Zeman
Railway Solutions

Klik Bühnensysteme
RAIL TECHNOLOGY

QUALITY BUILT ON EXPERIENCE

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ZEMAN GROUP
ENGINEERING POWER SINCE 1965

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ONE GROUP FOR ENGINEERING, PRODUCTION AND ASSEMBLY

The Zeman Group, headquartered in Vienna, Austria, has been active in steel construction since 1965. Today, the family-owned group comprises 17 subsidiaries in 10 countries and employs more than 650 people from 33 nations.
Its activities include engineering, steel manufacturing and construction, glass technology, and general contracting for industrial, commercial, infrastructure, and architectural projects.

A key strength of the group is the close collaboration between its companies. From planning and engineering to structural analysis, production, delivery, and assembly, projects are coordinated and executed within the group. This integrated business model ensures efficient processes, reliable execution, and consistent quality across the entire value chain. Production facilities such as Zekon in Poland and Zeman Çelik in Türkiye form the backbone of these capabilities and support the delivery of demanding projects with efficiency and precision.

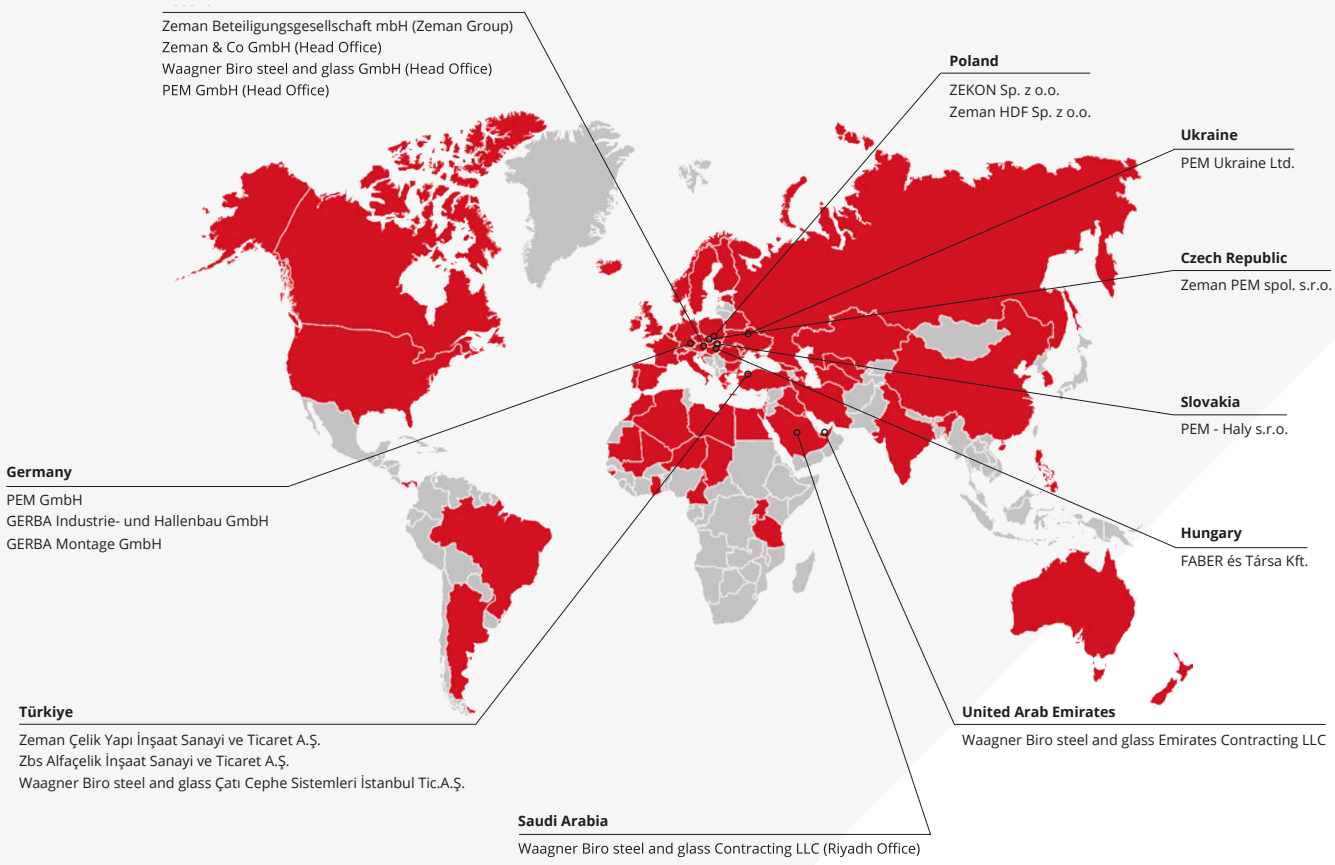
The group is also experienced in delivering custom solutions for complex project conditions, including refurbishments, upgrades to existing structures, and technically demanding conversions. This ability to adapt infrastructure to existing buildings, spatial constraints, and ongoing operations is a key part of the group's engineering approach and an important foundation for specialized maintenance solutions.

