

# Shaping the Future of Reliable Mobility

**T·LYNX**  
Our Eyes on Safety



# Continuity that becomes the future



Every path of growth brings with it a moment of transformation and conscious transition, which does not interrupt history, but strengthens it and propels it towards new goals.

It is from this evolutionary process that **T-LYNX** was born, the expression of a broad, dynamic, and future-oriented strategic vision.

**T-LYNX** represents the natural evolution of experience gained in over twenty years of activity, developed under the name **TSL Engineering** in the search for innovative and highly technological solutions dedicated to the **safety and efficiency of transport infrastructure**.

This progress has led to specialization in integrated engineering and the consolidation of a leading role for designers and managers in the analysis, design, monitoring, and technical control of roads, highways, railways, airports, bridges, viaducts, and tunnels, with the aim of improving their performance in terms of safety.

At the heart of this evolution is a multidisciplinary group of people capable of transforming data, design and strategic vision into concrete solutions, supporting clients and stakeholders in the most complex decisions.

With **T-LYNX**, this legacy is renewed: a more contemporary identity that enhances engineering skills, design capabilities, and systemic vision to respond effectively to the challenges of increasingly complex and constantly evolving infrastructure networks.

# At the heart of our identity

Our actions are based on expertise, responsibility, and innovation. Our Mission and Vision represent the most authentic expression of our approach to guiding every choice towards safer mobility.

## Mission

By combining technical excellence, experience and strategic vision, we are committed to improving the safety and efficiency of road infrastructure through innovative and sustainable engineering solutions. Our goal is to contribute to safer, more efficient and more reliable mobility, putting people's safety at the heart of every decision.

## Vision

To be an international benchmark for road safety, transforming innovation and design into concrete steps towards a future in which mobility is safer, smarter and more sustainable.



# The values that guide us

Our values guide us in our daily work. They inspire us to listen to the needs of our customers, to strive for quality in our research, to constantly improve our products, and to care for people.

## Professionalism and excellence

We pursue excellence by building solid relationships with employees and customers, valuing competence, professionalism and respect. We believe in a healthy working environment that fosters a sense of belonging and team spirit.

## Customer care

We listen carefully to our customers' needs, offering appropriate solutions and building relationships based on trust and mutual respect.

## Safety

We develop products, systems and services aimed at improving road safety and facilitating infrastructure monitoring and maintenance.

## Research and innovation

Research and innovation are the cornerstones of our work. They enable us to continuously improve, offering cutting-edge solutions with a focus on environmental and economic impact.

# Technologies that make the difference

**T-LYNX** innovation stems from the analysis of actual transport infrastructure conditions and translates into concrete solutions for safety and performance. Pole-ground reinforcement structures, bases, and smart barriers integrate research and field experience to control impact energy, improve reliability, and ensure regulatory compliance and durability over time.

We have decided to illustrate our universe of solutions, born from many years of experience developed in the field and reinforced by our commitment to constantly improve reliability and performance.

## Numerical Simulations

Computational engineering for complex structures

## Lo.S.T.

The barrier that absorbs impacts to save structures

## Bass Rock

Drive safe where the embankment is missing

## A.To.S.

Turning weak soils into strong supports

## G.R.E.EN.

Defining the future of road safety barriers

The logo for T-LYNX, featuring the letters 'T-LYNX' in a bold, purple, sans-serif font. A small yellow diamond is positioned between the 'T' and 'L'. The 'Y' and 'N' are connected at their top points, and the 'X' has a stylized, wing-like shape at its top right.

# G.R.E.EN.

**G.R.E.EN.**, Guard Rail for Energy and Environment, is a patented road safety barrier that combines vehicle containment with photovoltaic panels, LED lighting and smart sensors.

Designed to combine safety and innovation, it enables the production of energy from renewable sources and active interaction with the infrastructure, making it truly smart.

