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STRUCINSPECT: Inspection in the Los Angeles Underground

With drones, multispectral optics, and AI: Austrian joint venture transforms tunnel inspection in the US. The world's first infrastructure lifecycle hub taps the rapidly growing global market for infrastructure inspections.



The remarkable thing about the Los Angeles Metro rail network is not its total length of 163 kilometers, it is the fact that its tunnels are subjected to daily earth tremors. On average, the Los Angeles metropolitan area experiences ten earthquakes every day – over 3,800¹ in the last 365 days. This has a direct impact on the fabric of the transportation infrastructure in the form of cracks, fissures, and displacements. Especially on those parts that are routed underground. The Los Angeles Metro Tunnel Network has now been inspected for the first time using STRUCINSPECT technology. The digital inspection immediately resulted in several measurable benefits.

Traffic, wind, and weather (as well as earthquakes) have a massive impact on the fabric of important transportation infrastructure structures. However, inspecting bridges, tunnels, and dams for safety is a lengthy and costly process. One that is becoming increasingly important. Currently, the global annual volume for infrastructure inspections is around 70 billion Euro; 2 billion Euro of which can already be addressed today - and this figure is set to double by 2029² alone.

¹ <https://www.volcanodiscovery.com/de/region/20577/erdbeben/los-angeles.html>

² <https://www.databridgemarketresearch.com/reports/global-infrastructure-inspection-market>

Digital structural inspection with STRUCINSPECT

STRUCINSPECT operates the world's first Infrastructure Lifecycle Hub for digital construction inspection and lifecycle management. Founded in 2019 as a joint venture between partners PALFINGER AG, VCE and ANGST Group, STRUCINSPECT uses drones to capture multispectral data of structures and applies this data using Artificial Intelligence for Building Information Modeling (BIM) in the form of a digital twin. On this high-quality basis, the company develops individually configurable business solutions together with its customers to precisely capture inspection data, process it efficiently and use it for effective maintenance decisions in the asset classes of bridges, tunnels, and dams.

Breakthrough: added value thanks to structured data!

Large volumes of data are generated during data acquisition. To process them efficiently, to exploit their potential and to really create added value from the information at hand, STRUCINSPECT looks at the entire value chain and acts in end-to-end solutions. STRUCINSPECT structures the enormous amount of data and makes it accessible and applicable for decision makers.

"In this way, STRUCINSPECT creates a breakthrough in the economic use of state-of-the-art digital technologies in building inspection and life cycle management," emphasizes STRUCINSPECT CEO Albrecht Karusch.

The benefits can be seen in the example of the Los Angeles Metro network, where **tunnel closure time** during data collection was **reduced by 79 percent**. STRUCINSPECT was able to provide complete documentation of all damage and damage-free locations in a very short time. This provides full transparency and higher accuracy. The more precise calculation of the current condition also leads to a **30 percent reduction in maintenance activities** in the following year.

Based on these successes and its technological-digital edge, STRUCINSPECT is actively tapping into the global market for infrastructure inspection. Attractive follow-up orders are already being negotiated.

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About PALFINGER Structural Inspection GmbH:

STRUCINSPECT is a Joint Venture established in 2019 between PALFINGER AG, VCE and ANGST Group. By providing digital services and establishing the world's first digital infrastructure management hub, the Infrastructure Lifecycle Hub, STRUCINSPECT maintains infrastructure structures worldwide in a safe, sustainable, and resource-efficient manner. The Infrastructure Lifecycle Hub, the online collaboration platform, forms the core of the company. The platform combines technologies and functions in the field of holistic digital infrastructure management. The offering is primarily aimed at established infrastructure operators and inspection engineers with an openness to future-oriented and digital solutions. The functions offered are currently applied to the asset classes bridges, tunnels, and dams.

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