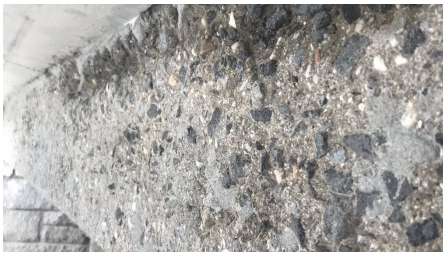
Reference

Bridge reinforcement with carbon concrete at Kleinsaubernitz









SHORT DESCRIPTION

As part of a pilot project, Implenia reinforced a road bridge with carbon concrete.

THE PROJECT

In the course of a research project by TU Dresden and LiSt GmbH, Implenia strengthened the bridge over the "Alte Fließ" in Kleinsaubernitz. The aim was to further test the composite material carbon concrete and thus increase the load-bearing capacity of the reinforced concrete bridge in order to use it as a possible alternative route for the A4.

SERVICES IN DETAIL

Implenia removed the old concrete down to the load-bearing substrate. Damage to the cross-section then had to be repaired and strengthened. Then four layers of carbon scrim were applied overlapping and crosswise in conjunction with the associated fine concrete. The top layer received a decorative fine coat with a surface protection system. After the curing phase of 28 days, an extensive load test was carried out with two truck-mounted cranes, each weighing 45 tonnes.

CHALLENGES

The water body below the bridge had to be protected from contamination. For this purpose, a platform was built in the riverbed. Furthermore, the working height was only 1.40 m, which made the work enormously difficult.

SUSTAINABILITY

The load-bearing capacity of the bridge is enormously strengthened by the building material carbon concrete. Only four centimetres of sprayed mortar were applied. In combination with the carbon fibre, an increase in load-bearing capacity of more than 100 % was achieved. This saved costs and the bridge can remain in use for many years.

FACTS

Location	Kleinsaubernitz , Germany
Status	Under construction
Construction volume (value of our services)	128,000 EUR
Start of construction	August 2020
Completion	September 2020
Building owner	LiST Gesellschaft für Verkehrswesen und ingenieurtechnische Dienstleistungen mbH, 09661 Hainichen
General management	Michael Beetz, Implenia Instandsetzung GmbH
Planning	Curbach Bösche Ingenieurpartner Beratende Ingenieure PartG mbB, 01069 Dresden

SERVICES

- Restoration
- Civil engineering
- Road transport infrastructure
- Structural engineering
- Infrastructure