The blade, suitably shaped to accommodate the photovoltaic panels and to integrate the spacer function, is fixed to the support posts, simplifying installation and improving impact response.

## Defining the future of road safety

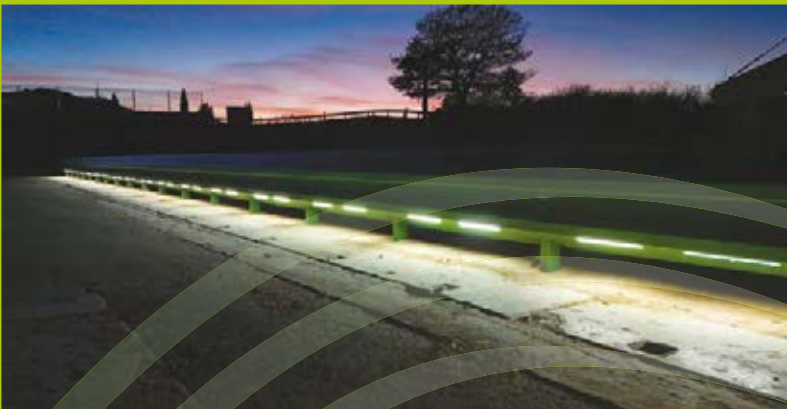
Road infrastructure is called upon to evolve towards smarter, safer, and more sustainable models. **G.R.E.EN.** transforms a traditionally passive element into an active component of the network, making it eco-sustainable and improving visibility, information, and integration with new-generation mobility systems.

### Why it is important

**G.R.E.EN.** offers a solution that combines safety, technology, and sustainability, supporting the evolution of road networks towards increasingly advanced standards. The system guarantees renewable energy, greater perception of the infrastructure, real-time interaction with road users, and communication with new-generation vehicles. Furthermore, it fully complies with safety standards, ensuring reliable performance and durability over time.

### How it works

The sloped upper part of the blade integrates flexible photovoltaic panels designed to maximize solar energy production while contributing to the safety of the infrastructure. On the back, a dedicated panel creates a protected chamber that houses electronic components, sensors, and antennas, shielding them from impact and weather conditions. The lower section of the blade includes recesses for the passage of poles and cable routing, while modular joints between the various elements ensure structural continuity and allow for simple, quick, and safe installation.





# A.To.S.

**A.To.S.**, Anchorage Tool for Soil, is a system developed and patented to improve the performance of road barriers installed on unstable ground. It is applied directly to the posts, allowing the barrier to react correctly to impact without the need for ground consolidation works.



## Turning weak soils into strong supports

### Why it is important

Road barriers are tested on ground with specific characteristics: only by reproducing equivalent conditions at the actual site can it be guaranteed that the barrier will behave as expected. Safety, in fact, depends on the interaction between the post and the ground.

### How it works

When the ground does not provide sufficient support and the posts are unable to react adequately, **A.To.S.** provides the necessary resistance. The system transfers the impact stresses to the road sub-base, which has more suitable mechanical properties. In this way, the post is free to flex in the intended area and, thanks to controlled deformation, dissipates the energy of the impact, replicating the behaviour observed during crash tests.





# Bass Rock

**Bass Rock** is a solution designed for barriers installed on small or weak embankments, where the wheels of vehicles that have skidded off the road may not find adequate support, increasing the risk of leaving the carriageway. As an alternative to traditional breakwater reconstruction, which is often costly and complex, **Bass Rock** allows for rapid and cost effective intervention, integrating two essential functions into a single system:

- » breakwater extension;
- » reinforcement of safety barrier posts.



## Drive safe where the embankment is missing

### Why it is important

In the presence of sloping terrain, with limited space behind the barrier or unstable ground, the correct interaction between the vehicle and the barrier is crucial for the effectiveness of the restraint system. **Bass Rock** meets this need by providing stable support for the wheels of vehicles that have veered off course, helping to increase safety levels without the need for invasive infrastructure work.

