/>	GEOPAK	Observation OBS	*.obs	ObsFile	Neutral				
<input checked="" type="checkbox"/>	GEOPAK	SDMS	*.prj	RawFile	Neutral				Sdms.ex
<input checked="" type="checkbox"/>	GEOPAK	SDMS Strip Tags	*.prj	RawFile	Neutral				Sdms.ex
<input checked="" type="checkbox"/>	GEOPAK	Florida Fieldbook	*.ff	RawFile	Neutral				Fftoobs.
<input checked="" type="checkbox"/>	GEOPAK	Trimble DC	*.dc	RawFile	Intermediate				
<input checked="" type="checkbox"/>	GEOPAK	Lietz-Sokkia SDR33 14Char	*.sdr	RawFile	Intermediate				
<input checked="" type="checkbox"/>	GEOPAK	Lietz-Sokkia SDR33 4Digit	*.sdr	RawFile	Intermediate				
<input checked="" type="checkbox"/>	GEOPAK	Lietz-Sokkia SDR2	*.sdr	RawFile	Intermediate				
<input checked="" type="checkbox"/>	GEOPAK	TDS 48,95.FS2	*.rw5	RawFile	Intermediate				
<input checked="" type="checkbox"/>	GEOPAK	TDS 48,95.FS2	*.cr5	CoordFile	Intermediate				

Point and Chain Editing

- **Multiple Options**
- **Automatic Surface Updating**
 - Even of merged surfaces
- **Crossing Breaklines management**

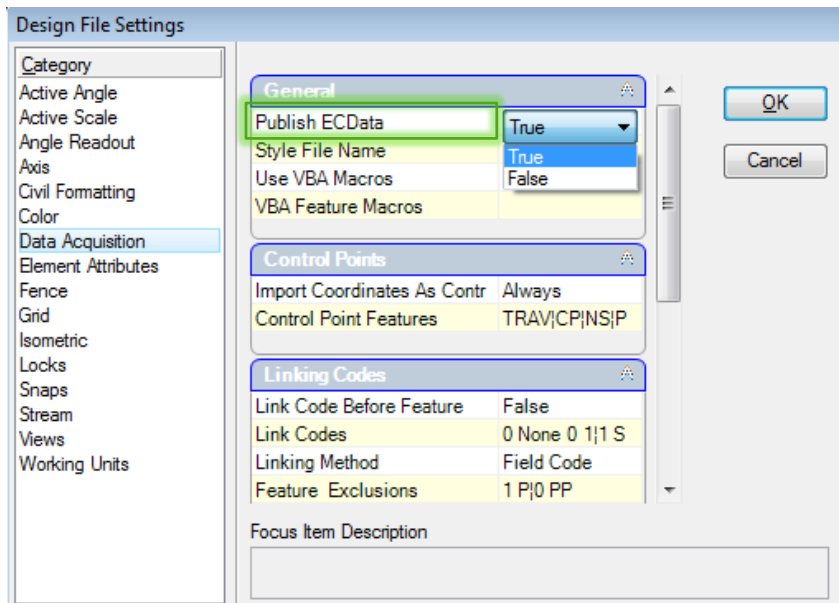
Export

- *Export Geometry (GPK, ALG, FIL, XML)*
- *Export Surfaces (TIN, DTM, MXROAD, XML)*

Miscellaneous

- ***EC Attributes***

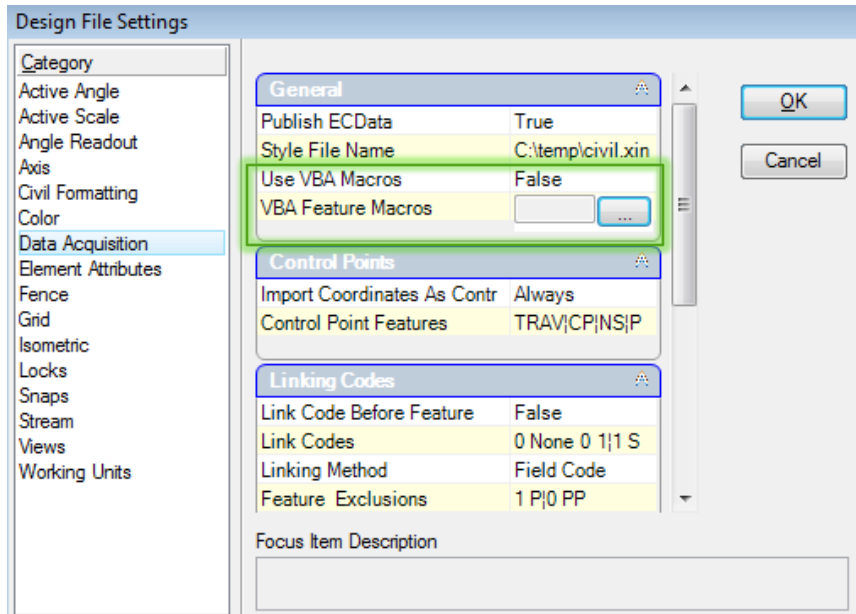
Attaches EC Attribute Data to the elements so that they can be viewed with the MicroStation or Navigator *Items Browser* without a Civil application present



Miscellaneous

- **VBA**

Data Acquisition is exposed through VBA. Therefore apps can be written and assigned to any point or linear feature.



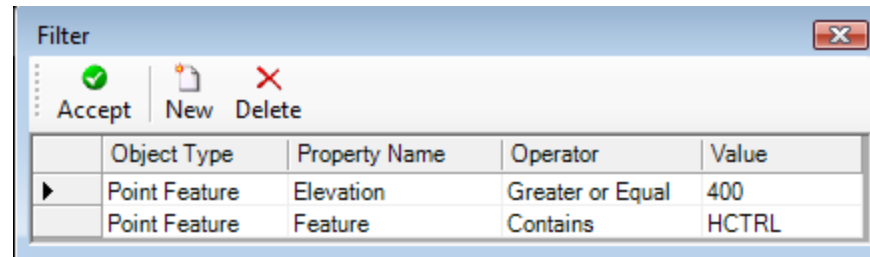
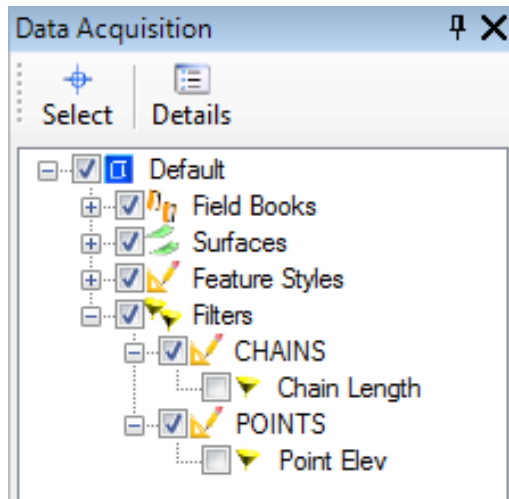
Example:

Pipe linear features can be extruded via VBA.

Miscellaneous

- **Filters**

Customized filters can be built to filter data based on user specified parameters.



Thank You!

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Are there any questions?