



Plateia
by **CGS Labs**



BIM-READY ROADWAY DESIGN SOLUTION



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Plateia is a professional, BIM-ready, 3D road design and reconstruction software solution. It provides the commands and tools to support the entire design process, from preliminary to detailed design, from the initial input of survey data to complex 3D road models with analysis tools, to documentation and publishing features.

Using its flexible, dynamic data model, Plateia supports BIM (Building Information Modeling) workflows and processes. Carefully designed UI and workflows are consistent with the road design engineering practice.

This makes Plateia fast-to-learn and easy-to-use.



TRUSTED MOST
BY DESIGN PROFESSIONALS

FIELDS OF USE

- 01 HIGHWAYS, LOCAL AND URBAN ROADS, FOREST ROADS, MOUNTAIN ROADS, ...
- 02 INTERSECTIONS AND ROUNDABOUTS
- 03 INTERCHANGES
- 04 BRIDGES, VIADUCTS, OVERPASSES, AND UNDERPASSES
- 05 DETOURS AND BYPASSES
- 06 TUNNEL DESIGN
- 07 URBAN ROADS AND AREAS
- 08 URBAN PLANNING
- 09 BICYCLE PATHS
- 10 SPECIAL ROADS: RACING TRACKS, DIRT TRACKS, ...
- 11 EARTHWORKS: QUARRIES, OPEN MINE PITS, DUMP AREAS, EARTH BARRIERS, ...
- 12 REHABILITATION OF LANDSLIDES
- 13 SKI-SLOPES DESIGN, ...

REFERENCES

ADT | ΩΜΕΓΑ

Schroeder
& Associés

Elea | iC

PORR

pnz



DIGITAL TERRAIN MODELING

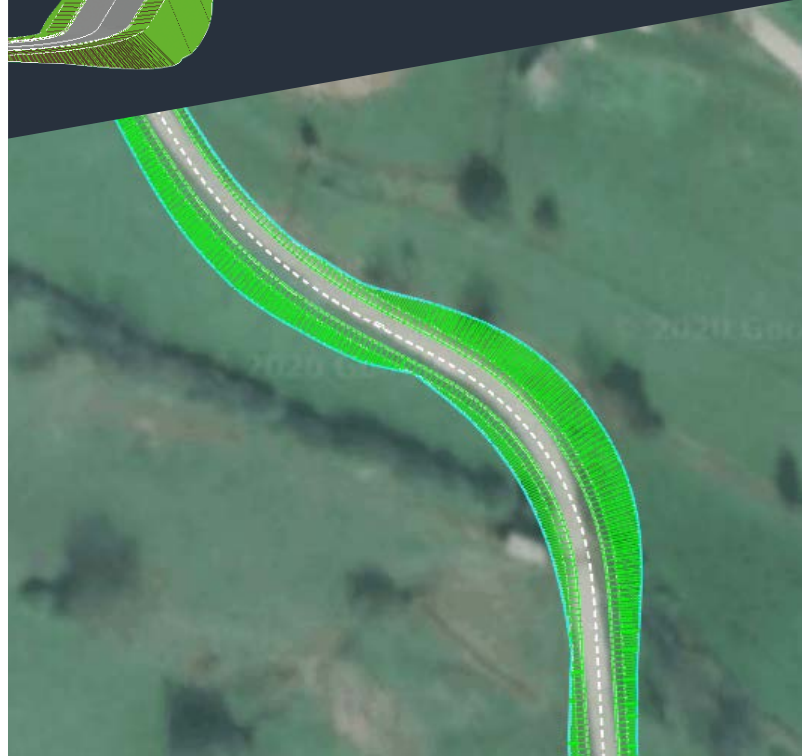
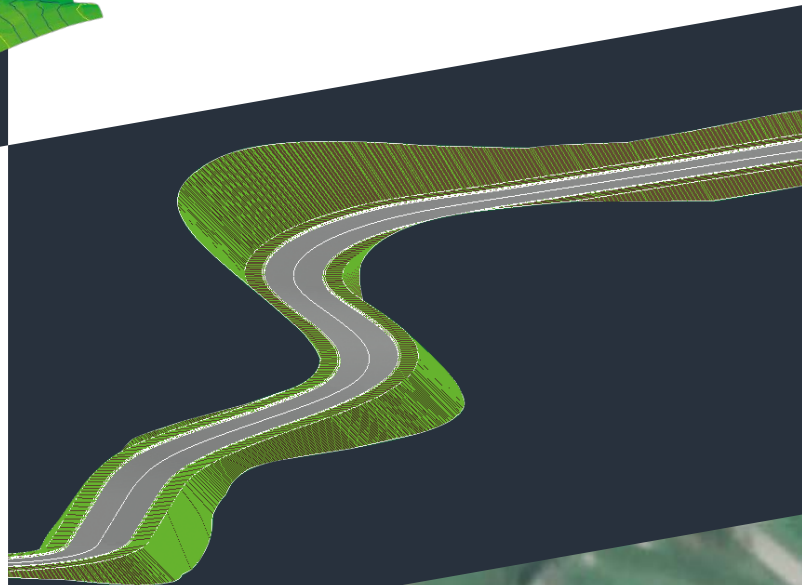
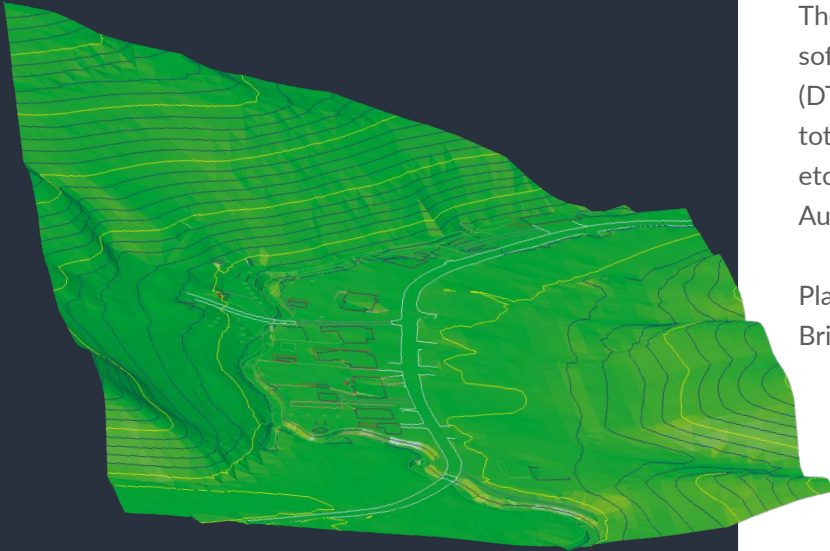
The Surface creation tool is included in CGS Labs software to produce a detailed Digital Terrain Model (DTM) based on various surveys or other input data: total station data files, points, break lines, blocks, etc. This offers the possibility to use Plateia on plain AutoCAD or BricsCAD.

