



## Civil Engineering Software



Digital Terrain Model

Road

Railway



AKG understands today's civil engineering challenges. To meet these challenges, we bring next generation solutions to all aspects of road and railway design, and surveying.

AKG provides VESTRA, an innovative software solution for road and railway design, and surveying. It is the standard design software used by many government agencies, transportation engineers, civil engineers, and planners.

AKG brings more than 30 years of dedication to roadway design and has supported some of the world's most sophisticated and efficient road design challenges. From disaster-recovery road-building in Asia for the World Bank or design of the German Autobahn System to planning of several Formula One race tracks (e.g. Bahrain, Shanghai, Istanbul).

AKG is privately held and has a staff of more than 100 employees. The company group is located in Heitersheim, Berlin, Cologne, Hamburg, Halle/Saale, Vienna (Austria), and Landquart (Switzerland).



AKG Software Consulting GmbH  
Headquarters Heitersheim,  
Germany

Faster projects, faster approvals  
with VESTRA



VESTRA is a comprehensive software solution targeted at the production of road and railway design. VESTRA offers powerful, yet easy-to-use design capabilities.

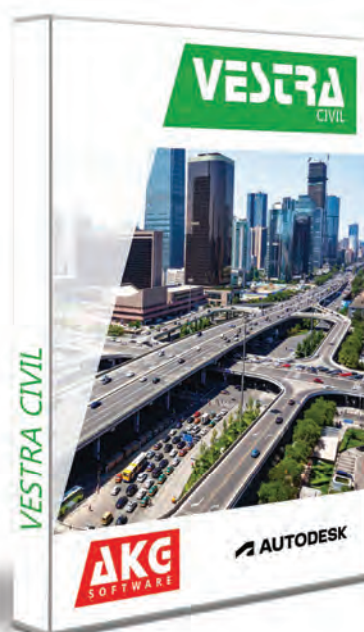
Program handling is supported by wizard-like interfaces that guide you through the entire project workflow. VESTRA uses a dynamic engineering model that maintains intelligent object relationships. A change made in one place instantly updates the entire project. Your project will move faster from concept to achievement.

VESTRA works alongside Autodesk Civil 3D.

## VESTRA CIVIL for Autodesk Civil 3D

- ▶ VESTRA CIVIL is the Road and Railway Design Plug-in for Autodesk Civil 3D. Wizard interfaces help accomplish complex design tasks such as junctions, intersections, roundabouts, and turnarounds/cul-de-sacs.

Civil 3D®  
Compatible









"As for the result, there is a process oriented integral solution that was very well accepted by the executives in the Kanton of Basle City."

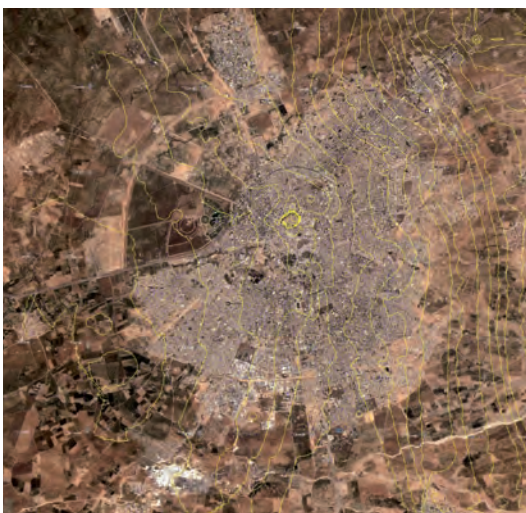
Frank Schmidt,  
Manager of the Land Surveying  
Departement at the Civil  
Engineering Office Basle City



The VESTRA DTM provides you with a wide range of calculation and analysis functions for different areas, including contour lines, slope aspects, intersections, excavation constructions, landfill surveillance, sloped areas, volume calculations and height zone calculations. Regardless of whether you need to perform routine work or complex tasks, you can work faster and more economically with VESTRA DTM.

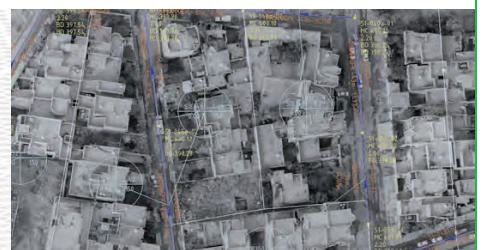
## Some benefits at a glance

- ▶ The application calculates a DTM with a high degree of performance and precision; even very large datasets (of different origins) pose no problem whatsoever.
- ▶ The calculation of the digital terrain model is based on Delaunay triangulation.
- ▶ All 3D lines and curves that are selected for calculation are automatically recognized as break lines. A graphical error analysis checks the output data.
- ▶ The application can be operated intuitively using wizards. It doesn't matter whether you are calculating contour lines and profiles, intersecting models, determining volumes or whether you are creating depth zones.

