



Delivering Innovative Transportation *Solutions*



Architecture
Engineering
Design
Construction Management
Program Management



Who We Are

SYSTRA USA (SYSTRA) is an architecture, engineering, and construction management firm that helps our clients deliver transformative projects in public transportation, educational facilities, and affordable housing.

Throughout four decades of US experience, SYSTRA has been a cornerstone of the nation's public transportation landscape. Our commitment to safety, environmental stewardship, quality, ethics, and sustainability forms the bedrock of our daily operations.

Through the power of collaboration, our approach is grounded in our corporate value of Connected Teams to

ensure our clients and partners have access to the best global talent. Through seamless information sharing, innovative tools, best practices, and streamlined processes, we foster an environment where excellence thrives.

As a member of SYSTRA Group, a world-renowned engineering and consultancy, we tap into a vast pool of expertise and resources to deliver tailored solutions that meet the evolving needs of our clients and the communities they serve.

Living Our Values

SYSTRA's workforce is driven by our values: Excellence, Connected Teams, and Bold Leadership, which are rooted in our rich history and vibrant culture.

Excellence is at the core of SYSTRA's ethos. We foster the highest level of technical proficiency, coupled with a deep understanding of local contexts and environmental complexities. Grounded in our engineering heritage, excellence is not just a goal but a guiding principle that shapes our approach.

Connected Teams allow us to effectively use our collective talents, driving success for all involved. SYSTRA's work model facilitates collaboration across global teams, empowering our staff to execute projects with efficiency and agility. By leveraging the right tools, processes, and skills, we navigate the intricacies of our projects with confidence.

Bold Leadership is integral to our approach that entails fostering innovation to pioneer new solutions in a dynamic world. It also requires the courage and ambition to make tough decisions. At SYSTRA, we embrace this culture, constantly pushing boundaries to drive positive change and ensure the wellbeing of all stakeholders.



SYSTRA in Numbers

- **11,000 employees worldwide:** we harness diverse talents and expertise to drive innovation and excellence in transportation solutions.
- **65 years of international experience:** SYSTRA has honed our skills and knowledge to become a leader in the engineering and consulting industry.
- **Operating in 80 countries:** SYSTRA's reach spans the globe, enabling us to bring our expertise and solutions to diverse regions and cultures worldwide.
- **40+ CBTC projects:** Having successfully delivered over 40 communications-based train control (CBTC) projects, SYSTRA is revolutionizing rail systems with cutting-edge technology and safety advancements.
- **High-speed rail lines on 5 continents:** Pioneering advancements in rapid and efficient transportation, we have contributed to the design of high-speed lines in service and under construction on 5 continents.
- **60% of automatic metros:** SYSTRA is the world leader in automatic metros, with 60% of automatic metro lines in service, under construction, or being automated to our credit.

Engineering News-Record (ENR) Rankings

No.2

international mass transit
and rail design**

No.3

international bridge
design**

No.6

international
transportation design*

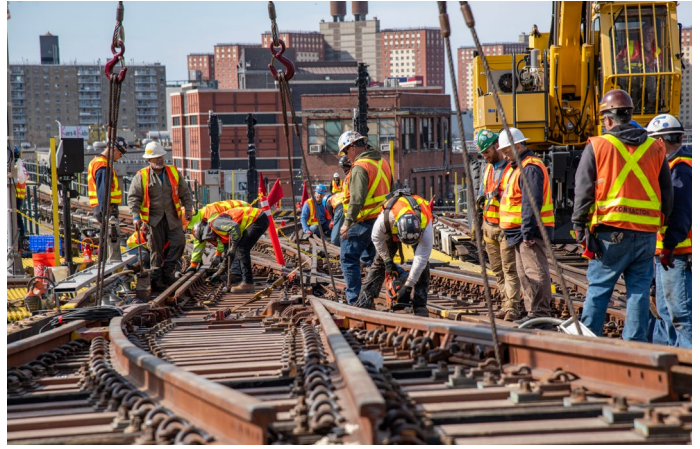
No.22

top 225
international design
firms*

No.40

top 150 global
design firms*

**published 2024, based on 2023 revenue*





A Collaborative Approach: *Connecting Global Expertise*

At SYSTRA, collaboration is more than a practice – it is our philosophy.