Plateia supports also surfaces from Civil 3D and BricsCAD (V20 or newer).

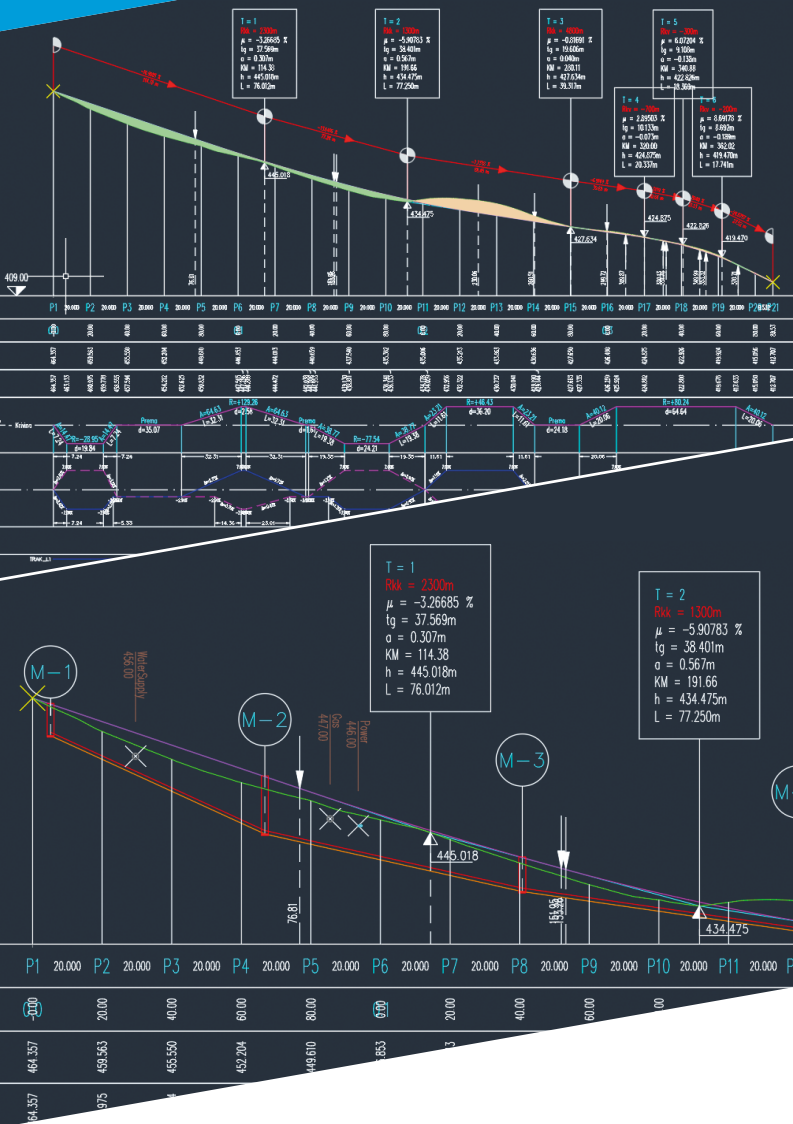
GRADING

Creation of complex slopes with multiple conditions in cut or fill gives users the capability to cover various design scenarios and geometry requirements for all kind of road projects, from simple forest road design to complex intersection geometry design.

