Plateia by **CGS Labs**

## BIM-Ready Roadway Design Solution

Professional software solutions for Civil Engineering

CGS L A B S

BIM Solution for Roadway Design & Reconstruction

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.

Fields of use

- Highways, local and urban roads, forest roads, mountain roads, …
- Intersections and roundabouts,
- Interchanges,
- Bridges, viaducts, overpasses, and underpasses,
- Detours and bypasses,
- Tunnel design,
- Urban roads and areas,
- Urban planning,
- Bicycle paths,
- Special roads: racing tracks, dirt tracks …,
- Earthworks: quarries, open mine pits, dump areas, earth barriers, etc.,
- Rehabilitation of landslides,
- Ski-slopes design, …
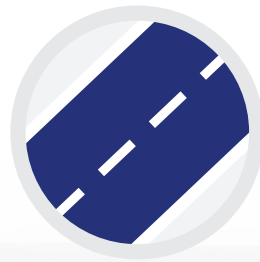
Plateia
by CGS Labs

Plateia references:
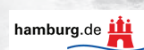
Plateia is ready for quick and effortless integration into BIM processes and workflows!

Create 3D solid road models, attach extended data, and transfer the project to AutoCAD Civil 3D, Autodesk Infraworks, or Autodesk Navisworks.

Plateia road model is ready for IFC data integration.


BIM

CGS Labs solutions provide extensive BIM data support not limited to CAD platforms in use. 3D roadway, railway or river channel models generated get represented as 3D solid objects with extended BIM metadata attached, or as multiple surfaces for use with guiding machines, volume calculation or other. Plateia offers capable Property Manager for adding and changing 3D solids property sets data and editing of material types assigned. With number of alignment converting tools – seamless conversion of AutoCAD Civil 3D alignment to Plateia alignment among them - data import and export interfaces, which include LandXML and IFC data formats, Plateia enables strong BIM data exchange and collaboration options.

Urban & Site design

Digital Terrain Modeling

The Surface creation tool is included in CGS Labs software to produce 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. Civil 3D surfaces are automatically supported by Plateia.
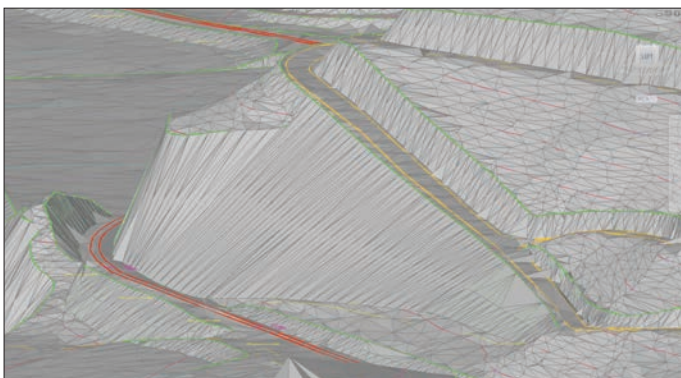
Grading

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.
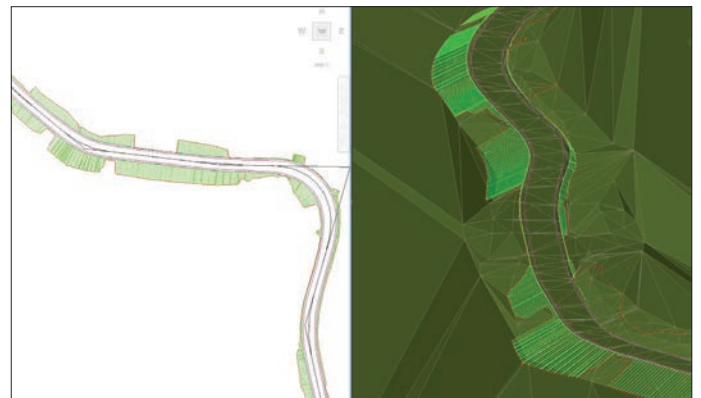
Roadway Design