By connecting global talents, skills, and experiences, we cultivate projects that leave a lasting impact on communities. We harness the collective wisdom of our diverse team, drawing on international expertise and innovative technology to craft solutions that resonate.

We engage the brightest minds to design, engineer, and help construct public transportation systems and infrastructure that invigorate communities. A holistic enterprise, we blend global knowledge with local expertise, enhancing our US capabilities with international talent and applying global best practices to address unique challenges.

This approach has been instrumental in our success with major signal modernization programs, including CBTC implementations for the New York Metropolitan Transportation Authority since 2015 and the San Francisco Bay Area Rapid Transit since 2020, as well as with US high-speed rail initiatives, such as California High-Speed Rail Track and OCS design.

We work collaboratively with our clients and partners throughout the entire project life cycle.

SYSTRA offers a three-step support solution to make your project a reality.

- 1 Enhancing understanding the environment and customizing solutions:** SYSTRA engages in a process to define project requirements. This involves conducting evaluations, preliminary and feasibility studies, as well as in-depth technical analyses of various potential solutions.
- 2 Designing systems and preparing for operations:** At the project's inception, we dive in to design efficient systems and collaboratively develop a roadmap for implementation.
- 3 Implementing the project:** Collaborating closely with our clients, we guide them through every phase of implementation, while supervising verification and validation processes for testing and commissioning. Innovative projects demand tailored management techniques to navigate distinct technical hurdles, and SYSTRA excels in guiding our clients through these challenges.



Ethics | Health, Safety, and Security (3S) | Quality



Resolute business ethics are central to our operations. We are committed to doing our work ethically, responsibly, and with a **Compliance Policy** sets the tone for ethical behavior and provides clear guidance to our employees.



Central to how we operate is ensuring the health, safety, and security of our people and partners. Our **3S Management System** is an organizational framework used to measure our 3S and operational performance.



Quality standards are integral to our processes. SYSTRA has an established **Quality Management System** that sets our high quality standards and ensures that client, statutory, and regulatory requirements are met.

Working Together for a Sustainable Future

Sustainability is not just our goal, it is the foundation of our business. We strive to minimize environmental impacts, enhance sustainable development, and maximize the long-term value of transportation projects.

With a global reach, we have a vast network of expertise and best practices to optimize transportation systems worldwide. Our collaborative approach embraces innovation and ensures that every project considers its environmental and social impact.

Sustainable Design: A Holistic Approach

Our proactive sustainable design approach integrates environmental considerations throughout the entire project lifecycle. From initial planning and design to construction, operation, and maintenance, we prioritize:

- **Efficiency and Zero-Emission Mobility:** Promoting the use of sustainable modes of transportation and minimizing environmental impact.
- **Community Engagement:** Partnering with local, minority, women, and veteran-owned businesses to support the growth of local economies and build strong community relationships.

Our team of LEED-certified professionals brings a wealth of expertise to every project, delivering high-performance, energy-efficient, and environmentally sensitive solutions.



OUR EXPERTISE

SYSTRA offers a comprehensive array of services and expertise spanning all facets of public transportation and essential infrastructure, including educational institutions and housing developments.

In addition to working within conventional design-bid-build project structures, SYSTRA excels with the successful delivery of design-build, progressive design-build, public-private partnerships, and construction manager/general contractor project delivery methods. In this evolving and increasingly complex environment, the designer is more essential than ever to help secure and deliver safe, sustainable transportation solutions. SYSTRA is adept at cost reduction, rapid delivery, innovation, alternative technical concepts, safety, and quality. We understand what is at stake during the project life cycle and develop efficient, technically sound, and creative solutions that contractors and owners expect.