Furthermore, creating ponds, parking areas, platforms, road, rail tracks, river channels, and other features is easier and faster with CGS Labs grading functionality.



ROADWAY DESIGN



POWERFUL GEOMETRY DESIGN TOOLS

Plateia provides a wide range of advanced alignment, profile geometry design, and editing tools.

They include P(V)I design, floating and fixed elements design and alignment design created from the existing entities.

Ultimately creating a best-fit alignment based on existing road centerline or road edge survey data. Superelevation calculation features a comprehensive definition and editing tool.

Plateia supports several superelevations definitions and pivot point options according to various European and AASHTO roadway design standards.

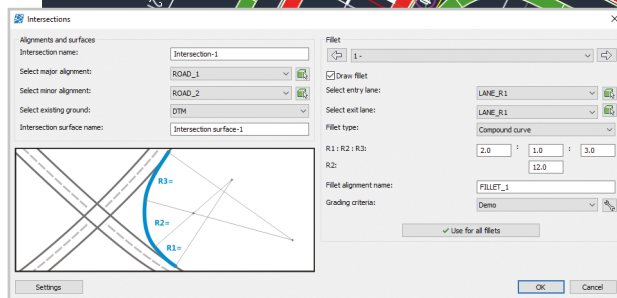
A number of alignment labels according to different country standards, reports, and data export options offer the flexibility to cover a wide range of user requirements.

INTERSECTIONS AND ROUNDABOUTS

Automated intersection and roundabout design based on road geometry defined by alignment, profile and super-elevations.

The 3D Intersections function automatically adjusts secondary road profile and super elevation parameters with corresponding user defined curb returns.

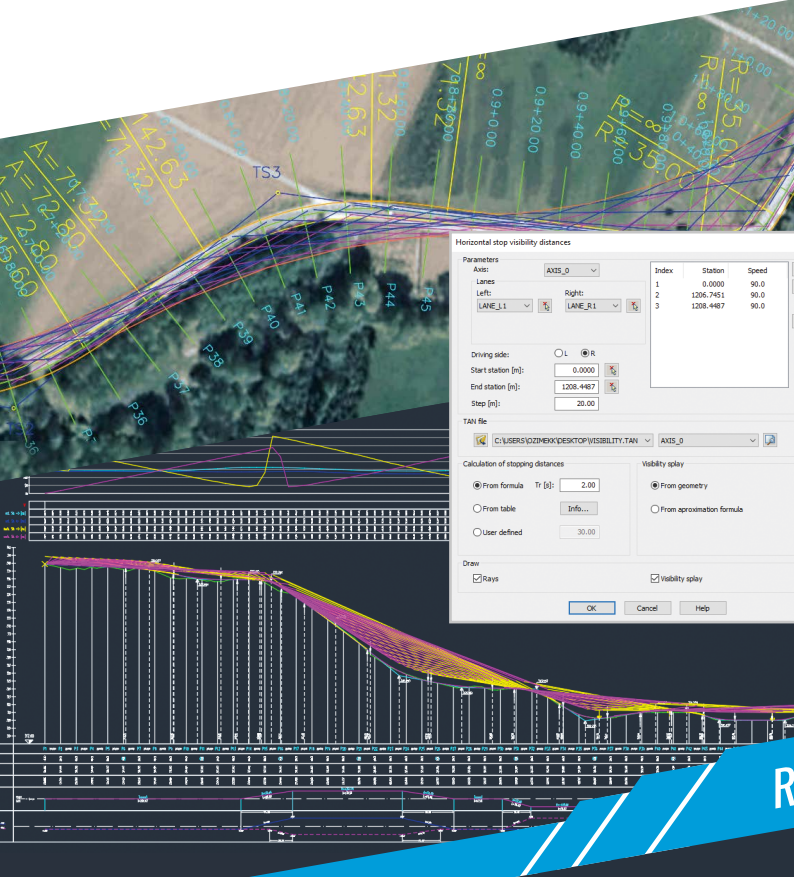
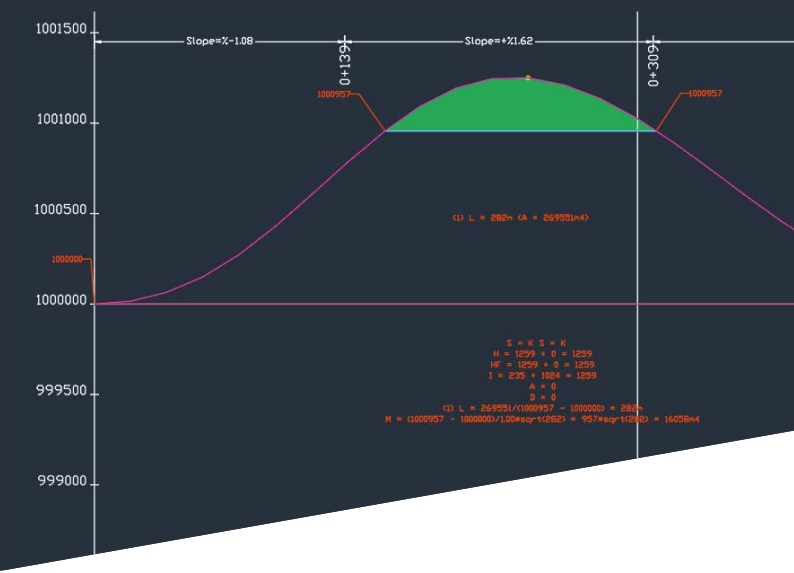
Automated intersection design results in detailed 3D intersection geometry for X or T shaped intersection types. Use the grading/surface mode with various parameters to customize 3D intersection geometry.



