Roundabout Design & Analysis

Plan and design roundabouts

TRANSOFT SOLUTIONS

TORUS
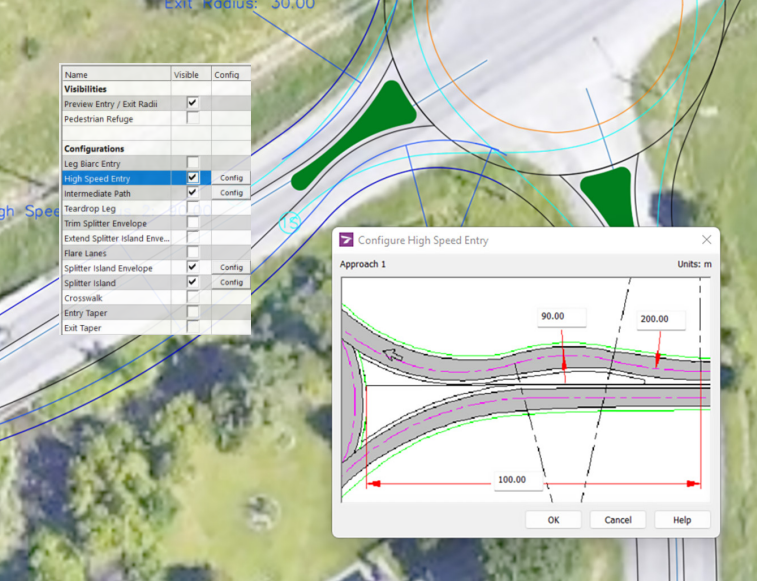
The Most Comprehensive Solution for Roundabout Design & Analysis

Design your roundabouts more efficiently with smart geometric and analytic features. Reduce the amount of time spent developing roundabout designs during the conceptual, feasibility, preliminary, and detailed design stages.

Focus on engineering designs and gain productivity by reducing manual calculations, repetitions, and iterations. Make informed design decisions with integrated analysis feedback such as fastest path and sight line checking.

Delivering the best geometric design with dynamic editing

TORUS® takes an innovative approach of generating roundabout geometries using vehicle swept path movements. This method minimizes complicated iteration cycles in the design process and lets you focus on engineering designs by eliminating taxing calculations, repetitions, and iterations.

With its automated setup of the initial geometry, it provides a solid foundation for the upcoming design phases. Generating the initial geometry from a desired design vehicle and providing immediate dimensional and analytical guidance allows you to reach project goals and design objectives faster and safer.

Built-in design guidelines

Our Design Guidelines tool controls the design vehicles, clearance offsets, and parameters for the fastest path and sight lines at the start of the roundabout design process.

TORUS supports a multitude of design guidelines and standards that are defined - and preferred - by government organizations.

Alternatively, you can generate the High Speed Approach design methodology as preferred by many DOTs.

Instant conformity notifications

Streamline your design process with dynamic feedback, making each iteration nearly effortless by simultaneously letting you design and edit the geometry while balancing guidelines, safety, and operation. TORUS lets you adjust your design on the fly and provides instant notifications advising you if you're staying within design guidelines or on any potential design errors and inconsistencies.

Comprehensive design and editing functions

With its complete set of design and editing tools, you can easily drag and place elements while dynamically updating the design. Simply add and set leg parameters such as entries/exits, offsets, widths, bypass lanes, and curb rounding.

Modify various elements of your splitter islands like radii, offsets and more, or even introduce a pedestrian refuge space to make your design safer for your vulnerable road users.