MARKETS WE SERVE

- Bridges and Tunnels
- Bus
- Commuter and Intercity Rail
- Freight Rail
- High-Speed Rail
- Light Rail
- Mass Rapid Transit
- Education and Housing Facilities



Architecture

- Pre-Design Services
 - Master Planning
 - Feasibility Studies
 - Site Selection and Analysis
 - Programming
 - Project Conceptualization
- Design Services
 - Architectural Design
 - Interior Design
- Bidding and Negotiation Support Services
- Construction Phase Services
- Specialty Services
 - Sustainable Design
 - Code Compliance
 - ADA Compliance
 - Building Envelope Condition Analysis
- Post-Occupancy Evaluation

Infrastructure

- Project and Program Management
- Civil Engineering
- Structural Engineering
- Track Design
- Rail Rehabilitation
- Bridges, Tunnels, and Underground Structures
- Planning and Operations Analysis
- Building Information Modeling (BIM)



Systems and Power

- Communications-Based Train Control (CBTC)
- Positive Train Control (PTC) (ACES & I-ETMS)
- Signals and Automatic Train Control
- High-Speed Rail Train Control (ETCS)
- Systems Assurance
- Systems Integration and Interface Management
- Control Systems (SCADA, ATS, RTU)
- Control Centers
- Centralized Traffic Control
- Radio Systems
- Communications Systems Design
- Electronic Security Systems
- Systems Security and Cybersecurity
- Software Assurance
- Verification & Validation
- Wayside Signaling Design and Integration
- Carborne Systems Design and Integration
- Signal Block Design and Checking
- Microprocessor Checks using SATS Simulator Software
- Systems Installation Design, Planning, Testing, and Troubleshooting
- Cab Signaling
- RAM
- Quality Assurance
- Highway Grade Crossings
- Rolling Stock
- Systems Facility Design
- ConOps
- Power Systems
- Overhead Contact Systems

Construction and Program Management

- Design Review, Constructability Review, and Pre-Construction Services
- Resident Engineering and Construction Inspection
- Value Engineering
- Utility and Agency Coordination
- Project Staff Training
- Contract Administration and Data Management
- Claims Avoidance, Assistance, and Analysis
- Progress Payments and Reporting
- Procurement Administration and Project Controls
- Systems Testing and Integration
- Project Commissioning and Acceptance
- Quality Assurance and Quality Control
- SSI Document Controls

Architecture

SYSTRA's architecture group is passionate and collaborative, infusing sustainability and innovation in our designs. Our dynamic team of professionals are committed to enriching learning through design to inspire future generations, and creating dynamic transportation facilities to enhance the travel experience.