MASS HAUL DIAGRAM

Mass haul diagram presents a graphical view of the material moved in the proposed design site.

Mass haul diagrams help designers and contractors understand where gross material movements occur and compare the economies of alternative designs.



VISIBILITY AND STOP SIGHT DISTANCE

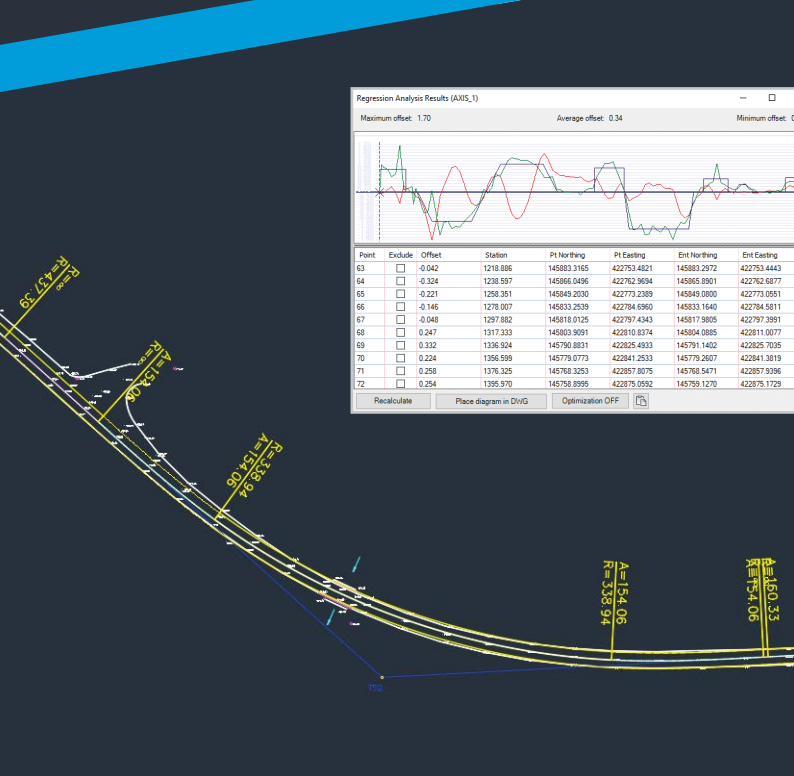
The Visibility and Stop sight distance road geometry tool provides graphical visibility distance analysis required to safely stop a vehicle traveling at design speed. This facilitates planning to avoid collisions with any other immobile objects obstructing the driving path.

ROAD RECONSTRUCTION / REHABILITATION

The road reconstruction / rehabilitation function offers powerful regression analysis tools for best-fit alignment and profile creation based on existing road centerline or road edge surveyed data.

Existing road superelevation comparison with new superelevation calculation and editing enhancements provide designers the needed tools to tackle demanding geometrical restrictions.

Integrated road reconstruction & rehabilitation tools for calculation of material removal and / or resurfacing material quantities result in new 3D road geometry data linked with QTO information.



IMPLEMENTED NATIONAL ROAD DESIGN STANDARDS

AUSTRIA	Österreichischen Richtlinien für Linienführung von Straßen RVS 3.23.
BOSNIA and HERZEGOVINA	Smjernice za projektovaje, građenje, održavanje i nadzor na putevima, 2005.
CROATIA	Pravilnik o osnovnim uvjetima kojima javne ceste izvan naselja i njihovi elementi moraju udovoljavati sa stajališta sigurnosti prometa (NN br. 110/01)
CZECH REPUBLIC	Projektování silnic a dálnic, ČSN 73 6101
GERMANY	Richtlinien für die Anlage von Landstraßen, RAL 2012, RAA-2008, RAS-06
POLAND	Warunków technicznych, jakim powinny odpowiadać drogi publiczne i ich usytuowanie, DU 43/1999 Rzp. 430
SERBIA	Pravilnik o uslovima koje sa aspekta bezbednosti saobraćaja moraju da ispunjavaju putni oobjekti i drugi elementi javnog puta, Službeni glasnik RS, br 50/2011; JUS (UL SFRJ 35/939, 26.06.1981
SLOVENIA	Pravilnik o projektiranju cest, UL RS 91/9303, 14.10.2005
HUNGARY	Partially implemented.

For information about other country-specific standards please contact us!