With the Refined Edge tool, you can draw lines and arcs, which can be fine-tuned to closely represent the final edges, while the Adaptive Roundabouts tool performs vehicle path and fastest path checks on manually drawn roundabouts.
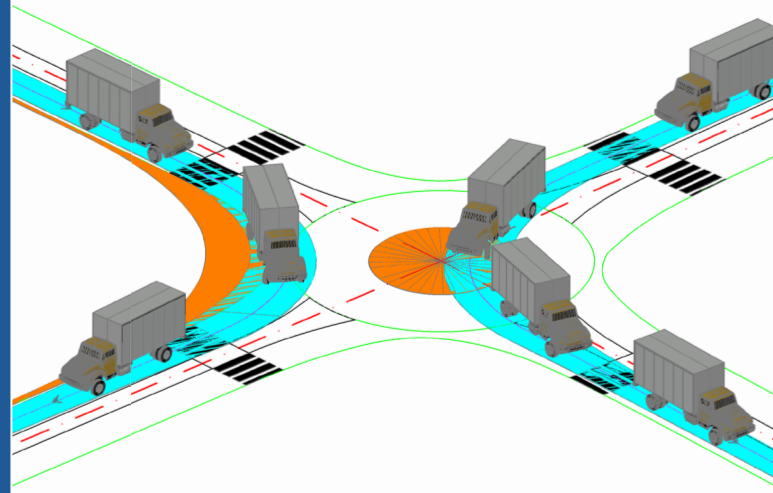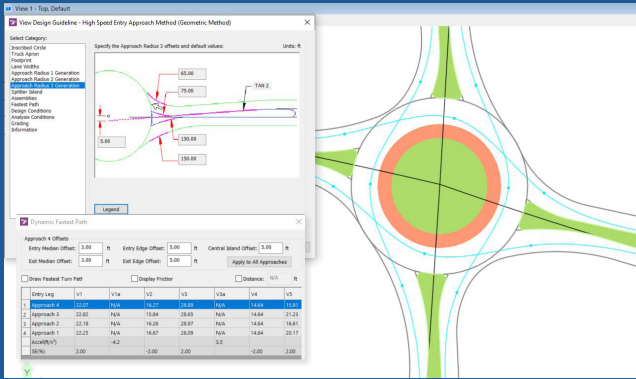
Design a variety of roundabouts

TORUS' patented Vehicle Envelope Method is used to generate roundabouts in various shapes and forms based on the design vehicle movement.

Efficiently design circular and non-circular roundabouts, one lane or multi-lane, to address special constraints such as right of way, utilities and other infrastructure.

Or design a turbo roundabout, with its key geometric elements that provides a spiraling flow of traffic, requiring drivers to choose their direction before entering the roundabout.

Design for safer infrastructure

With TORUS it is easy to simulate vehicle movements within the roundabout by analyzing and displaying the vehicle path overlap.

Easily add, view, edit, and delete AutoTURN® vehicle movements specified in the current design guidelines, or switch out to a special transport vehicle and check if it can access the roundabout safely.

Ensure your design allows for speed consistency by using the Fastest Path tool to calculate the fastest paths and speeds.

Generate various sight lines like approaches to crosswalks, yield lines, circulatory lanes, and more to ensure your design allows enough time and distance for drivers to react to obstacles.

Visualize the impact with 3D modeling and assemblies

Design your complex projects with easy 3D modeling and visualizations, and add assemblies to your roundabout (shoulder, boulevard, sidewalk, curb and gutter).

By incorporating terrain elevation and the swept paths with its vehicle clearance data together in the project drawing, issues not anticipated when designing in a 2D plane are now detected and can be resolved using a 3D space, therefore preventing costly damage to vehicles and the roundabout.

Reporting tools

Reduce your iteration cycle and use the Design Manager to track and explore more design options. TORUS allows you to save, recall, and display multiple roundabout iterations for review and comparison. Different sections of a roundabout can be reported on such as footprint, inscribed circle, central island circulatory roadway, truck apron, and splitter island envelope.

Finally, create and insert the Fastest Path Analysis, Curve Tables, and Summary Reports with all design information to finish your design.