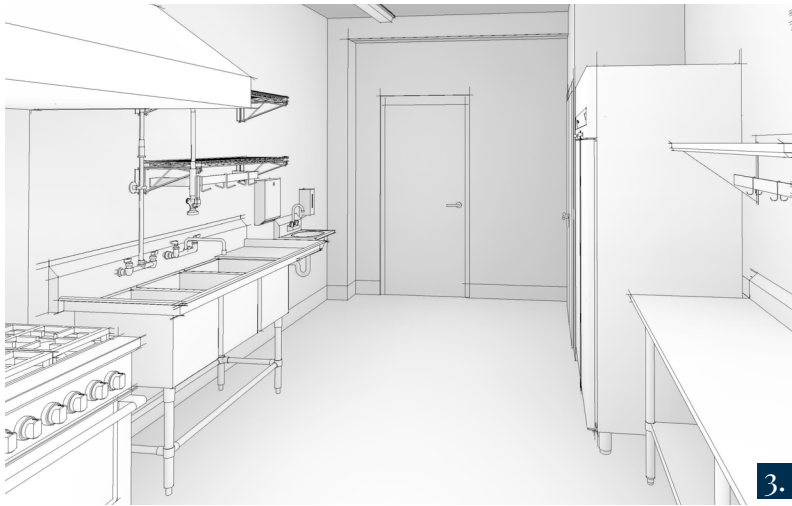
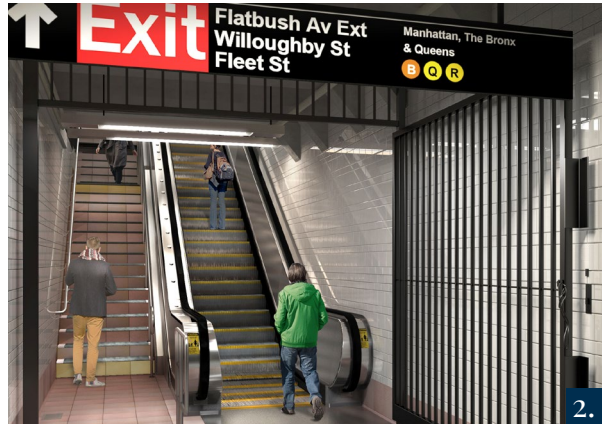
We offer a comprehensive range of services. Our enthusiastic and collaborative approach ensures that we tailor solutions precisely to our clients' needs.

As an integrated, multidisciplinary practice, we extend our expertise to clients public transportation (maintenance and support), public education, and public housing sectors. Our work revolves around efficient, sustainable, safe, and attractive designs that connect, sustain, and educate our communities.



NJ Transit Maplewood Bus Operator's Facility and Parking Project

SYSTRA is leading the team providing architecture and engineering design for an elevated bus operator day room, surface parking lot, and roof over the parking expansion area at the facility in Maplewood, NJ.



1. NYC School Construction Authority PS 071 Rose E. Scala Full Program Accessibility: SYSTRA provided architectural and engineering design services for a building addition with an elevator, ADA toilet rooms, and an ADA accessible ramp at the main entrance at this school in Bronx, NY.

2. MTA Construction & Development Escalator Replacements: The lead designer on the design-build team, SYSTRA is leading the architectural design, civil and structural engineering, and construction oversight for the replacement of escalators at stations in Brooklyn and the Bronx, NY

3. NYC Housing Authority Architectural/Engineering On-Call Contract: SYSTRA designed and provided construction administration services for community center upgrades at various NYCHA developments. Our work included the design of the kitchen renovation at Rutgers Community Center in Manhattan, NY.

4. NYC School Construction Authority: SYSTRA provided architectural design and construction support services for a school based health clinic at Franklin D. Roosevelt High School in Brooklyn, NY. The project was for the conversion of the nurse's suite and an adjacent office into a functional school-based health clinic. SYSTRA coordinated and organized the furniture and equipment in each room to meet the needs of each space.

5. Amtrak Beech Grove Shops Upgrades: SYSTRA designed multiple system upgrades to the locker rooms and bathrooms located in the diesel shop located in the railway maintenance facility in Beech Grove, IN. This involved a redesign for ADA compliance, as well as the reconfiguration of the spaces to adjust to an increasingly diverse workforce.



Design and Engineering

Ensuring Safe, Efficient, and Reliable Transportation of Passengers and Cargo

Transit and rail operators shoulder a significant responsibility in ensuring the safe and efficient movement of people and goods. In the wake of industry challenges, including the pursuit of increased ridership and optimizing public and private investments for maintaining a state of good repair, owners and operators face the dual mandate of meeting current demands while preparing for growth.

To do this, transit and rail operators are increasingly turning to technology-driven, innovative solutions to enhance connectivity and promote sustainable, equitable transportation across rail and transit networks.

At SYSTRA, we are committed to collaborating with you to achieve these pivotal objectives.