3D BIM-READY TRAFFIC SIGNS & ROAD MARKINGS DESIGN



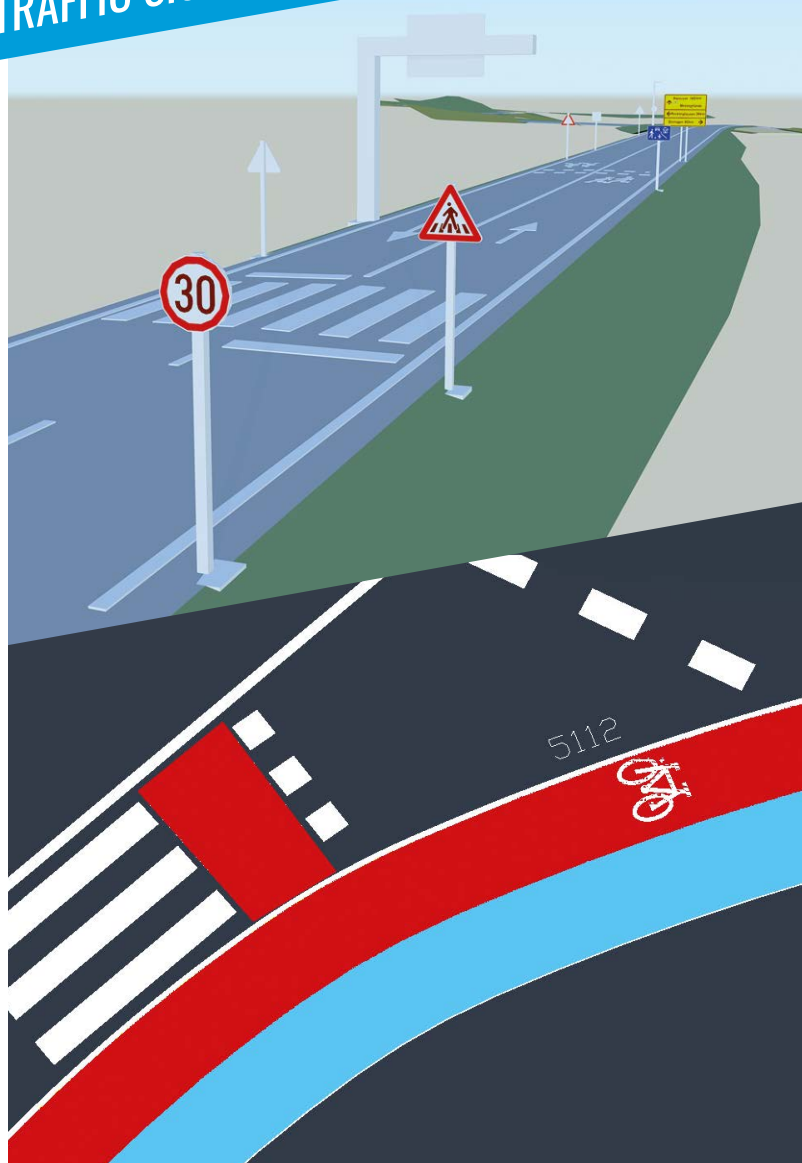
Autosign
by CGS Labs

Plateia includes Autosign - professional CGS Labs software for planning 3D traffic signs and road markings in CAD environment.

Autosign brings extensive collections of country-specific traffic sign libraries, road markings, traffic lights, and other street furniture elements.

It generates detailed layouts, reports, 3D (BIM) objects, and realistic visualizations to assist engineers and design professionals.

Created 3D solid objects can be easily exchanged with Navisworks or InfraWorks or exported to IFC standard exchange format.