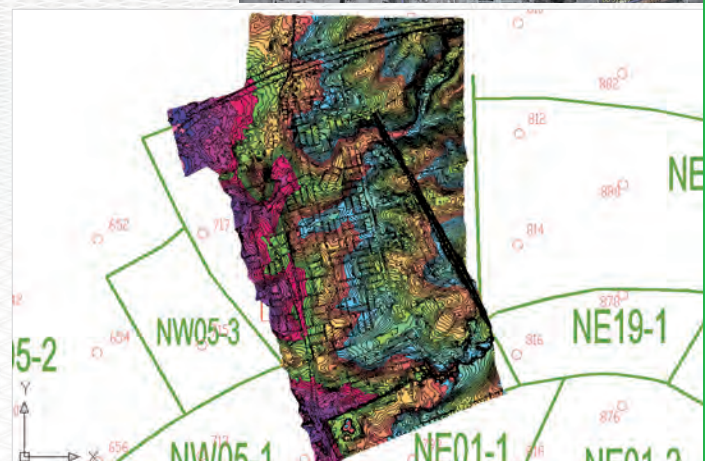


▶ Contour lines, Erbil, North Iraq

Sewer system, Erbil, North ▶



Digital Terrain Model









“A special 3-laned oval of about 200 m in length was designed by VESTRA. In order to cope with demands of that extent one must dispose of a helper as efficient as VESTRA. Its variability enabled us to perform perfectly, precisely, and promptly.”

Markus Biechele,  
CEO biechele infra consult



VESTRA Road sets standards in the field of road design. The application provides numerous Manager and Wizard interfaces to support users in accomplishing design tasks and creating optimized solutions. Whether it be urban or rural planning: VESTRA Road guides you through your entire workflow and lets you concentrate on optimal engineering even with the most complex transportation projects.

## Some benefits at a glance

- ▶ Powerful alignment capabilities for road and highway design using Pls or elements, automatically taking constraints into account
- ▶ Provides Alignment Manager and Wizards for the design of intersections, roundabouts, and turning facilities
- ▶ Swept path module for vehicle simulation and design evaluation
- ▶ Cross section design using components at the click of a mouse button
- ▶ Extensive built-in libraries and user-friendly Horizon Manager in cross section

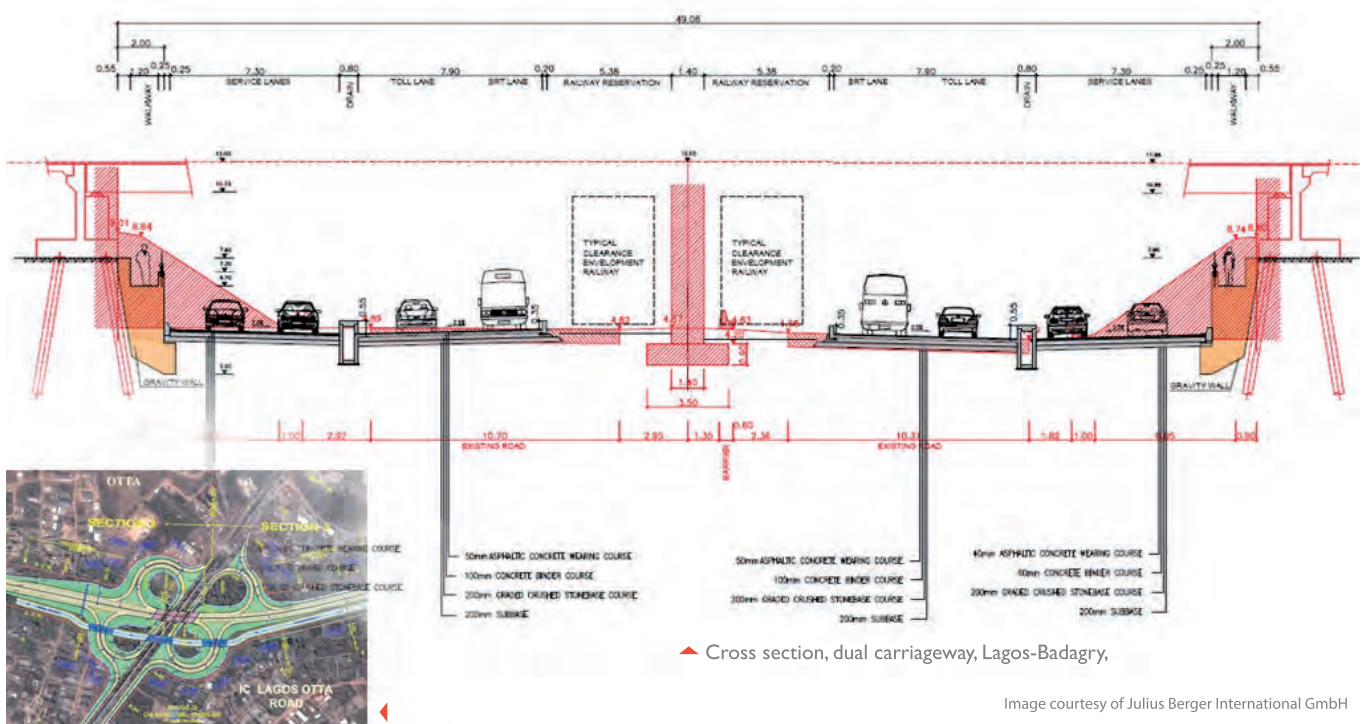


Image courtesy of Julius Berger International GmbH







"VESTRA meets all our railway engineering needs. Project duration is significantly reduced by automatisms."

