

BENTLEY SELECT®

Organizations around the world use Bentley solutions to design, build and operate plants, buildings, roadways, railways, public works, communication and utility networks—an amazing diversity of infrastructure and constructed assets. Our best-of-class AEC solutions are mission-critical to your productivity and to the efficient operation of these assets. Bentley therefore recognizes that stability of your solution and protection of your investment in AEC content is fundamental to your success. You need predictability and certainty, and a vendor committed to an ongoing relationship that supports you in the way that you need to work. Bentley SELECT is our comprehensive subscription program to fulfill this mission, providing you with everything you need to conduct your AEC work—licenses, enhancements, support, services, online resources and a range of other benefits.

Bentley Licensing Options

Bentley SELECT licensing options are innovative and flexible, allowing you to meet the diverse needs of your core and extended teams and manage varying workloads as project requirements change. Bentley's SELECT™ licensing options include:

- > Concurrent licensing
- > Product subscriptions
- > Portfolio subscriptions
- > Enterprise subscription
- > Home-use licenses

> MICROSTATION PRODUCTS

About Harken-Reidar, Inc. - Harken-Reidar is a Bentley Channel Partner for the Mid-Atlantic, VA, PA, MD & DC. Our sales & training staff are Registered Engineers who understand Civil design and plans preparation. We have 20 years of experience using GeoPak, InRoads, MicroStation and Haestad Methods software. Corporate Office: 1105 North Royal Avenue, Front Royal, VA 22630 Offices: Pittsburgh, PA and Houston TX. Tel: 540-635-6742, Fax: 540-635-6752 www.harken-reidar.com info@harken-reidar.com





INROADS® PRODUCTS

An integrated family of
applications for civil engineering.



DISCIPLINE-SPECIFIC CIVIL SOFTWARE FOR YOUR CHOICE OF AEC PLATFORMS

The Bentley InRoads® family of civil engineering products is the central design solution on many major civil engineering and transportation projects. InRoads offers consistent, discipline-specific design functionality on your choice of AEC platform: MicroStation® or AutoCAD®.

Powerful and versatile, InRoads applications can be used to address a broad array of project needs, from rapid evaluation of impacts during preliminary phases to final design and plans production. They are particularly suited to multi-modal design and situations with complex transitions and curves. Powerful regression analysis combined with InRoads' unique element design capability gives you the power to resolve complex design geometry efficiently and accurately, in accordance with specific engineering design criteria.

Along with roads and highways, InRoads applications are put to use on a host of civil engineering projects, including railways, municipal and public works projects, commercial and industrial site development, levees, canals and rivers, pipelines, environmental projects and more.

InRoads software provides a greater level of design sophistication than standard tools with the ability to apply design rules and work in multiple views and dimensions. You can improve productivity and accuracy with focused applications for development of survey data, roads, railways, bridges and sites, as well as storm and sanitary systems.

The InRoads products are fully integrated with Bentley's project collaboration software servers, including Bentley ProjectWise®. ProjectWise provides the security of tracking, storing and distributing InRoads data to a project team located in the same office or across the world. Running in concert with Bentley's range of publishing capabilities— including Digital InterPlot™ and Bentley® Publisher™— InRoads is an excellent design foundation for improving collaboration on projects comprising a large number of companies, professionals and locations.



Focused, integrated solutions for civil projects

- > InRoads
- > InRail®
- > InRoads® Bridge™
- > InRoads® Survey™
- > InRoads® Site™
- > InRoads® Storm & Sanitary™

> *InRoads handles a multitude of design conditions and produces highly accurate results.*

Choice of AEC Platform

InRoads integrated applications run on MicroStation and AutoCAD, in single or hybrid environments, without the need to repurpose and convert data.

Integrated

The InRoads product family is tightly integrated, so that design information – from collection of existing ground to as-builts – is shared by engineering disciplines and other project stakeholders.

Consistent

InRoads stores project data independent of the AEC platform to ensure data integrity and security, as well as to provide engineering design consistency across platforms.

Cohesive

Consistent tools, look, and feel with a Project Explorer interface – across the product line – gives you easy access the power of InRoads applications and reduces impacts of training and startup.

Streamlined

Roadway libraries streamline repetitive tasks across projects and promote rapid evaluation of design alternatives for critical decision-making.