SWEPT PATH ANALYSIS AND VEHICLE TURNING SIMULATION SOFTWARE



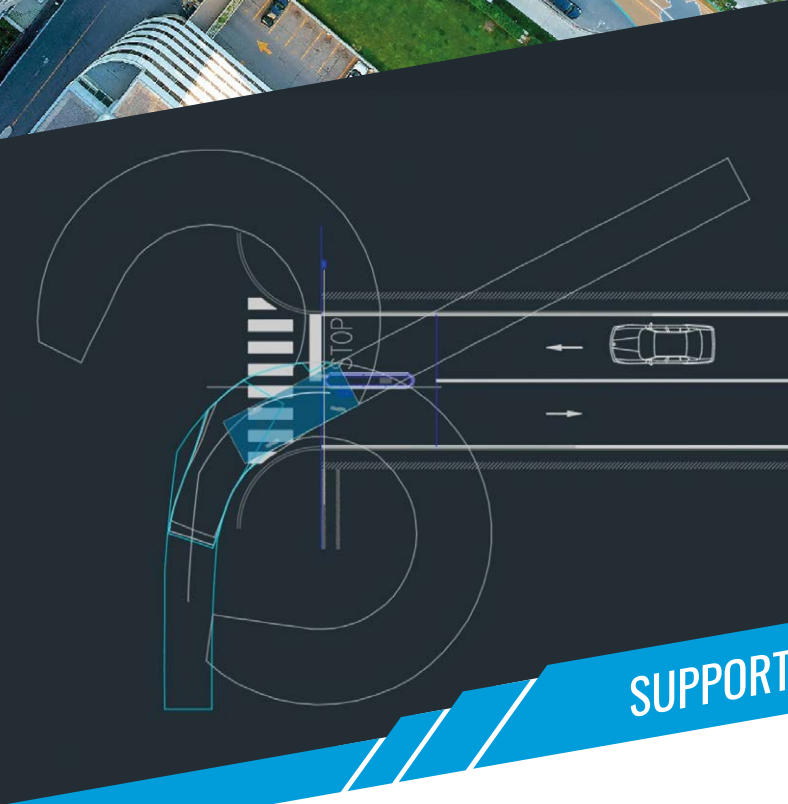
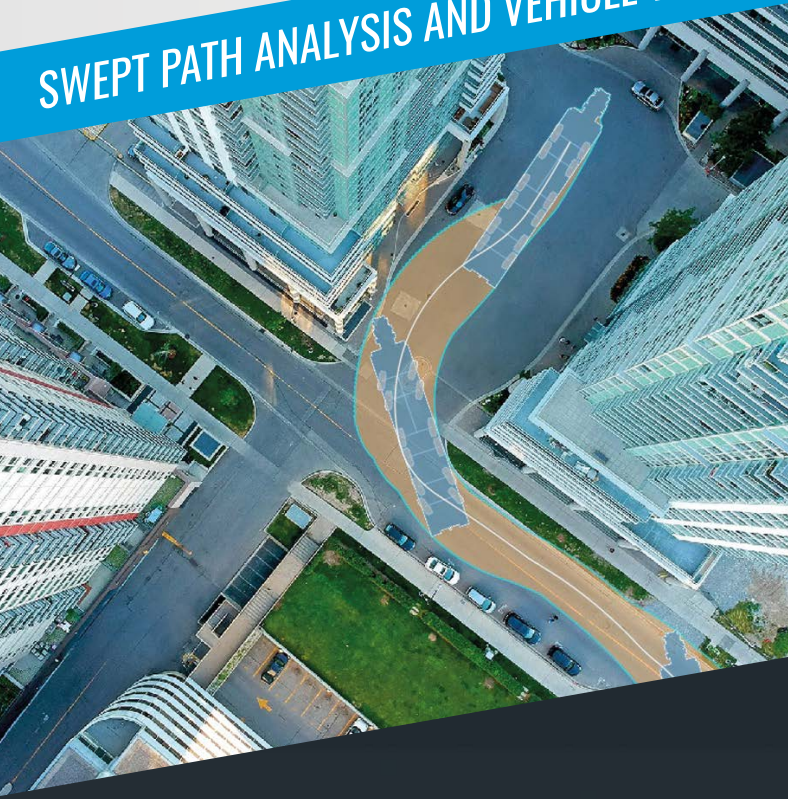
Autopath
by CGS Labs

Plateia includes Autopath - professional CGS Labs software for 3D/BIM swept path analysis and vehicle turning simulations.

Using Autopath you can easily and quickly simulate vehicle maneuvers and check transportability of all types of road design projects: on roads, intersections, roundabouts, hairpin turns, underpasses, overpasses...

With advanced tools for swept path analysis and animation, it not only accelerates the engineering design process but also enables you to quickly check for possible conflicts and inconsistencies of the vehicle path with other vehicles or with built objects, explore alternative design options, and check safety and compliance with standards.

Autopath comes with a number of country-specific reference vehicle libraries defined by national guidelines and an extended collection of real vehicles covering aircraft, bus, cranes, emergency (intervention) vehicles, trucks, agricultural machinery and more.

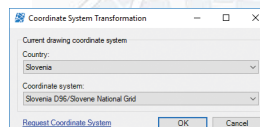
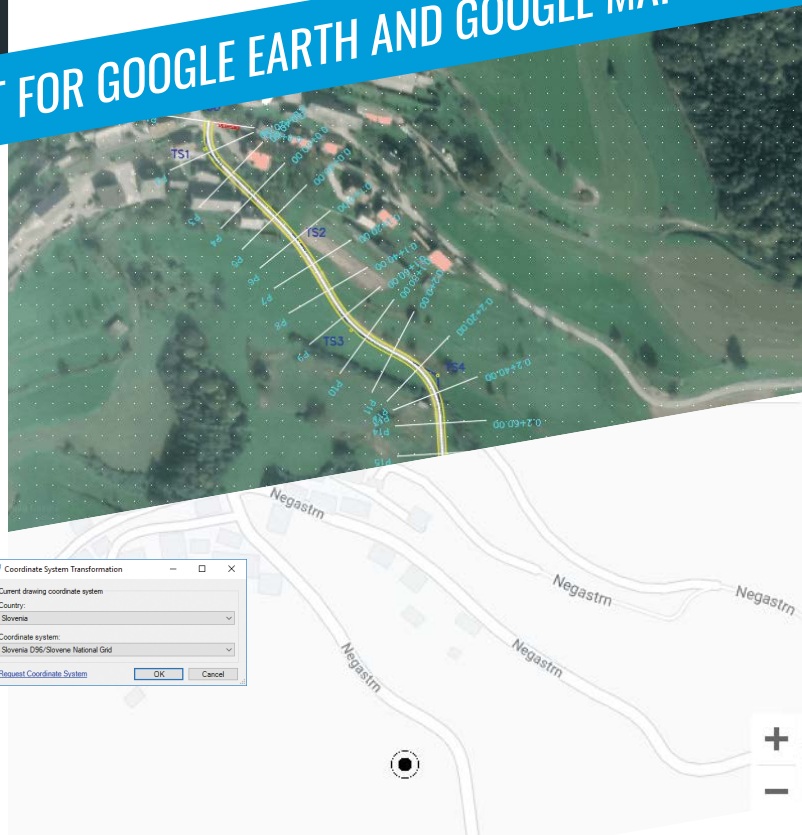


