Comprehensive Bridge Assessment to Determine Reinforcement Configurations

Overview

- The municipality of Uden in the Netherlands wanted to change the road layout connected to the bridge, so a structural investigation was necessary.
- Iv-Infra, an engineering company, was contracted to run an evaluation of the bridge.
- The Stepped Frequency Continuous Wave (SFCW) Technology was able to map both near-surface and deeper targets with the Proceq GP8000 concrete mapping system was used to assess the condition of the bridge in Uden, the Netherlands.

The Challenge

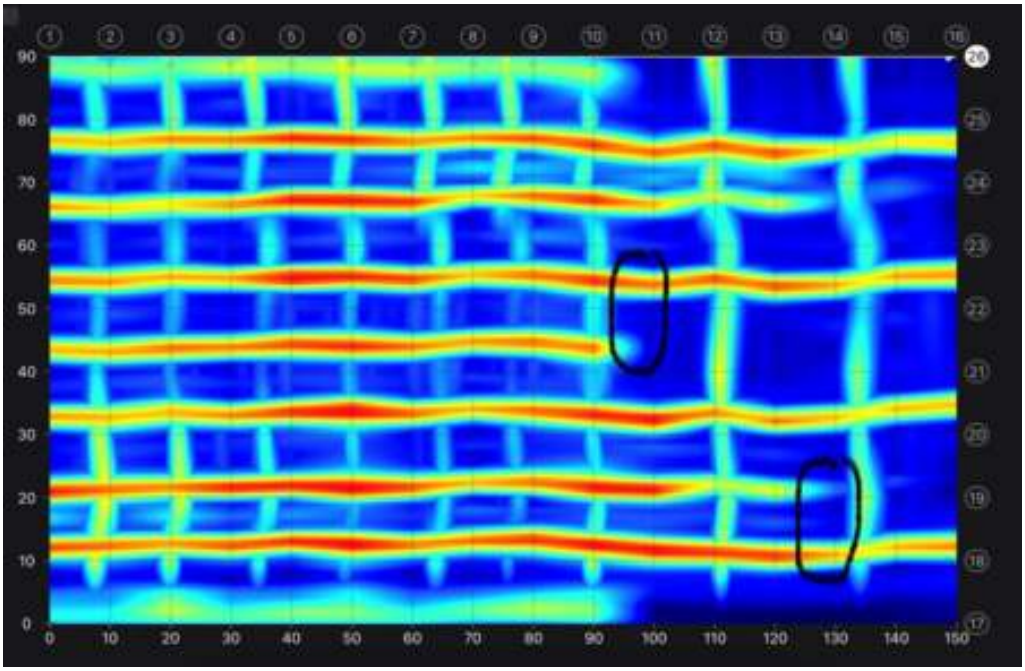
The municipality of Uden in the Netherlands wanted to change the roadway layout on the bridge for the construction of a high-speed cycle route. Our customer, Iv-Infra, was contracted to run an evaluation of the bridge. No archives existed for the bridge, no drawings, calculations, specifications, or material qualities. Iv-Infra, was asked to determine what the reinforcement configuration should be.

Iv-Infra recently added the GPR scanning technology to their services in response to requests from contractors and asset owners concerned about compromising structures requiring such work. Unique in the industry, the GP8000 uses stepped frequency continuous wave GPR designed to provide operators the highest quality data at deeper penetration.

Due to the high-profile nature of the project Iv-Infra used a combination of line scans and area scans to confirm rebar location and document results for their client. Area scan results have the benefit of simplifying the scan findings into easy to understand top-down and volumetric views. Saved and shared digitally and securely, the review of scan results can be a collaborative effort direct from the field to the office in almost real-time.

The Result

The results of the survey showed that the reinforcement is being carried out in a targeted way. The zones to be cleared are determined from the radar images (see circled zones).



The information collected with the GP8000 is incorporated into a calculation model, so that the force effect of the bridge can be determined.

Learn more about non-destructive concrete assessments and other related topics in our Tech Hub.