Amtrak Penn Station New York (PSNY)

Expansion: SYSTRA is an integral member of the team preparing the preliminary design of the first new tracks, platforms, and concourses connected to PSNY in more than a century. The team will produce railroad concepts that will be analyzed as part of the Federal environmental review for the expansion.

California High-Speed Rail Track and OCS

Design: SYSTRA is delivering a comprehensive, efficient, and state-of-the-art track and OCS design for the initial 171-mile passenger service connecting Merced to Bakersfield.

This historic achievement marks the first high-speed rail track and OCS initiative in the US.

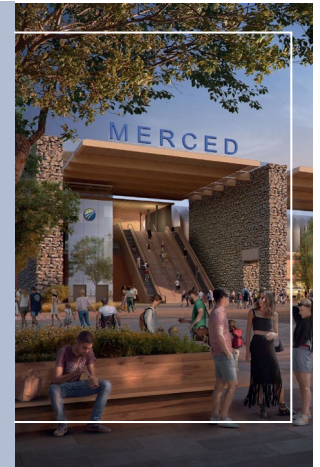


Bay Area Rapid Transit Train Control Modernization Program (CBTC):

SYSTRA is leading the team providing design services during construction for the deployment of BART's next generation train control system (CBTC). This is one of the most complex CBTC modernization programs in North America.

California High-Speed Rail Merced-Madera

Design: SYSTRA is managing the technical configuration, ensuring the consistency and reliability of the rail systems design. Our work involves systems engineering and integration to manage the complex interplay of the various rail systems. SYSTRA is also providing structural and seismic design for the project's structures.



Los Angeles County Metropolitan Transportation Authority Systems Design and Engineering Services:

SYSTRA has helped shape the train control and signaling systems throughout the LA Metro's rail network, through various multi-year, multi-million-dollar systems engineering task-order based contracts and standalone projects.

MTA C&D East Side Access Harold Interlocking

Reconfiguration: SYSTRA is responsible for the final design of the 12kV 25 Hz AC traction power catenary system used by Amtrak in Harold Interlocking and Sunnyside Yard in Queens, NY, and the construction effort to enact the final design.





Construction Management

Transforming Designs into Reality

SYSTRA offers the full range of construction management services. We provide specialty services for project scheduling, construction staging plans, document control, contract administration, safety expertise during construction, quality control, inspection, and payments.

Having a proficient construction management team is essential to peace of mind for owners, operators, and stakeholders. SYSTRA represents our clients' interests and works with all parties to deliver the project on time, within budget, and to our clients' standards of quality, scope, and purpose.

Our multidiscipline team and flexible approach accommodate requirements for a team working in the field as the owner's representative and as an

extension of staff to owners.

Our professionals possess the engineering and construction experience to provide real-world, cost-effective solutions to the challenges that owners, contractors, engineers, and architects face throughout construction.

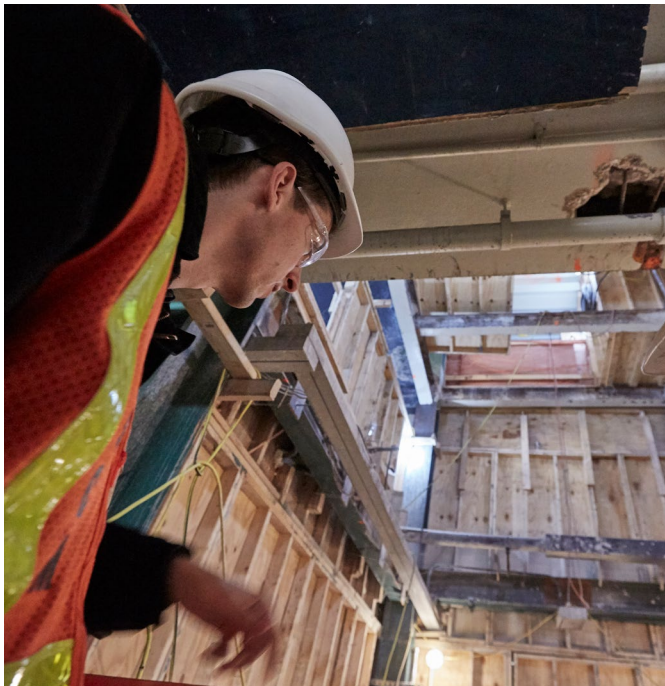
We establish plans for project safety and security and help our clients manage risks using project management information systems and planning techniques, like critical path and construction methods.