SUPPORT FOR GOOGLE EARTH AND GOOGLE MAPS

GOOGLE MAPS

Google Maps Import makes it easy to import raster images and elevation data of a selected location from Google Maps into a DWG drawing in the selected coordinate system.

Google Street View functionality is also available to allow the user to view the selected area interactively within the CAD environment.



GENERAL FEATURES

LANGUAGES AND COUNTRIFICATION - DESIGN STANDARDS

Plateia is available in several languages and supports country specific road design guidelines, drawing layouts, traffic signs and other symbols, vehicles, etc.

Supported country/language versions:

- ✓ English (International)
- ✓ English (USA-AASHTO)
- ✓ German
- ✓ Austrian German
- ✓ Croatian
- ✓ Czech
- ✓ Hungarian
- ✓ Polish
- ✓ Serbian
- ✓ Slovenian

DYNAMIC DATA MODEL

Plateia stores all design data inside .dwg data file for quick geometry updates and data exchange within CGS Labs software solutions and Autodesk software.

IFC, LandXML, OKSTRA, REB and AutoCAD Civil 3D data exchange interfaces are available.

Dynamic updates to all geometry changes or design parameters are supported within single or multiple drawings with separated layout/profile and cross sections data.

PLATEIA SUPPORTS LARGE PROJECTS

Plateia easily handles large projects with very long alignments and thousands of cross-sections within seconds. Projects are neither limited in size nor is the performance critically affected while working on large-scale projects, including extra-long and multiple alignments, profiles, and cross section views.

Cross sections can provide a high level of details with on-demand synchronization options, great processing speed, and consistent data.

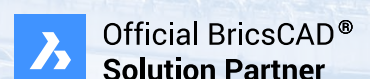
COLLABORATION CAPABILITIES

Large roadway projects can be efficiently divided among multiple team members, who can then work simultaneously on the project.

Projects can be stored in a single drawing or split into several drawings, separating layout, profile, and cross sections.

SUPPORTED CAD PLATFORMS

CGS LABS software runs on top of 2018–2024 versions of Autodesk AutoCAD and Civil 3D as well as BricsCAD Pro, BIM and Ultimate V21 to V23. AutoCAD LT and BricsCAD Lite are not supported! Only 64-bit versions are supported!



VERSIONS

ULTIMATE STANDARD

Survey data import	✓	✓
Digital terrain modeling tool (CGS Labs DTM)	✓	✓
3D Grading	✓	✓
Support for Civil 3D and BricsCAD surface	✓	✓
Alignment design	✓	✓
Profile design	✓	✓
Cross sections design	✓	✓
Road super elevations	✓	✓
3D Road modeling	✓	✓
Points, lines and 3D solids projection to Profile View & Cross Sections Views	✓	✓
Labeling and dimensioning tools	✓	✓
Visibility analysis & Stop sight distance	✓	✓
Quantity Take-off & Mass Haul diagrams	✓	✓
Intersections design 2D/3D	✓	✓
Roundabout design	✓	✓
Intersections islands design	✓	✓
Curb return fillets	✓	✓
Interface for Civil 3D objects <-> Plateia	✓	✓
Regression alignment and profile design (Best-Fit)	✓	✓
Regression alignment and profile analysis and editing	✓	✗
Side road objects distance calculation (Off-Set calculation)	✓	✗
Import of Google Maps geospatial data in CAD drawing	✓	✗
2D Traffic signs and road markings design (Autosign Professional)	✓	✗
3D/BIM Traffic signs and road markings design & visualization (Autosign Ultimate)	✓	✗
Vehicle swept path analysis and turning simulation (Autopath Ultimate)	✓	✗
Support for 3D Solid objects	✓	✗
BIM object property tools (manager/editor/filter)	✓	✗
3D/BIM object clash analysis within AutoCAD, Civil 3D, and BricsCAD	✓	✗
Import/Export LandXML data	✓	✗
Import/Export 3D/BIM model to IFC 4.2 data format	✓	✗
Export 3D road model to Google Earth	✓	✗

ABOUT CGS LABS

Laboratory of ideas, a software company engaged in the digitization of built and the natural environment.

CGS Labs is innovative software company with more than 30 years of experience developing solutions for the design, construction and maintenance of transportation infrastructure. Our applications promote openBIM approach and standardized IFC data exchange. We contribute to greater transparency, quality and cost-effectiveness of construction projects and support sustainable decisions.