### How it works

**Bass Rock** is an innovative system consisting of a platform that extends the horizontal surface behind the barrier, promoting the correct redirection of vehicles and reducing the risk of overturning. The synergy between the extension of the support surface and the reinforcement of the posts allows the limitations of traditional solutions to be overcome.

Thanks to direct anchoring or integration with solutions such as A.To.S., **Bass Rock**:

- » improves wheel support during impact;
- » increases the overall structural stability of the barrier;
- » improves the performance of road barriers in accordance with EN1317, ensuring controlled vehicle redirection and reducing the severity of impact.

A targeted, effective, and safe solution designed for complex infrastructure contexts and small areas, reducing intervention times and costs compared to traditional solutions.

**Bass Rock** is patent-protected and adaptable to different ground conditions.



# Lo.S.T.

**Lo.S.T.**, Low Stress Transfer Vehicle Parapet, is a road safety barrier equipped with a curb anchoring system whose innovative configuration significantly reduces the stresses transmitted to the foundation, protecting it from excessive loads and prolonging its durability. The system accompanies the deformation of the posts in a controlled manner during impact, absorbing energy and limiting the load on the chemical anchors, ensuring high performance in the event of impact.



## The barrier that absorbs impacts to save structures

### Why it is important

In the event of an impact, the structural characteristics of the foundation are crucial for the stability and reliability of the barrier. **Lo.S.T.** reduces the stresses transmitted, ensuring continuous safety and reducing the need for maintenance.

### How it works

The **Lo.S.T.** anchoring system combines two key components:

- » base plate, which allows gradual rotation of the pole in the transverse and/or longitudinal direction;
- » dissipative braking system, which controls and slows down rotation, promoting progressive absorption of impact energy.

The synergy between these elements limits the forces transmitted to the foundation, increasing the safety and durability of the infrastructure. **Lo.S.T.** is patent protected and can be adapted to different types of foundations.



# Numerical Simulations

**T-LYNX** supports companies in the study, design, and verification of complex mechanical structures, using advanced computational mechanics tools and FEM numerical models. Thanks to an integrated approach, it is possible to predict the behavior of structures and optimize them early in the development stages, reducing design time and costs.

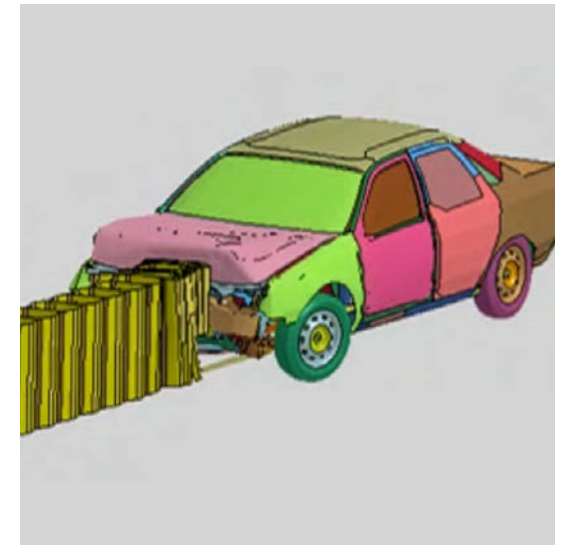
We specialize in the analysis of components and systems subjected to dynamic loads. Using simulation platforms such as HyperWORKS® and LS-DYNA®, we reproduce the behavior of structures under static or design loads, as well as under dynamic or impulsive stresses.