BUILT ON INDUSTRIAL STRENGTH

- ✓ Engineering, production and assembly
- ✓ 50+ years of industrial project experience
- ✓ International project delivery
- ✓ Expertise in steel, glass and special structures
- ✓ Strong foundation for integrated rail solutions

The group's technical and architectural excellence is also reflected in numerous national and international awards for steel design and steel construction received by its companies. Building on this foundation, the group has developed Zeman Railway Solutions as a high-quality integrated offering for rail operators and is now bringing its proven maintenance solutions to further EU markets.

ZEMAN GROUP COMPANIES AND PROJECT LOCATIONS



ZEMAN RAILWAY SOLUTIONS

INTEGRATED ROOF WORKING PLATFORMS FOR RAIL DEPOTS

The maintenance of modern rolling stock has evolved into a highly specialized discipline. Increasing system density on the roof, with components such as HVAC units, pantographs, and communication equipment, demands precise access concepts that go beyond conventional solutions. At the same time, operators face growing pressure to standardize processes across fleets while maintaining flexibility for different vehicle types and depot layouts.

This requires infrastructure that can adapt to changing technical requirements without interrupting ongoing operations. Zeman Railway Solutions (ZRS) addresses this complexity with tailor-made platform systems that are engineered as part of the overall depot ecosystem rather than as standalone equipment. Each solution is developed with a clear focus on operational flow, ensuring that maintenance sequences remain structured, predictable, and scalable. What sets ZRS apart is the combination of interdisciplinary expertise: structural steel engineering, mechanical systems, and control technology are developed in a coordinated approach.

FUTURE-READY FOR CHANGING FLEETS AND DEPOT LAYOUTS

- ✓ Integrated into depot operations
- ✓ Retrofit-ready without downtime
- ✓ Safe, ergonomic roof access
- ✓ Standardized across mixed fleets
- ✓ Steel, mechanics and controls in one system

This integration enables solutions that not only meet technical requirements but also align with real-world workshop conditions and long-term operational strategies. With roots in over six decades of steel construction and decades of experience in platform and handling systems, Zeman brings industrial robustness together with application-specific engineering. The result is infrastructure that supports railway operators in maintaining performance, reliability, and operational continuity across their entire fleet lifecycle.

"The projected additional work and associated costs were managed on schedule and within budget. Thanks to the exceptional effort, project execution was streamlined."