Customizable

Configure the InRoads environment to meet project standards or your personal preferences, from the software interface to the way in which design features display.

Compatible

Report geometry and surface data through XML for improved data sharing with field engineers and surveyors, stakeout and construction, as well as other software applications.

Efficient

As features are modified, the software synchronizes the design expression – be it plan, profile or cross section – to reflect the change.

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Productive

A single pull-down menu of drafting tools offers easy drafting functionality, including flexible notes and labeling capabilities, and automated plan and profile sheet generation.

Intelligent

Fully 2D/3D capable, InRoads offers smart, feature-based modeling and automatic updating of drawings and reports from design changes.

Versatile

InRoads can be used on all types of civil projects, by users with different levels of expertise, for a range of project needs, from early impact studies to construction plans production.

Adaptable

Bentley's InRoads products adapt to your workflow, regardless of the deliverable your project demands.

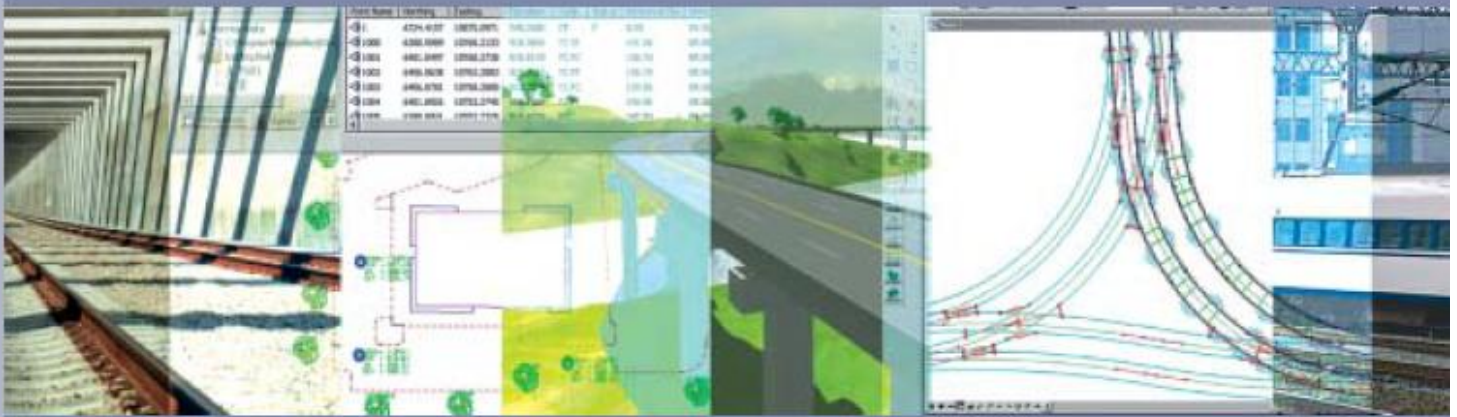
InROADS

Versatile Roadway Design

The flagship product in the InRoads family offers an interactive design and production environment for development of roads and major highways. The software's model-based approach provides the means to address a multitude of design conditions while producing highly accurate results.

Intelligent feature-based digital terrain modeling provides accurate display of design features in plan, profile or cross-section views. As you work quickly in 2D, an intelligent 3D file resides underneath. Related to the digital terrain model is a wealth of feature data, ensuring consistent data relationships.

You can utilize parametrically-driven decision tables during the roadway modeling process to drive decision-making according to your requirements. Decision tables automatically determine



the treatment of right and left side slope conditions at critical locations in the model. This is an effective way to not only reduce the time spent manually manipulating cross sections but also improve the quality of your roadway model.

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InRoads offers a customizable user interface capable of supporting a variety of workflow environments. Whether importing a basic set of data or designing a complex multi-level interchange, you can configure InRoads to present only the portion of the product that is relevant to your workflow. This flexibility makes InRoads easy and efficient to use, allowing users to be productive regardless of their experience level.

InRAIL

Comprehensive Rail Tools

InRail is a powerful 2D/3D application for design, detailing, fabrication and maintenance of rail infrastructure. The software is ideal for a variety of rail applications, including freight, commuter, light rail, high-speed rail and magnetic levitation systems. Whether you are designing a new double-track extension, realigning the curve of an existing light rail line or manufacturing a crossing, InRail offers you the most robust set of rail-specific design tools in the industry.