From our years of experience, SYSTRA understands how to advance construction while minimizing interruptions to operations and impacts to customers.



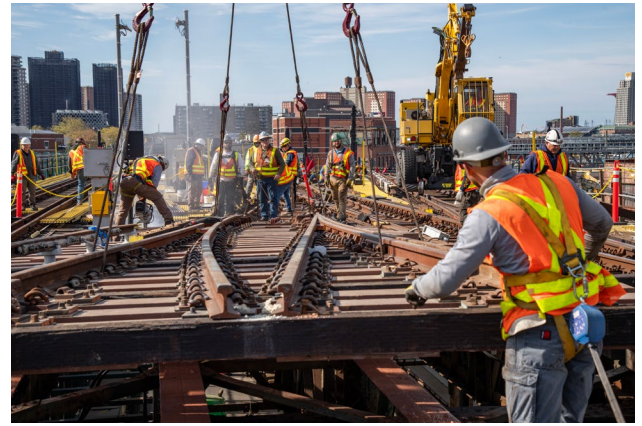
NYMTA 149th Street-Grand Concourse Station Complex:

SYSTRA is coordinating the design and overseeing the construction of ADA upgrades to this the multilevel station- the fourth busiest in The Bronx, with nearly four million riders a year.



NYMTA Accessibility Upgrades at Bedford Park Boulevard Station:

Serving as the consultant construction manager (CCM), SYSTRA led the implementation of accessibility upgrades, including the installation of three new elevators at the station servicing the B and D subway lines.

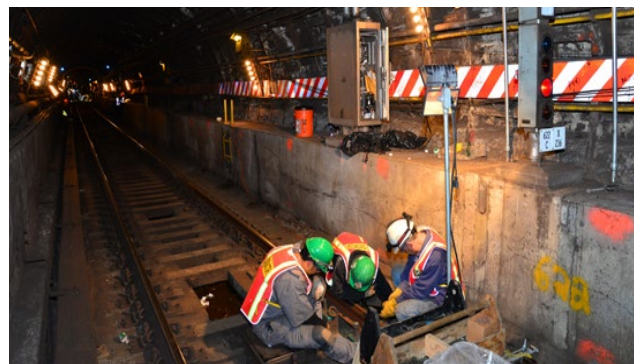


NYMTA Culver Line Signal Modernization: SYSTRA is overseeing the installation, testing, and commissioning of the CBTC system, auxiliary wayside system, and solid state interlocking system.



CTDOT Metro-North Network Infrastructure Upgrade:

SYSTRA is providing construction engineering and inspection support for this multi-phase infrastructure upgrade resulting in 800 new security cameras along Metro-North's New Haven Line.



NYMTA Passenger Identification CCTV System at 88 Stations:

SYSTRA is overseeing, coordinating, and monitoring the furnishing and installation of a new CCTV passenger identification system throughout New York City's subway network.



We Are Your Alternative Project Delivery Partner

In addition to working within conventional design-bid-build project structures, SYSTRA excels in delivering projects via alternative project delivery methods, including design-build, progressive design-build, construction manager/general contractor (CM/GC), and public-private partnerships (PPP). In this dynamic and increasingly complex environment, the designer is essential to supplying safe, sustainable, and cost-effective solutions. With a global network of engineering centers, SYSTRA offers unique advantages, including work in overlapping time zones, maximizing efficiency and reducing costs through global resource allocation.