Project Manager,
ÖBB Technische Services GmbH

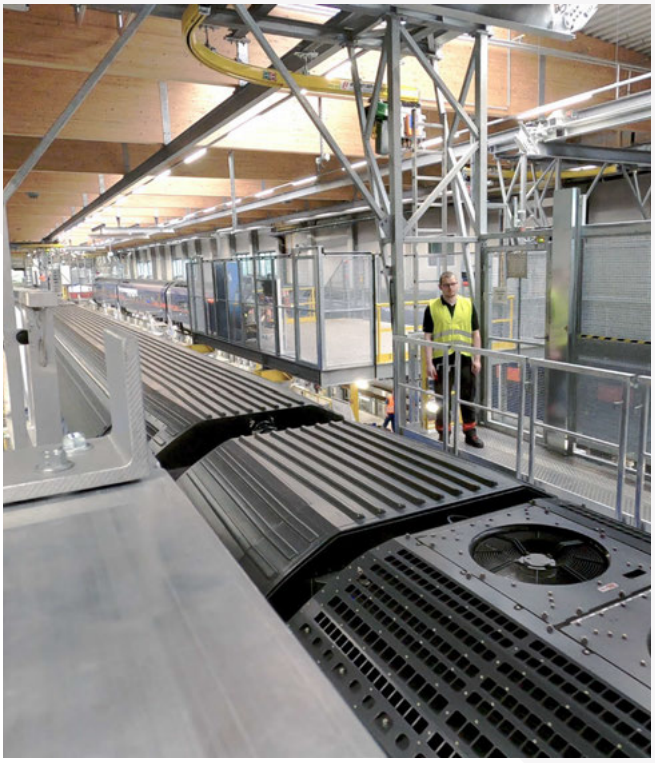


photo: fotografiabiznesowa.pl

FROM CONCEPT TO COMMISSIONING

ENGINEERING TO HANDOVER UNDER ONE RESPONSIBILITY

Zeman Railway Solutions provides full project responsibility from the first technical assessment to the final operational handover.

Every project begins with a detailed analysis of the maintenance process, vehicle geometry, and spatial conditions within the depot.

Based on this, the engineering team develops the steel construction design.

Project execution typically includes:

- Technical analysis and concept development
- Structural and static design
- Detailed engineering and production planning
- Industrial manufacturing within the Zeman Group
- Installation within operational maintenance facilities
- Commissioning, testing, and technical documentation

Particular expertise lies in integrating **new maintenance infrastructure into existing** workshops while ongoing operations continue.

photo: fotografiabiznesowa.pl

SYSTEM DESIGN & ARCHITECTURE

MODULAR PLATFORM DESIGN FOR DEPOT CONDITIONS

The roof working platforms are engineered as modular systems precisely aligned with both rolling stock geometry and the spatial constraints of the maintenance facility.

Lightweight aluminum structures with **slip-resistant R11** surfaces provide a durable working area, while automated rack-and-pinion drives ensure smooth and reliable movement of the platform modules.

Encapsulated drive units protect the mechanical components from dust and harsh workshop conditions. The overall architecture allows seamless integration into existing depot infrastructure while maintaining the required railway clearance profiles.

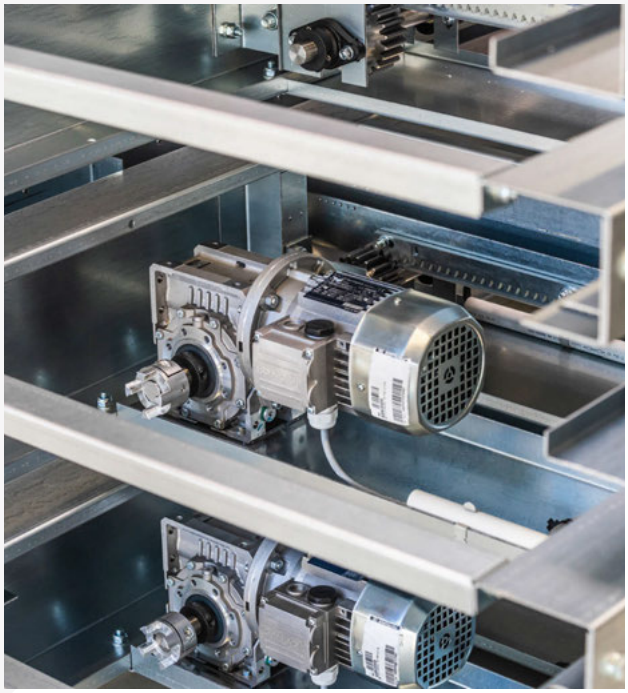


photo: Bernhard Moisi

LIFECYCLE, SAFETY & SYSTEM INTEGRATION

ENGINEERED FOR MAXIMUM OPERATIONAL SAFETY AND INTEGRATION

Our solutions are a long-term investment for railway maintenance depots, with operational lifespans typically measured in decades. Durability, maintainability, and adaptability are therefore key design principles from the earliest planning stage. A comprehensive safety concept ensures reliable operation under all workshop conditions. This includes interlock systems for overhead line integration, monitored access points, and controlled movement sequences.

Important lifecycle considerations include:

- Maintenance-friendly drive units and components
- Replaceable modular platform segments
- Long-term spare parts availability
- Retrofit capability when vehicle types change
- Expandability when adapting or extending maintenance halls

The platforms can be fully integrated into the depot's central control architecture, enabling coordinated operation with crane systems and other infrastructure components.