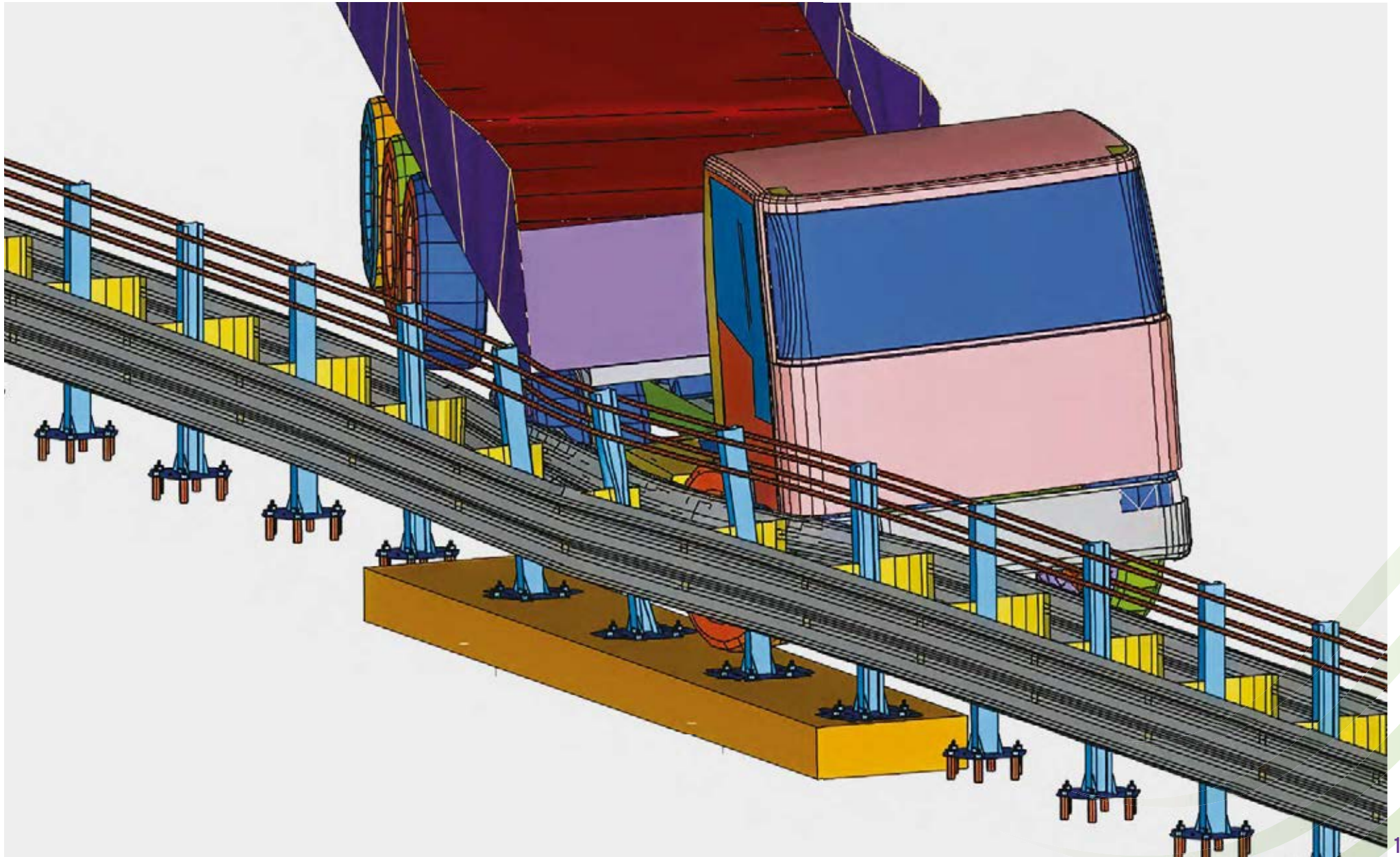
## Computational engineering for complex structures

To make the models increasingly accurate, we combine simulations with dedicated tools:

- » small-scale tests;
- » laser scanners for precise geometry acquisition;
- » 3D printing for prototyping and preliminary testing.

**T-LYNX's** computational mechanics services are used in numerous sectors, including: infrastructure, road safety, railways, automotive, biomechanics, and special products or custom solutions.





# TLYNX

Our Eyes on Safety

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