01 SOLUTIONS FOR THE DESIGN OF CIVIL INFRASTRUCTURE

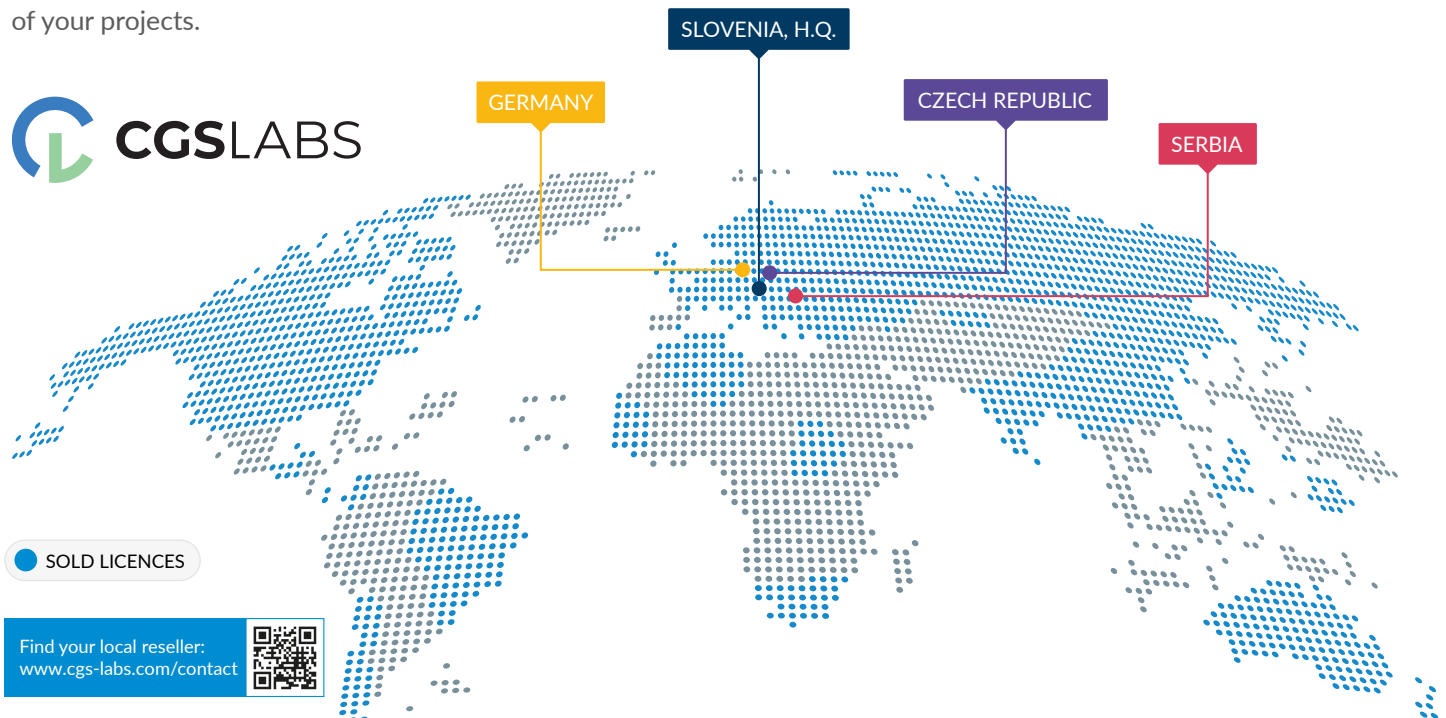
CGS labs develops specialized software solutions for the design of roads (Plateia, Autopath, Autosign), railways (Ferrovia) and channel - river engineering works (Aquaterra). Our software solutions incorporate local design standards.

02 CUSTOMER CARE & EDUCATION

We are not just a software vendor! Our goal is to successfully integrate CGS Labs solutions into your design processes. Our engineers help you get to the highest experience level for the use of CGS Labs software. Besides the always accessible on-line knowledge base, we organize traditional live customer trainings, as well as trainings per customer request, where we discuss selected topics according to the specific requirements of your projects.

03 TECHNICAL SUPPORT

Complete customer satisfaction is very important to us. If any problems should arise while using CGS Labs software, our team of experts is there to assist you, so your design process runs with minimum interferences or delays.



CGS Labs d.o.o.
Brnčičeva ulica 13
1000 Ljubljana
Slovenia

Phone: +386 1 235 06 00
E-mail: info@cgs-labs.com
Internet: www.cgs-labs.si

CGS Labs GmbH
Zeppelinstraße 14
61118 Bad Vilbel
Germany

Phone: +49 6101 9898955
E-mail: info.de@cgs-labs.com
Internet: www.cgs-labs.de

CGS Labs s.r.o.
Antala Staška 1012/37
Křč, 140 00 Prague 4
Czech Republic

Phone: +420 770 698 429
E-mail: info.cz@cgs-labs.com
Internet: www.cgs-labs.cz

CGS Labs doo
Braće Ribnikar 63A
21000 Novi Sad
Serbia

Phone: +381 21 300 47 02
E-mail: info.rs@cgs-labs.com
Internet: www.cgs-labs.rs