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
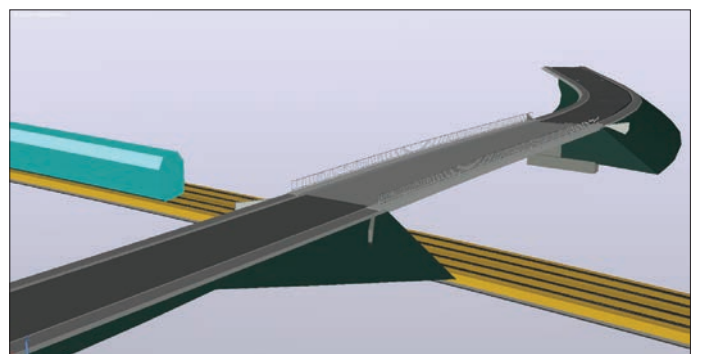
CGS Labs software licensing and purchase options

CGS Labs software can be purchased as perpetual license, with or without subscription or it can be rented for various periods. Single and network licenses are available. CGS Labs also offers a very attractive CGS Labs financing option (PAY1/ USE5) which allows instant use of sufficient number of licenses, payment in monthly rates at a longer time-period, thus significantly increasing the value of your investment.

PAY **1**
USE **5**

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.

3D Surface and 3D Solid Model

Roadway 3D models in Plateia are generated as 3D surfaces or 3D solid models. 3D roadway surface model is built automatically from 3D road edges and terrain model, or it can be built with the grading function. 3D solid model is created based on cross-

section areas, where materials and volumes can be defined as extended data. With 3D solids, we can also build tunnels, bridges and similar objects. Solid objects can be aligned with arcs and transition curves. All solid models, including extended data, can be imported into Autodesk Infraworks, Navisworks and can be used in various BIM workflows.

Detailed Cross Section Design and Editing

Plateia provides capabilities for designing and editing roadway cross sections in a detailed way with almost no geometry limitations to the final project design. Adding multiple roadways to a single cross section gives you control over the geometry between the roads and other infrastructure objects your project requires, and lets you define these areas with great accuracy and detail.
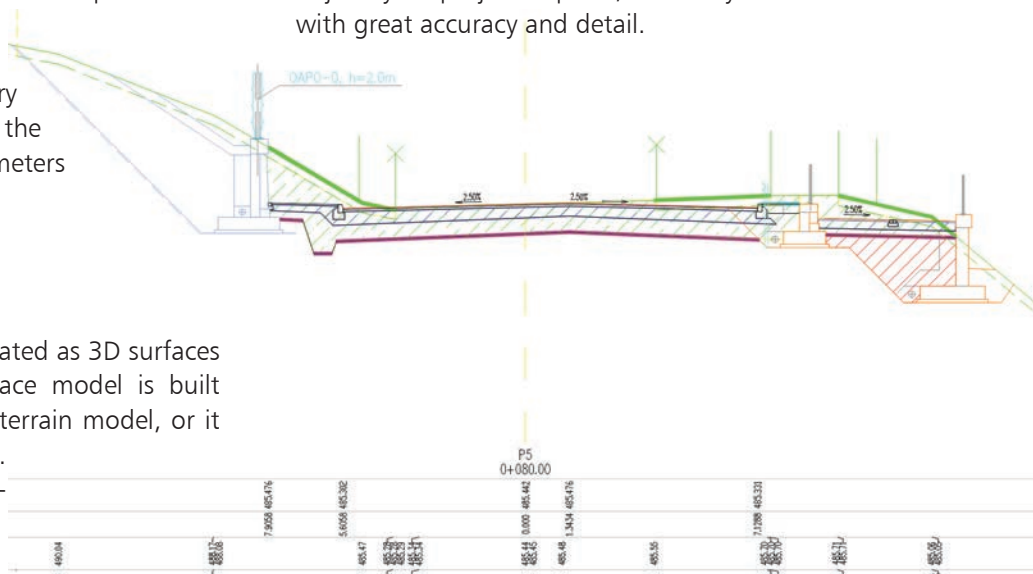
Quantity take-off (QTO)