Certifications within the Zeman Group:

- EN 1090-1
- ISO 3834-2
- ISO 9001
- ISO 14001

Safety is not an add-on module but an integral part of the design.

photo: fotografiabiznesowa.pl

OPERATION & WORKFLOW EFFICIENCY

RELIABLE WORKFLOWS IN DEPOT OPERATION

In daily maintenance operations, roof working platforms provide a continuous and secure workspace along the train roof. They enable safe and ergonomic access to critical components while supporting efficient workflows inside the depot. **The modular configuration allows the system to adapt** to different vehicle lengths and maintenance requirements within the same facility.

photo: fotografiabiznesowa.pl

MEET OUR TEAM

photo: fotografiabiznesowa.pl

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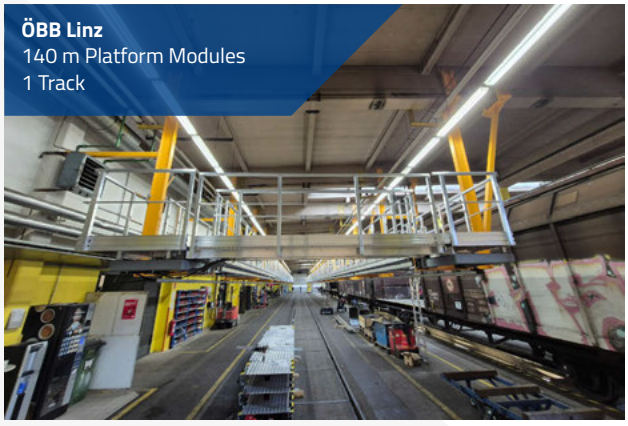
SELECTED REFERENCES

ÖBB Innsbruck
420 m Platform Modules
2 Tracks



ÖBB Linz
140 m Platform Modules
1 Track

DB München I & Feld 8,9
290 m Platform Modules + Crane
2 Tracks

ÖBB Salzburg
132 m Platform Modules
1 Track

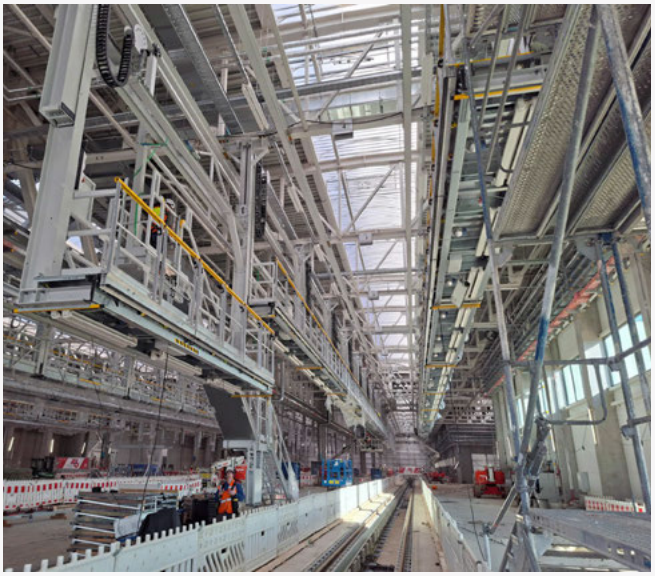
SOB Samstagern
450 m Platform Modules
2 Tracks

KVG Braunschweig
45 m Platform Modules
1 Track (Bus)

PROJECT IN DETAIL

DB MAINTENANCE SITE IN COTTBUS
LARGE-SCALE ROOF WORKING PLATFORMS FOR ICE MAINTENANCE

Project period: 2023–2027
Location & investor: DB Fahrzeuginstandhaltung GmbH, new Cottbus maintenance site
Client: DB Fahrzeuginstandhaltung GmbH
Planning: DB Systemtechnik GmbH, Infrastructure Vehicle Maintenance
Project planning & structural analysis: Zeman & Co GmbH and KLIK Bühnensysteme GesmbH
Execution class: EXC 3 / EXC 2



SCOPE OF SERVICES

As part of the construction of the new ICE maintenance site in Cottbus, one of the largest and most technically sophisticated roof working platform systems in the European high-speed sector was implemented, including extensive system integration and infrastructure components:

- Roof working platform system for three tracks (122-124)
- 426 height-adjustable modules (7 m each, 132 modules per track, approx. 530 m in total per track)
- Stepless height adjustment from +2.49 m to +5.10 m above top of rail
- 3,000 m total platform length
- 84 movable access stairs with multi-level transition platforms
- Continuous crane runway system along the full hall length
- Suspended system design from the roof structure

TECHNICAL COMPLEXITY

The system is designed for the overhaul of 12- and 13-car ICE 4 trains and already considers future high-speed platforms. Its modular structure enables flexible 28 m platform configurations and differentiated height levels within a single track.
Motor-driven gap bridging **ensures near gap-free adaptation** to various vehicle contours and maximizes work safety.
A multi-level safety concept with **monitored access doors**, installation space monitoring, redundant overload protection, and visual status indication ensures safe operation.