Extensive design and layout capabilities help you not only explore unlimited design scenarios but also perform regression analysis, design turnouts and crossings, edit connections and calculate carts. When designing tunnels, you can evaluate proposed relative to existing conditions in tunnel cross sections, and generate isopachs to indicate over- and undercut conditions. Light Rail Manufacturing (LRM) capabilities help you produce accurate shop drawings for fabrication of rail pieces and assembly of joints and crossings.

InRail includes an array of analysis capabilities to ensure quality design. Choose from a range of options for drawing production and reports creation. Used worldwide, InRail supports numerous international design standards.



INROADS SURVEY

Integrated Survey Data Processing

InRoads Survey offers a sleek graphical tool for reduction of data – from electronic field books and global positioning systems—for use in the InRoads civil design and engineering environment. InRoads Survey produces plot-ready graphics immediately upon receiving the data. You can display contours, adjust surveys and visually verify results—all before leaving the site.

Using complete two-way communication, InRoads Survey downloads and uploads data with virtually all data collectors. As you work quickly in any of these 2D perspectives or in 3D, modifications are made to the underlying intelligent data model. Included with InRoads Survey is interactive graphical coordinate geometry (COGO) for computing offsets, intersections and basic geometrical designs. You can adjust surveys using a variety of standard methods. With all these capabilities, InRoads Survey plays an integral part of the design and construction workflow.

InRoads Survey addresses surveying needs and complements the civil engineering workflow, streamlining the project. Since the data generated with InRoads Survey is stored in a centralized data model, reuse of the data with other InRoads applications is simple and intuitive. Stakeout and construction data from InRail, InRoads and InRoads Site software can be directly brought back to field devices with InRoads Survey.

INROADS SITE

Productive, Accurate Site Modeling

Used for land development and environmental reclamation, InRoads Site offers high-definition coordinate geometry design tools and sleek surface modeling to increase your productivity. Powerful point-and-click design tools and automatic graphic feedback provide immediate verification as you develop site models. Layout tools automate the creation of parcels, estates and right-of-way takes with "best-fit" solutions, which you can quickly refine graphically.

Using InRoads' feature-based DTM, you can control your surface features as never before. Efficiently build intelligent surface models with associated feature information, editing on the fly and performing feature queries for reports. The software enables you to seamlessly import and filter data when creating site models. InRoads Site analysis tools help you make design decisions rapidly, saving you time and money.

InRoads Site provides excellent profile and cross-section generation and editing capabilities, as well as extensive annotation options. Smart labels allow you to annotate design features once and as the feature is modified, the intelligent label can be updated automatically. InRoads Site is replete with drawing generation and reporting tools for complete plans production.

> ***"InRoads is CH2M HILL's predominant roadway design application because it gives us the flexibility to handle an evolving business environment – managing compressed work schedules, leveraging resources and leveling the workload company-wide."***

Steve Alters, PE
Senior Project Manager
CH2M HILL

INROADS STORM & SANITARY

Interactive Network Design and Analysis

This comprehensive application assists in the design, modeling, and analysis of storm and sanitary sewer networks. You can lay out networks interactively, relative to digital terrain models and other civil discipline design data. Easy 3D modeling capabilities enable you to explore "what-if" scenarios with minimal time and effort.

InRoads Storm & Sanitary lets you work quickly, utilizing a vast array of typical system components and structures while incorporating third-party information. It maintains all physical data in support of intensive, industry-standard analytical processes and exacting plans production. You can also interactively review, edit, and report on all network data and attributes.

InRoads Storm & Sanitary is capable of design and restoration of any scale public works project involving storm or sanitary sewer networks. Because it uses data generated by the other InRoads applications, it serves an integral role in the complete civil design workflow and is widely used on large-scale transportation projects.