Plateia calculates material quantity take-off and features a QTO data export tool with custom defined Pay Item (Bill of materials) options. It gives users the possibility to link material defined in the drawing with a material database in cost estimate software, thus supporting digital data transfer and fast cost recalculation when project changes arise.
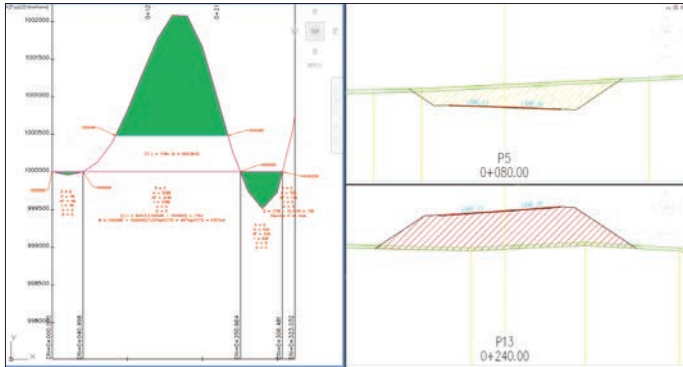
comparison with new superelevation calculation and editing enhancements provide designers the needed tools to tackle demanding geometrical restrictions. Integrated road reconstruction & rehabilitation tools for calculation of material removal and/or resurfacing material quantities result in new 3D road geometry data linked with QTO information.
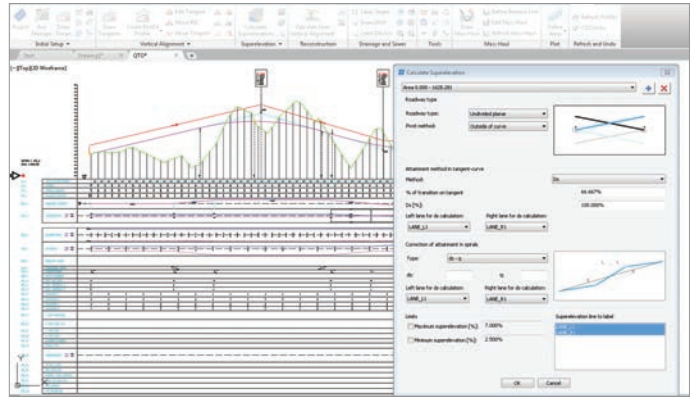
Mass Haul Diagram

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.
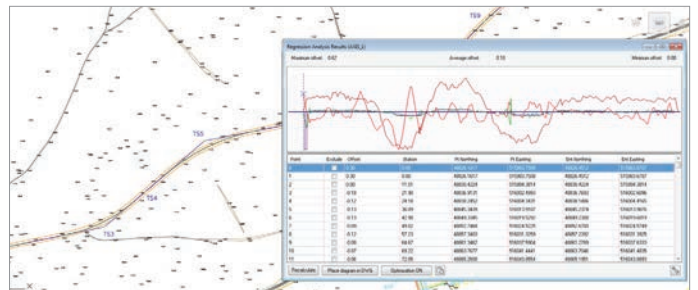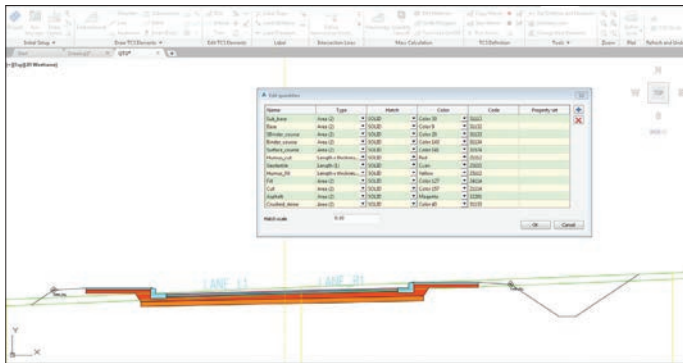
Autosign: 3D Traffic Signs, Road Markings, and Road Sign Gantry

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.

