



Road and Site Are Now One!

Presented by: Robert Nice – Bentley Systems

Learning Objectives

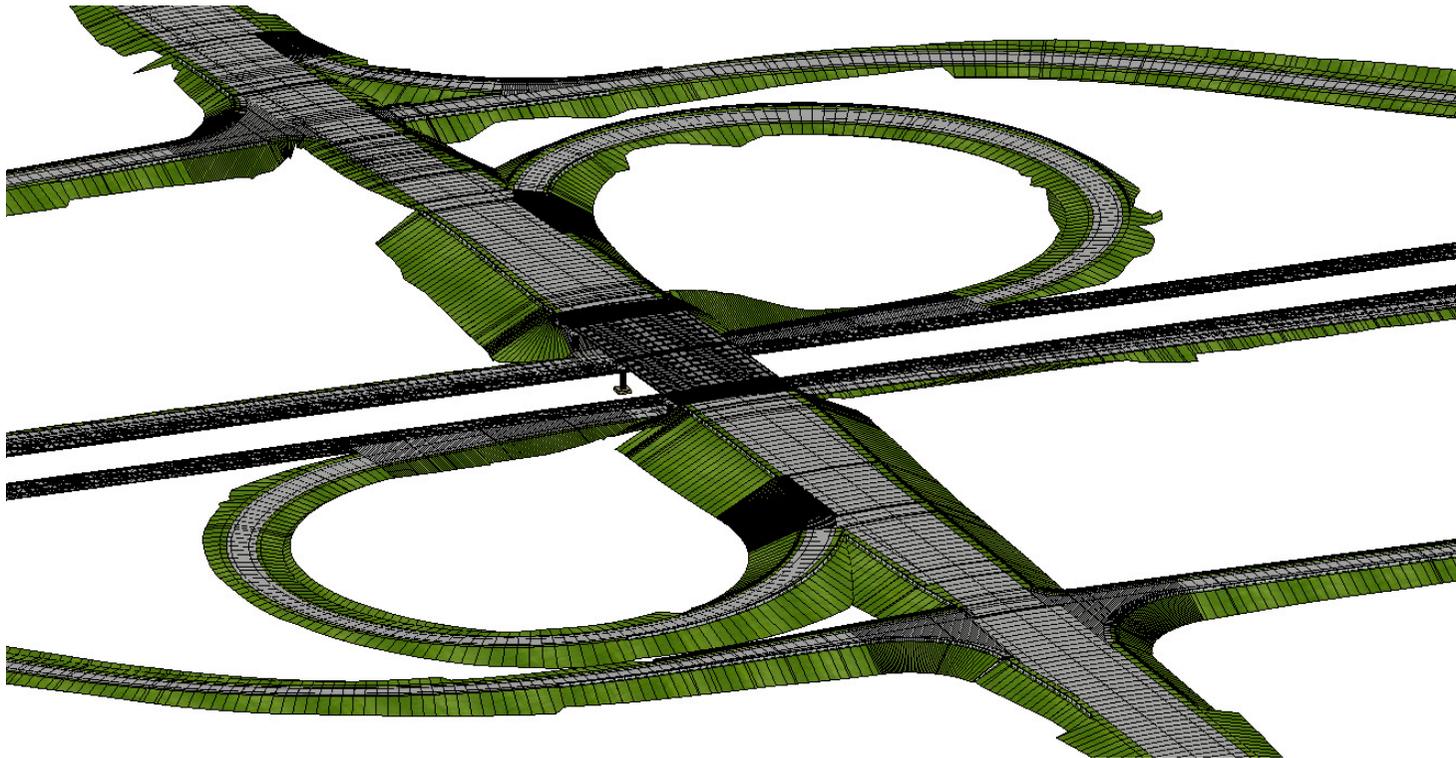
After this session you will be able:

- Create terrain models and apply surface templates.
- Apply linear templates around the edge of a terrain.
- Use point controls to connect to adjacent corridors.
- Learn the power of civil cells to automate development of complex design areas such as intersections.

The Challenges of COMPLETE Modeling...

- The process of pushing a template along an alignment to create a 3D model is not a new concept.
- On the contrary, when was the last time you thought about modeling a driveway or the nose of a median?
- Connecting corridors with non-corridors?
- What about interaction between different alignments...
 - Gores
 - Loop Infields
 - Bridge Abutments
 - Etc.

Modeling Everything Could Be Challenging...