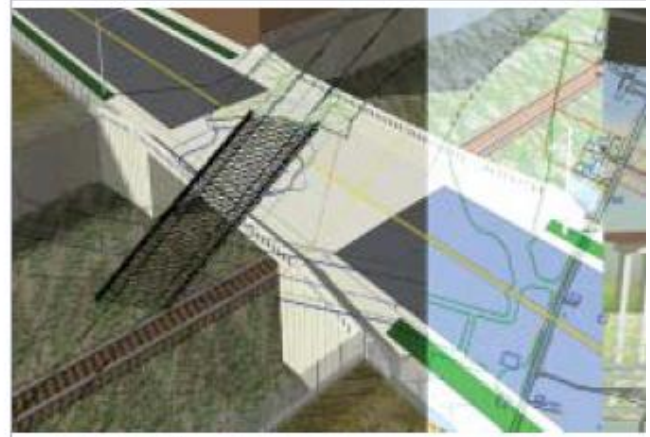
INROADS BRIDGE

Complex Geometric Modeling

Whether defining complex bridge geometry or designing simple span bridges, InRoads Bridge simplifies and automates your workflow with precision bridge modeling tools.

As an integral member of the InRoads family, InRoads Bridge calculates information directly from the roadway's geometric model and DTM, saving you the task of data recreation. The software guides you through a logical workflow, from the slab fascia lines to piers lines, from primary and secondary framing lines to screed reporting.

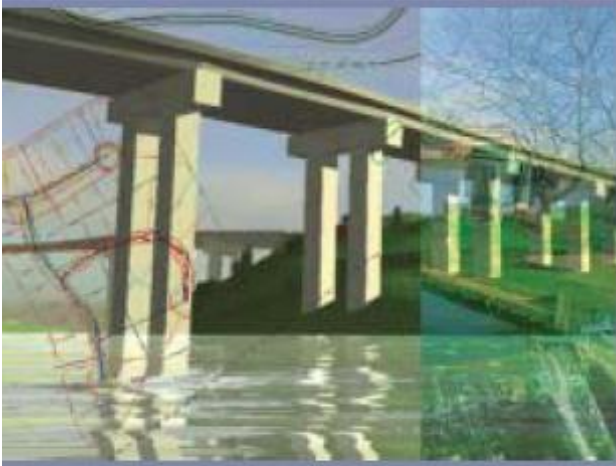
InRoads Bridge supports industry standards for pre-stressed concrete and steel sections. Analysis tools enable you to adjust your design to accommodate special haunch conditions, curvature, camber and deflections. A full range of drawings and reports can be extracted from your 3D geometric bridge model. When your project requires 3D visualization, InRoads Bridge propagates conceptual CAD models from the engineering database.



> *"InRoads speeds the design process and enables consensus and approval on design iterations. The time savings are considerable."*

Brad Humphreys, PE
Design Engineer
Utah Department of Transportation

> *InRoads addresses the scope of your needs, from preliminary evaluation of impacts to plans production.*



COLLABORATIVE CONTENT MANAGEMENT AND CONTENT PUBLISHING

Bentley's fully integrated collaboration servers manage and publish content created by MicroStation and all Bentley discipline-specific product lines, as well as content created with other design and enterprise applications. This integrated approach supports streamlined design and construction, shortens project schedules, reduces overall project costs and optimizes the operation and management of constructed assets.

As a project moves through each phase, Bentley's **content management and publishing solutions** deliver critical engineering information in the form needed by each project team member. Our content management solution helps you manage and control access to project content, automate workflow, control revisions, and manage change. Our content publishing solution provides integrated network plotting and context-appropriate Web publishing, ensuring that the right information is published to the right people at the right time.

Bentley **collaboration servers** manage an integrated and intelligent virtual model of your asset. By cohesively integrating the broad array of engineering content, you substantially improve the efficiency of your engineering team—and more effectively manage your assets.

A WEALTH OF INNOVATIVE CIVIL ENGINEERING SOLUTIONS

Bentley's InRoads family offers you a versatile set of integrated, data-centric civil engineering solutions for your CAD platform of choice. The combination of seamless discipline integration, easy 3D modeling and exacting plans production will help you improve the quality and timeliness of project delivery.

Bentley is committed to providing innovative solutions matched to the mission and business practices of your organization. To help you maximize your investment in InRoads technology, we offer award-winning support, training and consulting services. We stand ready to assist you in implementation of business solutions for design collaboration, project management, and AEC content publishing and archiving.