Our Commitments to Clients and Partners

- **Safety:** Make it a priority, train staff, and emphasize corporate commitment.
- **Quality:** Perform work right the first time and conduct independent quality reviews.
- **Schedule Compliance:** Understand the complexities involved in alternative design and construction scheduling.
- **Cost Containment:** Develop contract compliant and cost-effective solutions.
- **Teamwork:** Share responsibility, lead effectively, and trust in project execution.
- **Access to Executives:** Communicate directly with decision makers.
- **Risk Management:** Understand how to manage risks on complex projects.
- **Effective Communication:** Understand that early engagement and communication are critical to successful delivery.



New York MTA Penn Station Access

SYSTRA is performing design and engineering of track, AC traction power, signals, stray current and corrosion control, and systems integration for this design-build project.



CTA Red Line Extension

SYSTRA is the lead designer, as part of the Walsh-VINCI Transit Community Partners joint venture, leading the design of multiple systems, including structural, track, signals, communications, power, and electrical systems. We are also responsible for systems integration and validation.



MWAA Dulles Railyard and Maintenance Facility

SYSTRA led the design and coordination of trackwork and structures, third rail, the traction power system, and electrical substations. We also coordinated the design of the automatic train control system and supported testing and certification.



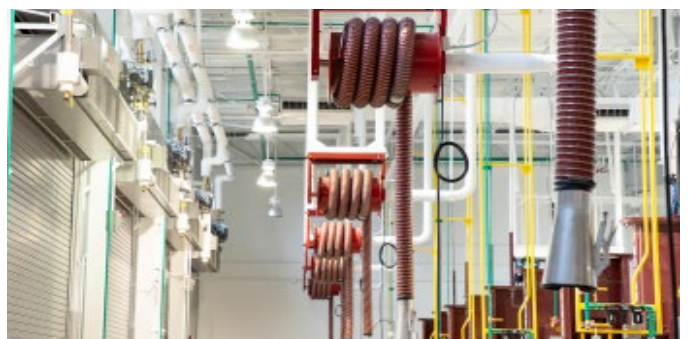
LIRR Mainline Third Track Expansion

As part of the program management team, SYSTRA planned, oversaw, and monitored construction activities, monitored the contractor's QA/QC compliance and cost and schedule controls, and coordinated force account and start up, commissioning, and acceptance.



Washington, DC DOT H Street-Benning Road Streetcar Project

SYSTRA was the lead designer responsible for architecture, electrical traction power, and track alignment design.



WMATA Andrews Federal Center Bus Facility

SYSTRA was the lead designer/engineer of record for architecture and communications, electrical, and industrial engineering. The project was Engineering News Record's Mid Atlantic 2019 Best Project.

Innovation

The Product of Bold Leadership and Collective Intellect

At SYSTRA, innovation meets practicality to shape the future. We are dedicated to crafting solutions that not only tackle today's challenges but also pave the way for tomorrow's advancements. Our approach is anchored in the human experience, ensuring that every solution we devise is not only efficient but also enhances safety and accessibility. We address design challenges, keeping in mind the needs of people who will interact with our creations.

Our focus areas revolve around:

- **Enhancing Performance and Safety:** We are committed to elevating the efficiency and safety standards of transportation systems, creating environments where people can travel with peace of mind.

- **Promoting Sustainable Infrastructure:** Sustainability is at the core of our designs. We strive to develop infrastructure solutions that minimize environmental impact and contribute to a greener, more resilient future.
- **Embracing New Technologies:** We embrace the power of innovation to leverage cutting-edge technologies that revolutionize the way we approach transportation and infrastructure projects.

Our proactive innovation policy ensures that our solutions are tailored to meet the evolving needs of tomorrow's world. This commitment is woven into every aspect of our work, from conceptualization to implementation.

Furthermore, SYSTRA supports our clients through their digital, ecological, and energy transitions.



