



Value Description

Novapoint Road

 CONNECTED CONSTRUCTION

Designing roads with Novapoint

Novapoint Road is a design tool for effectively manufacturing construction plans for all types of highways, streets and intersections. The Novapoint Road module includes complete functions for making the design and delivering the data to the field.

Interacts with design data from other systems through the Quadri task connectors.

Key features

- Alignment and Road Design
- Intersection Design
- 3D Visualization
- Sight Analysis
- Quantity calculations
- Setting out data
- Drawing production

Alignment Design

Using Novapoint Road to design is easy and starts with making the alignment. In Alignment Design there are several flexible functions to give the user full freedom to find the optimal horizontal and vertical geometry. Find the correct horizontal position based on a map and use the terrain data and other features in the Quadri model to determine the best vertical geometry. The end results are in the Quadri model and can be used as a reference alignment for the cross-section based road design.

Road Design

The input for a road design can be read from a template according to a national road standard. The road model is automatically calculated from the template including automatic superelevation and widening. The template is chainage-based and parametric but also stringline based following user defined strings like existing edge lines, buildinglines or other design curves. This gives the user the ability to design a constructable model for the road surface, pavement layers and roadbed taking into account different subgrades in rock, soil or soft spot removal.

The parametric template enables full user control of the interaction with the terrain surfaces and subsurface layers for ditches, rock cut, deep blasting, rock shelf, soil cut and embankment slopes including terracing where needed. The resulting model includes string lines for setting out, solid objects for pavement layers, cut and fill for volumes and textured surfaces for correct appearance.

The resulting 3D road model can be used for Sight Distance Analysis overlaid on the model giving a full visual understanding of the sight impediments.

A rehabilitation interface allows optimization of pavement design when in contact with existing roads maximizing the use of the existing pavement layers.

The interactive Cross-section viewer enables dynamic editing of the parameters instantly overviewing and controlling the result. Also possible to control against other design elements like structures, cable ducts, pipes and manholes.

Dynamic links to Novapoint Rail, Novapoint Water and Sewer, Novapoint Traffic Sign and to Tekla Structures.

Intersection Design

Making intersections has traditionally been a complicated and time consuming process. With Novapoint Road you get access to automated tools producing intersections with the quality necessary for both early phase and the final stages of detailed designing in a matter of minutes. The tools available are capable of producing roundabouts, T- and X-intersections. In addition the layout of interchanges can be made to quickly assess the type of interchange that is most appropriate for the location it is in.

Depending on the tool used, the design results are integrated in the road design cross-section, or part of a separate intersection design task in Quadri. The parametric input can be adjusted further by the user for a custom fit of the design.

Vehicle Track Analyzer

Based on design vehicles according to national standards an analysis of vehicle tracking can be done to check the design including turning circles and overhang that will be part of the driving path.

Delivering the road design

Plan, longitudinal profiles and cross section drawings are a natural part of Novapoint Road and can be automatically generated and updated from the road model. Standard layouts are available for many national standards. User defined layouts can be created and reused.

A detailed quantity overview of an individual road or a selection of the design is available inside the quadri model or may be exported to Excel.

A range of other export formats are supported to open formats such as LandXML, IFC, or Open DWG/DGN.