Autosign is included in Plateia Ultimate 4D and Plateia Professional 3D software suites. It provides users with everything necessary to design, edit and visualize 3D traffic signs, road markings and road sign gantries. Several country-specific traffic signs libraries are available as well as traffic signs and road markings reports with quantity data.

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
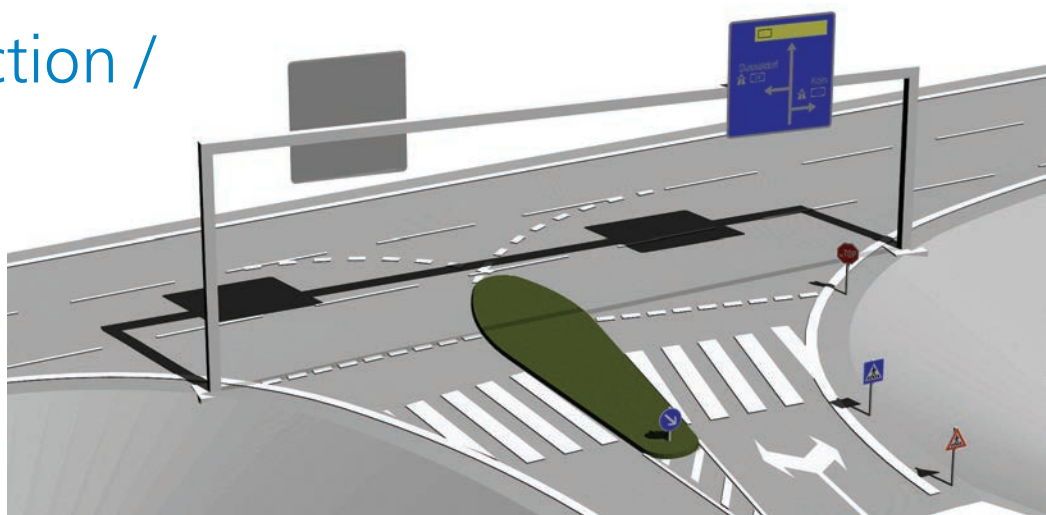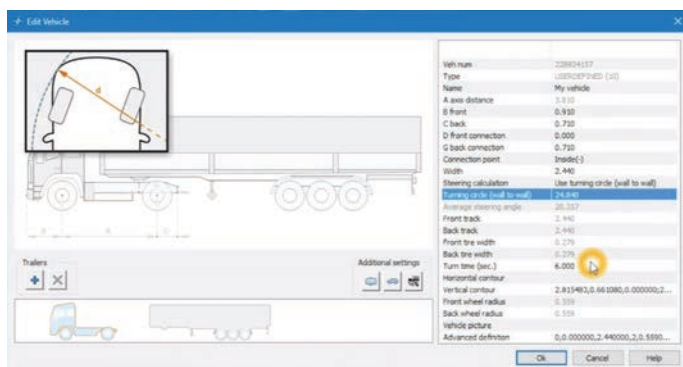
Autopath:
Swept Path Analysis

Autopath, CGS Labs swept path analysis software is included in Plateia Ultimate 4D software suite. Autopath meets all your professional horizontal and vertical vehicle swept path analysis needs.
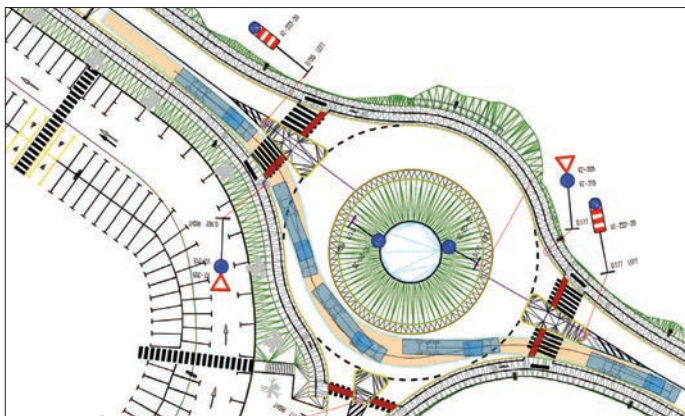
A range of driving methods combined with predictive turning technology and dynamic editing capabilities are available. Additionally you get several vehicle clearance analysis and animation tools.

