Increasing the Safety of Bridges and Road Infrastructure

There are around 600,000 bridges around the world and they are crucial to the functioning of all countries, but are they receiving the attention they deserve?

There have been many recent reports of bridge failures around the world, including a road bridge collapsing in Columbia in April 2023, killing two police officers and injuring 15 others. A large concrete bridge in Pittsburgh, USA also collapsed in January 2022, cutting off the main artery to the city for residents in the area. And many more bridge collapses in the past 3 years alone.

However, it is not just aging bridges that are at risk of collapse as we saw with the recent incident in Bihar, India where a large under-construction bridge collapsed in May 2023. And another under-construction bridge collapsed in July 2023 in Bangkok which killed two people and injured several others.

Challenges of assessing bridges and road infrastructure

When bridges fail, it's not just the structural damage, but the high value at risk when these assets deteriorate.

Transportation, oil and gas, energy and power, commuting, and most importantly the safety of lives are put at risk if corrosion or defects are not dealt with in a timely manner.

Before we look at what can be done to improve the safety of our bridges and road infrastructure, let's consider some of the problems that are currently faced from an inspection standpoint:

- Traditional methods of assessing concrete briges and road infrastructure can be time consuming, costly, and destructive.
- There may also be subsurface areas that are tightly congested with utilities, typically requiring more specialists and more expensive equipment.
- It is common for the data from past inspections to have been lost over time, leaving little comparable historical data to make future predictions.

To improve the safety of bridges and road infrastructure, it starts with implementing data-driven, non-destructive, and cost efficient solutions.

Efficient solutions to protect the health of bridges

- Advanced portable sensors and non-destructive testing equipment for holistic, fast, and cost effective assessment of bridges and subsurface road infrastructure.
- Powerful software to create a digital twin and visualize in real-time any objects or defects inside concrete or hidden beneath the subsurface (even in the most congested areas) for faster descision making.
- Deep data that is accessible at any time and easy to understand for structural health monitoring and preventive and predictive maintenance.

With these solutions, we can improve the safety of bridges and road infrastructure, increase the safety, quality and longevity of assets, and enable more informed decisions for proactive asset management.

Know the indicators of structural failure before it is too late. Detecting corrosion or defects before structural failure saves lives and billions of dollars in asset value.

Check out our free guide to **protect the health of new and existing bridges** with efficient solutions to the most common challenges including rebar corrosion, post tension cable placement, grouting, concrete strength and much more.