Encourage Innovation from Within: Our employees are the driving force behind our innovation strategy. In 2020, we introduced the SPARK intrapreneurship program. This initiative was designed to ignite creativity, empower our teams, and foster the development of new services tailored to address our clients' evolving needs and challenges.



Maximize Efficiency: We believe innovation lies in enhancing traditional design methodologies to minimize resource usage while optimizing efficiency over time. Through transparent and forward-thinking value loops, we strive to conserve resources, anticipate market trends, and streamline logistics. Additionally, we prioritize the versatility of the infrastructure we create, ensuring it can adapt to evolving needs and circumstances.



Drive Progress Confidently: We recognize that adopting technological solutions introduces technical, economic, and organizational uncertainties. Beyond mere hype, we delve into the feasibility of integrating these innovations into your systems. Our expertise lies in helping clients analyze the practicality of deploying new technologies across conventional and emerging modes of transportation. With SYSTRA by your side, you can navigate the complexities of technological advancement with clarity and confidence.

The RAILSIM® Software Suite Advantage

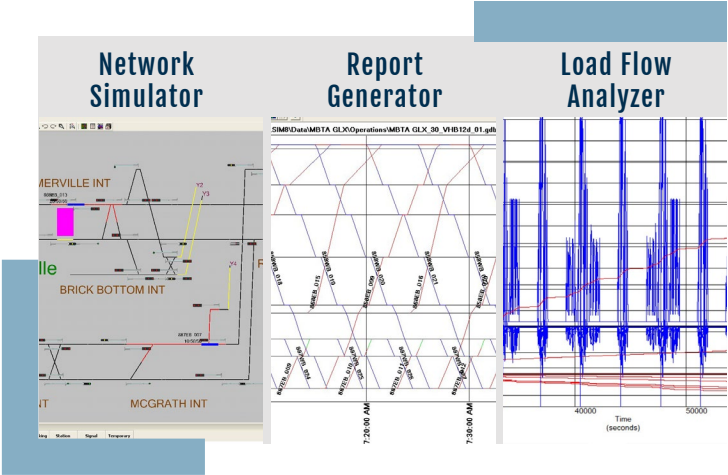
RAILSIM® is SYSTRA’s cutting-edge simulation modeling software tailored to the public transportation industry. RAILSIM equips operating staff and engineering teams with crucial information and data, empowering them to efficiently manage their systems with precision.

At the heart of RAILSIM lies its comprehensive simulation capabilities, which encompass every aspect of a rail system. From intricate train-infrastructure interactions to complex network operations, RAILSIM delivers unparalleled insights for optimized system performance.

Flexibility is key with RAILSIM. It is fully customizable and adaptable to meet the unique requirements of any rail or rapid transit system.

The RAILSIM suite comprises a range of modules crafted to simulate and analyze various facets of rail and rapid transit systems. From operations and signals engineering to electric traction power networks, each module offers in-depth examination and analysis capabilities.

With RAILSIM, you can delve into essential aspects of your system, such as power demand, consumption, and system performance, enabling informed decision-



making and strategic planning. Our software facilitates alternatives analysis for scenarios like track outages, infrastructure configurations, and engineering designs, ensuring comprehensive evaluation and optimal solutions.

- Schedules and Operating Plan Development.
- Alternatives Analyses.
- Equipment and Rolling Stock Performance.
- Network Operations (Delay & Performance Analysis).
- AC and DC Electric Traction Power Load Flow.
- Signal Systems Designs.

Digital Solutions



BIM In One Click
produces BIM linear infrastructure modeling.



Carbontracker
monitors the carbon footprint of your project.



eLODy
performs multifformat BIM verification.



PABLO
builds BIM data of the asset information model.



SAFEbyBIM
identifies and manages security risks.



TESS
optimizes electric vehicle infrastructure, fleet, and operations.



Vizeo
manages and coordinates design reviews.



SYSTRA

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