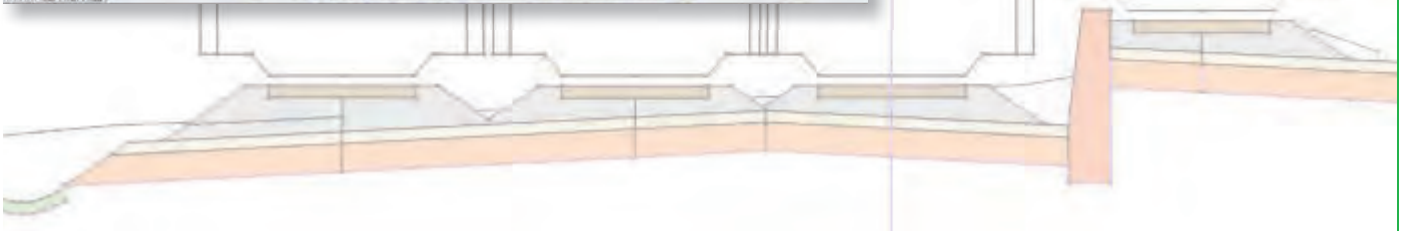
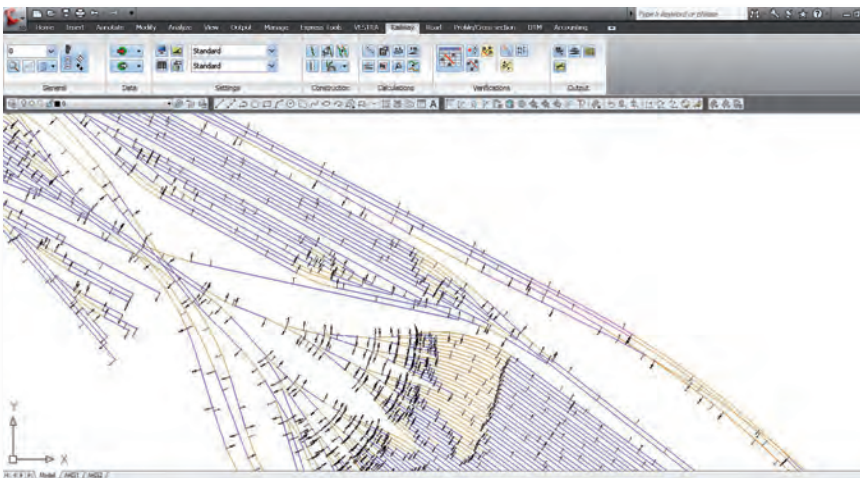
Peter Liepe,  
INGENIEURPLANUNG-OST



VESTRA Rail, the modern system for track planning and track design, meets all possible railway design requirements – from exchanging data without loss and planning entire track systems to making data available for construction machines. The app takes account of the different national standards for alignment, turnout calculation, dynamics, and the clearance gauge.

## Some benefits at a glance

- ▶ Alignment taking account of any planning constraints that arise
- ▶ Automatic inclusion of turnouts and track connections in the calculation
- ▶ Recalculation of all interdependent elements in case of planning changes
- ▶ Extensive built-in libraries and user-friendly Horizon Manager in cross section
- ▶ Calculation of the superelevation taking account of dynamics parameters
- ▶ Modular cross section design
- ▶ Automatic generation of line and turnout elevation plans









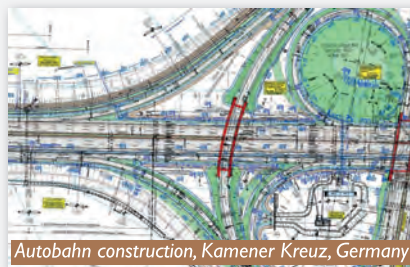
Consultants and transportation authorities around the globe put their trust in VESTRA.

Over 10,000 installations go to show its first-rate quality.



*"We place our confidence in VESTRA. Through the years, this innovative software has delivered greatest versatility and functionality to meet our needs."*

**Thomas Truppner**  
Project Manager  
KONSTA  
Consulting Engineers



Autobahn construction, Kamener Kreuz, Germany



*"VESTRA has increased our work productivity. Changes made in one place are reflected instantly throughout the entire project. In addition, the return on investment was significant. Our clients are happier because we can demonstrate what-if-scenarios faster and easier."*

**Wolfgang Turri**  
Senior Engineer  
Julius Berger International



Lagos-Badagry Expressway, Lagos, Nigeria



*"With all kinds of projects on infrastructure, V-KON uses VESTRA as a preliminary to all visualization work. VESTRA essentially contributes to optimal quality in visualization."*

**Oliver Krebs**  
CEO  
V-KON.media



3D Visualization, Tripoli, Libya



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