Platform Requirements

CAD Platform Compatibility
(Only 64 bit, except Bentley V8i series):

- Autodesk® AutoCAD® 2015 – 2023 (except AutoCAD LT)
- Autodesk® Civil 3D® 2015 – 2023 alignments
- Bentley® MicroStation® V8i (SS4 and up),
  CONNECT® (Update 12 and up)
- Bentley® OpenRoads Designer CONNECT

Minimum AutoTURN® 10.2.3 or AutoTURN® Pro 10.2.3
(sold separately) installed on the same workstation
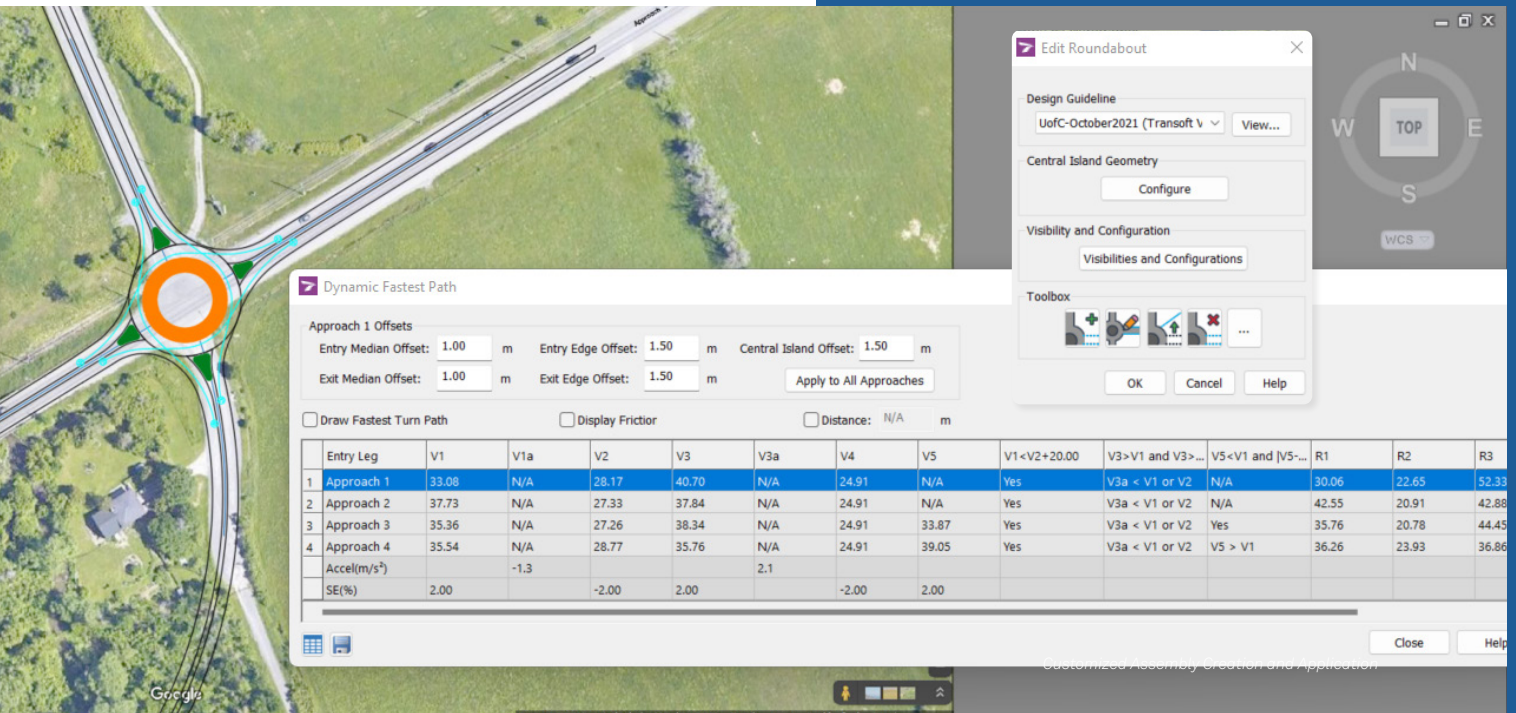
System Requirements

Full support for 64-bit operating systems
Workstation: Windows® 7, 8, 8.1, 10, 11
Network: Windows® Server 2008 R2, 2012,
2016, 2019, 2022

Languages Available

English, French, German

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