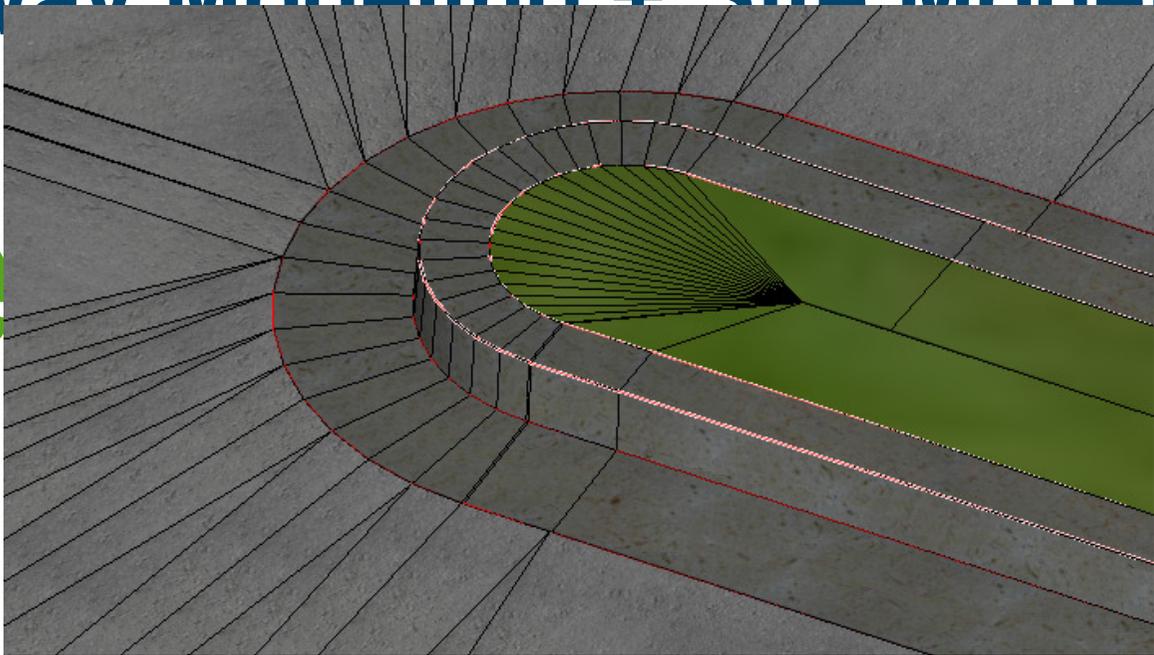


But Remember...There's Power in Change!



**** V8i SELECTseries 3 ****

Roadway Modeling + Site Modeling =

The  **ion**

Seamless Modeling

- With the release of V8i SELECTseries 3, Site and Corridor Modeling are a unified technology
- DGN based model removes all limitations of data integrity
- Applying templates is the same for baselines as it is for parking lots
- Seamless integration between adjacent corridors

Designing a Park and Ride Facility

- Step 1 – Establishing the geometry of the perimeter
 - Horizontal Geometry
 - Vertical Geometry
 - All civil geometry is DGN based and graphically redefinable

Step 1 – Designing the Geometry

DEMO

Step 1 – Designing the Geometry

Designing a Park and Ride Facility

- Step 2 – Creating a Terrain Model
 - Create the terrain model of the concrete boundary
 - Adjust stroking tolerances of the terrain model
 - Terrain models are now built into the DGN file format as a MicroStation element with controllable parameters
 - All terrain model properties and settings are controlled through element information

Step 2 – Creating a Terrain Model

DEMO

Step 2 – Creating a Terrain Model

Designing a Park and Ride Facility

- Step 3 – Applying a surface model template
 - Apply a pavement template to the terrain model
 - Adding a template component to a terrain model allows a designer to provide material depth to any terrain model surface

Step 3 – Applying the Surface Model Template

DEMO

Step 3 – Surface Model Template

Designing a Park and Ride Facility

- Step 4 – Applying a linear template
 - Apply a linear template to the pavement boundary
 - Templates can be applied along any civil geometry element.
 - Does not require a corridor
 - No need to make special components – uses traditional components from template library

Step 4 – Applying a Linear Template

DEMO

Step 4 – Applying a Template

Designing a Park and Ride Facility

- Step 5 – Applying point controls
 - Apply point controls to the fill slope of the Park and Ride facility to tie into the mainline ditch bottom
 - Point controls provide the necessary tools to connect points from one corridor to another
 - Adjacent corridors
 - Linear template objects

Step 5 – Applying Point Controls

DEMO

Step 5 – Applying Point Controls

Designing a Park and Ride Facility

- Step 6 – Applying clipping references
 - Apply a clipping reference to the mainline corridor, using the Park and Ride to clip the mainline where overlap occurs
 - Complete clipping control now available with ability to add multiple clipping references to a corridor
 - Ability to add any MicroStation shape as a clipping reference

Step 6 – Applying Clipping References

DEMO

Step 6 – Applying Clipping References

Designing a Park and Ride Facility

- Step 7 – Applying parametric constraints
 - Apply a parametric constraint to the curb to modify the curb's width
 - Parametric constraints allow the user to create and customize the design to the specific standards
 - Widths, slopes, heights, variable adjustments, etc.

Step 7 – Applying Parametric Constraints

DEMO

Step 7 – Applying Parametric Constraints

Designing a Park and Ride Facility

- Step 8 – Placing a Civil Cell
 - Place a Civil Cell to connect the mainline corridor to the park and ride facility.
 - Civil cells allow for the automation of complex geometry (2D and 3D)
 - Help to ensure design standard compliance
 - The possibilities are endless
 - Traffic Islands
 - Driveways
 - Intersections
 - Roundabouts
 - Etc.

