Vacher Bridge

SHORT DESCRIPTION

Renovation of the Vacher Bridge BW 032 over the Zenn River

THE PROJECT

This project involved renovation work on the Vacher Bridge BW 032 over the Zenn River, including construction of the connections to the Vacher Straße / Stadelner Straße intersection and to the T-junction with Flexdorfer Straße. The construction site is situated along the local road FüS 1, on Vacher Straße between Fürth and the Vach district.

Because of the route's importance for local traffic, it was necessary to ensure ongoing operation of the road, cycle paths and pedestrian walkways as well as the local public transport services throughout the construction period. For this reason, the new bridge was constructed next to the existing one. The existing bridge, with a weight restriction of 3.5 tonnes, remained in use until the new bridge was completed and opened.

SERVICES IN DETAIL

The Vacher Bridge is a 6-span T-beam bridge with double girders in the longitudinal direction.

- Length of the superstructure: 121.40 m
- Width including caps: 14.50 m
- Construction height: 1.20 m

The foundations for this bridge structure were constructed using 20 in-situ concrete bored piles with a diameter of 1.5 metres and a length of 24 metres each.

Principal dimensions:
Concrete:

- Bored piles: approx. 850 m^3
- Substructures: approx. 990 m^3
- Superstructure: 1,031 m^3
- Caps: 151 m^3

Steel:

- Reinforcing steel: approx. 203 t
- Prestressing steel: approx. 37 t

Additional work:

- Electrofishing for eel corralling and changing the course of the stream
- Construction of the bored piles and subsequent installation of the sheet pile wall (remaining) for the pile caps
- Installation of underwater concrete and construction of the pile caps
- Construction of two abutments and twelve pillars
- Construction of the supporting structure (falsework) and installation of the nail trusses, followed by setting up the formwork for the superstructure
- Installation of the spherical bearings, reinforcement and prestressed reinforcement, followed by concreting work for the superstructure
- Removal of the supporting framework and construction of the caps after the prestressing has been applied
- Laying the road surface and assembling the railings and other equipment after the superstructure has been waterproofed

CHALLENGES

In order to construct the new bridge, changes first had to be made to the body of water beneath it, taking certain ecological aspects into consideration (due to the suspected presence of river mussels and the use of electrofishing).

The course of the stream was changed using a method that generated as few eddies as possible, under the supervision of a river mussel specialist. The ground in and around the construction site was not permitted to be compacted by work equipment. For this reason, it was only possible to carry out work on mobile construction roads.

FACTS

Location	Fürth , Germany
Status	completed
Construction volume (value of our services)	3 M EUR
Start of construction	October 2016
Completion	November 2017
Contracting entity	Stadt Fürth, Baureferat - Tiefbauamt
Project management	Implenia Construction GmbH, Niederlassung Süd, Geschäftsstelle Nürnberg

Planning	Ing.-Büro Pfülb
Concrete volume	3020 m^3
Reinforcement	240 to
Height	3 m
Length	121.4 m
Overall length	126 m

SERVICES

- Concrete construction
- Road transport infrastructure
- Structural engineering

https://implenia.com/en/references/detail/ref/vacher-bridge/

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