PROJECT CLASSIFICATION

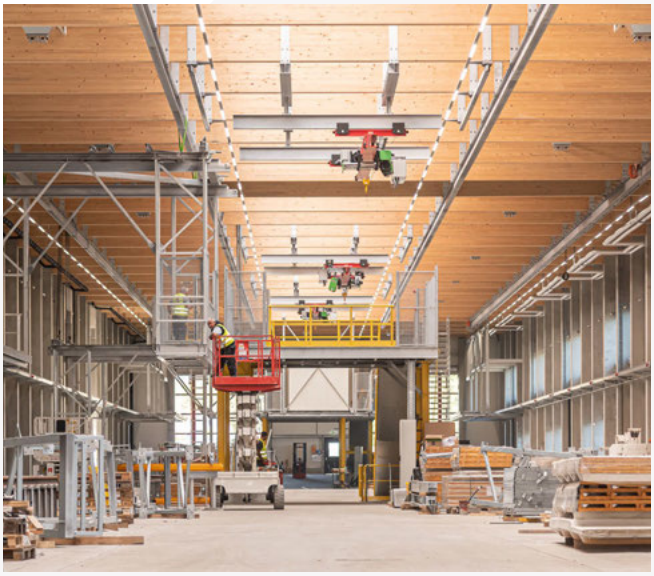
The Cottbus maintenance site is a reference location in the European high-speed maintenance market. The combination of large-scale steel construction, precise mechanics, safety-oriented control technology, and digital system integration demonstrates the ability to holistically develop, structurally design, and implement highly complex workshop infrastructures in an integrated way.
The facility forms the technological backbone of the ICE 4 overhaul in the new Cottbus maintenance site and is designed for long-term scalability and future vehicle generations.

PROJECT IN DETAIL

ÖBB WORKSHOP IN SIMMERING, VIENNA
ROOF WORKING PLATFORMS AND STEEL CONSTRUCTIONS

Project period: January 2024 – December 2024
Location & investor: ÖBB-Technische Services-GmbH, Grillgasse 48, 1110 Vienna
Client: ÖBB-Technische Services-GmbH and KLIK Bühnensysteme GesmbH
Planning: Planungsbüro Baumert & Peschos,
FahrKraft Industrieplanungs- und Beratungs-GmbH
Project planning & structural analysis: Zeman & Co GmbH and
KLIK Bühnensysteme GesmbH
Execution class: EXC 2

Watch the ZRS video
zeman-group.com/zrs-vid/



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SCOPE OF SERVICES

The project in Vienna represents a significantly more comprehensive system solution and, in addition to roof working platforms, also includes substantial steel construction and infrastructure services:

- **260 tonnes of steel construction**
- **900 m of crane rails**
- **76 roof working platform modules** with lengths between 6 m and 8 m
- Total platform length: **210 m**
- **240 m of track elevation** for a measuring track with a length accuracy of ±1 mm
- 1 gondola module with 2 × 9 m platform modules
- 350 m² of sheet metal cladding
- Rail systems
- Extension and gondola modules including crane systems

TECHNICAL COMPLEXITY

Particularly noteworthy is the precision of the **track elevation for the measuring track** with a length accuracy of ±1 mm. This requirement places high demands on surveying, manufacturing, and assembly coordination.
The integration of **crane rails over 900 m** shows that not only a roof working platform system but also a comprehensive maintenance infrastructure has been created here. The combination of stationary platforms, gondola modules, and crane systems enables a variety of maintenance scenarios: from conventional roof access to selective, mobile interventions.

PROJECT CLASSIFICATION

The ÖBB workshop in Simmering, Vienna is significantly larger in terms of infrastructure than the SOB service centre in Samstagern and forms a strategic reference location in the urban core of Vienna.
The project demonstrates the ability to implement complex workshop facilities with a high volume of steel structures, precise track structures, and integrated lifting and access systems as one complete package.
ÖBB Simmering focuses on large-volume, cross-system infrastructure services.

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Zeman
Competence in Steel