Step 8 – Placing a Civil Cell

DEMO

Step 8 – Placing a Civil Cell

Designing a Park and Ride Facility

- Step 9 – Fine Tuning the Model
 - Adding Target Aliasing to the radius returns
 - Using Parametric Constraints to taper the curb height and fill slopes
 - Customizing template drops
 - Radius value change

Step 9 – Fine Tuning the Model

DEMO

Step 9 – Target Aliasing

Step 9 – Parametric Constraints

Step 9 – Template Drop Edits

Step 9 – Modifying a Radius

Learning Paths: Ready-Made Training Plans

Choose from:

- Bentley recommendations
- Configure your own
 - Organizational
 - Personal

Select:

- Product(s) and version(s)
- Language
- Training type

Enroll team members in:

- One learning path
- Multiple learning paths

Personalize Learning Path

Use this form to personalize a Learning Path. You can enable/disable specific course offerings by expanding the "Find Training" tab, and even add new course blocks into your Learning Path. Click the Help icon for more detailed instructions and a Step-By-Step guide.

Name* Peter's custom lp
Description*

Learning Path Type Personal Learning Path Set as Company Learning Path

Courses

MicroStation Essentials III
MicroStation Essentials is designed for the new MicroStation user and builds a solid foundation in the concepts, tools and features found in the MicroStation drawing environment. Starting with setting... [More](#)

Find Training (14)

Live	Title	Lang
<input type="checkbox"/>	MicroStation Essentials	Engl
<input type="checkbox"/>	MicroStation Essentials Basics	Engl
<input type="checkbox"/>	MicroStation Essentials Express	Engl
<input type="checkbox"/>	MicroStation Essentials	Engl
<input type="checkbox"/>	MicroStation for AutoCAD Users	Engl
<input type="checkbox"/>	MicroStation for AutoCAD Users Express	Engl
<input type="checkbox"/>	MicroStation for Mining and Metal Extraction	Engl
<input type="checkbox"/>	MicroStation for AutoCAD Users Express	Engl

On-Demand

Title	Language	Gene
<input type="checkbox"/>	MicroStation Essentials Lecture Series	English VBI
<input type="checkbox"/>	MicroStation Quick Start Guide	English VBI
<input type="checkbox"/>	MicroStation Essentials	English VBI
<input type="checkbox"/>	MicroStation for AutoCAD Users	English VBI
<input type="checkbox"/>	MicroStation for Mining and Metal Extraction	English VBI
<input type="checkbox"/>	MicroStation Essentials	English VBI

Personalize Learning Path

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Name* MicroStation Technician in a Roadway Setting
Description* 2 year onboarding program. 72 LU's. Multi-product MS, PW, InterPlot, InRoads. Live and on-demand self-study.

Learning Path Type Personal Learning Path Set as Company Learning Path

Manage Master Course List

ProjectWise User Essentials III
This course is for individuals who need to manage documents throughout a project cycle and work in the ProjectWise managed environment. It presents techniques for working in the integrated environment... [More](#)

LU's:

Find Training (10)

Live	Title	Language	Generation	Release Label	LU's
<input type="checkbox"/>	ProjectWise User Essentials	English	VBI	SELECTseries 2	8
<input type="checkbox"/>	ProjectWise User Essentials	English	VBI	SELECTseries 3	8
<input type="checkbox"/>	ProjectWise Client Start Up Guide	English	VBI	Base Release	4
<input type="checkbox"/>	ProjectWise User Essentials	English	VBI	Base Release	8

Displaying items 1 - 4 of 4

On-Demand	Title	Language	Generation	Release Label	LU's	Type
<input type="checkbox"/>	Design Management Studio	English	VBI	Base Release	1	OnDemand eLearning: Lecture
<input type="checkbox"/>	ProjectWise User Essentials	English	VBI	SELECTseries 2	8	OnDemand eLearning: Hands-on
<input type="checkbox"/>	ProjectWise User Essentials	English	VBI	SELECTseries 3	8	OnDemand eLearning: Hands-on
<input type="checkbox"/>	ProjectWise Client Start Up Guide	English	VBI	Base Release	4	OnDemand eLearning: Hands-on
<input type="checkbox"/>	ProjectWise User Essentials	English	VBI	Base Release	8	OnDemand eLearning: Hands-on
<input type="checkbox"/>	ProjectWise User Essentials	English	VBI	Base Release	5	OnDemand eLearning: Hands-on

Displaying items 1 - 6 of 6

[ADD MORE](#)

MicroStation Essentials III
MicroStation Essentials is designed for the new MicroStation user and builds a solid foundation in the concepts, tools and features found in the MicroStation drawing environment. Starting with setting... [More](#)

LU's:

This session's Learning Path:

A link to this session's Learning Path will be emailed to you.

Assessment

1. True or False: A surface template is a special type of template in the template library? - **False**
2. True or False: Parametric Constraints allow the designer to override constraint values initially set by the template such as slope and distance values? - **True**
3. Fill in the blank: _____ allow the user to automate the design and placement of complex and/or redundant 2D and 3D geometry? - **Answer: Civil Cells**

Questions?