

STRUCINSPECT™

INNOVATED BY PALFINGER VCE ANGST



AI VOLUTION OF
STRUCTURAL INSPECTION



Precise.
Economical.
Sustainable.



AI VOLUTION OF STRUCTURAL INSPECTION

Fast, economical and precise.
Powered by artificial intelligence.

TEAMWORK

Structural inspections can be carried out much more precisely, economically and sustainably in the future. PALFINGER, VCE and the ANGST GROUP have so far approached this topic from independent directions. Now these companies have joined forces to co-operate and combine their experience in providing a unique and revolutionary solution for the market.



AI VOLUTION

STRUCINSPECT covers the entire process chain of structural inspection: from complete acquisition and digitization of the structure, to objectified structural analysis and condition assessment. The production of a precise digital twin, presented clearly, gives a detailed overall impression of the inspection subject. The analysis of the inspection data is carried out by an artificial intelligence application which progresses through and fully completes the data evaluation. The completed assessment report has long-term validity for future comparison and can also be used for further planning and other purposes.



DIGITIZATION

With high-resolution cameras and sensors, thousands of images of the inspection object are taken. From this data, a digital twin - an exact 3D model of the real structure - is produced. This virtual representation depicts the overall general condition, as well as all specific damage and material conditions. Using this method, spallings and cracks can be precisely identified and examined with a resolution of up to 0.1mm. Information on moisture content, chloride content and other chemical properties make it possible to obtain more in-depth information about the overall condition.

Any detected damage is recorded in a database as well as clearly displayed on the digital model.



ARTIFICIAL INTELLIGENCE

Using AI-assisted pattern recognition, all damages are identified, analyzed, marked and documented.

The software also differentiates between a wide variety of damage types and intensities.

The quality of the result is thus no longer dependent on individual subjective opinion. The achieved objective data evaluation and interpretation forms the basis for a timely and rapid assessment by experts.





TRANSPARENT

STRUCINSPECT provides a detailed snapshot and a fully holistic impression of the current state to clients, examiners and authorities.

Additionally, the virtual model and the damage database provide evidential proof that control and inspection obligations have been fully complied with, as the complete documentation of the entire structure also includes the damage-free zones. On this basis, a compliant inspection report is prepared. The data is also available for other applications.



EFFICIENT

STRUCINSPECT is less labour-intensive and time-consuming compared to conventional structural inspections.

The data collection approach (e.g. using drones) and location-independent subsequent data analysis of the 3D digital twin, minimizes any traffic disturbance. The availability of the infrastructure continues during the inspection work, therefore additional closure and indirect other costs are avoided.



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FUTURE

The digital results and evaluations can be used in various ways beyond the actual inspection e.g. for long-term observation and comparison, life-cycle analysis and maintenance planning, as well as for the detailed design of rehabilitation repair measures and works. The high quality of the data recorded, both images and analytical evaluations is reproducible, which enables precise comparison with previous assessments of the same quality.





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COMPETENCE

The core competence of this internationally operating company lies in the automated creation of 3D building models, reports and asset management for transport infrastructure buildings. This is more precise, more economical and more sustainable than previously possible.



Specialized equipment for structural inspections from Palfinger has always been the preferred choice for enabling civil engineering inspections access to hard to reach areas. With more than 5,000 bases, this long-established company has a far-reaching worldwide service network.



VCE Vienna Consulting Engineers ZT GmbH works as an independent, high-tech-oriented engineering office in an international environment. With more than 350 employees at the company headquarters in Vienna, as well as at several locations in other countries, VCE is the first contact for condition inspection and assessment of infrastructure and transport routes.



As specialists in surveying and photogrammetry, Angst Group professionals bring their expertise and experience to the field of mobile mapping, professional drone operation and the subsequent 3D modelling techniques for STRUCINSPECT.

strucinspect.com

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