Autopath comes with predefined country-specific libraries of vehicle types, offers customization tools and supports special multi wheel transportation vehicles. Autopath is also available as standalone product in two different versions, PRO and LT.

General features

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.

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

Languages and countrification
Design Standards

Plateia is available in several languages and supports country specific road design standards, drawing layouts, traffic signs and other symbols, vehicles, etc. Customers are entitled to use any country specific version of the software in case of designing projects for the foreign countries. Currently supported country/language versions are:
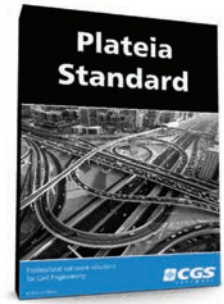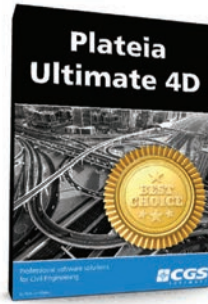
- English (Int. and USA)
- Austria
- Bulgaria
- Croatia
- Czech Republic
- Germany
- Hungary
- Macedonia
- Poland
- Romania
- Russia
- Serbia
- Slovakia
- Slovenia
- Turkey

Supported platforms

Plateia runs on top of 2019-2013 versions of AutoCAD Civil 3D, AutoCAD or AutoCAD Map 3D as well as BricsCAD V18-V15. Only 64-bit versions are supported!

Select Plateia package that meets your needs!

	Plateia Ultimate 4D	Plateia Professional 3D	Plateia Standard
Survey data import	+	+	+
Digital terrain modeling tool (DTM)	+	+	+
3D Grading	+	+	+
Alignment design	+	+	+
Profile design	+	+	+
Cross sections design	+	+	+
Road super elevations	+	+	+
3D Road modeling	+	+	+
Points/Lines projection to profile/cross sections	+	+	+
Labeling and dimensioning tools	+	+	+
Visibility analysis & Stop sight distance	+	+	+
Quantity Take-off & Mass Haul diagrams	+	+	+
Intersections design 2D/3D	+	+	+
Roundabout design	+	+	+
Curb return fillets	+	+	+
Intersections islands design	+	+	+
Interfaces (Civil 3D objects <-> Plateia, export to Google Earth)	+	+	+
Regression alignment and profile design (Best-Fit)	+	+	+
Regression alignment & profile analysis and editing	+	+	X
Side road objects distance calculation (Off-Set calculation)	+	+	X
Support for 3D Solid objects	+	+	X
3D Traffic signs & Road markings design	+	+	X
3D Road signs gantry design	+	+	X
3D Signs & Road markings visualization	+	+	X
Traffic signs & Road markings reports	+	+	X
Libraries with country specific traffic signs & road markings	+	+	X
Custom traffic sign & Road markings design	+	+	X
Horizontal swept path analysis & EasyDrive	+	X	X
Vertical clearance analysis	+	X	X
Swept path analysis reports	+	X	X
Country specific vehicle libraries	+	X	X
Custom vehicles & special transportation design	+	X	X
Support for BIM (LandXML data import/export, IFC export)	+	X	X

About CGS Labs and its software solutions

Founded in 1990, CGS Labs is an innovative IT company, focused on civil engineering, transportation and environmental technologies. With its products Plateia (roadway design), Ferrovia (railway design), Aquaterra (river engineering works design), Autopath (vehicle swept path analysis) etc. CGS Labs is among worldwide leading civil engineering software developers. CGS Labs is also developing customized OEM CAD and BIM solutions for renowned software vendors. With its offices in Slovenia, Germany, USA and Serbia and with its wide reseller´s network, it serves customers in more than 30 countries worldwide.

CGS LABS | **AUTODESK** Authorised Developer | **BRICSYS** Authorised Developer

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