



## Pressemitteilung

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# Replacement construction of the Thulba viaduct: Innovative construction method for sustainable infrastructure

**Adam Hörnig Baugesellschaft mbH & Co. KG sets new standards in the construction of steel composite bridges with innovative PERI system**

For the second steel composite superstructure of the Thulba viaduct, Adam Hörnig Baugesellschaft mbH & Co. KG (AHA) opted for a new construction method: the carriageway slab will be constructed using PERI's VCT Cantilever Track system in in-situ concrete. By using the formwork solution travelling underneath the superstructure, AHA is able to construct the carriageway slab without penetrations. In addition, the contractor has the free access from above to reduce cycle times and complete the superstructure more quickly. This allows congestion times to be reduced. The cantilever system does not require the so-called formwork carriage supports, thus increasing the quality of the carriageway slab and the longevity of the bridge.

By opting for this new construction method, AHA is emphasising its focus on overall sustainability and the safety of its employees and, as an innovative construction company, is consciously breaking new ground.

### **A7 motorway between Fulda and Würzburg**

The Thulba viaduct, which is over 50 years old, will be replaced by a new structure by 2027. The first substructure in the direction of travel towards Fulda has already been successfully erected. This superstructure was built in a lateral position and will be shifted crosswise in the course of further work. Since the demolition of the old viaduct, work has been underway on the second substructure in the direction of Würzburg. Both superstructures are being constructed as single-cell steel composite box girders. A classic composite formwork carriage was used to construct the carriageway slab of the first superstructure. For the second substructure, AHA has opted for a completely new and innovative solution on the market.



### **Innovation through cooperation**

AHA was looking for a way to avoid the disadvantages of the current construction method for the second section of the building. For this reason, AHA decided to work together with the formwork and scaffolding manufacturer PERI. With its new cantilever formwork, AHA wants to achieve its ambitious goals and set new standards. The PERI formwork solution travelling underneath does not require any formwork carriage supports. Thus, penetrations of the carriageway slab as well as cracks in the connections of the cross frames can be avoided.

The cantilever beam is suspended diagonally via anchor plates welded onto the outside of the top chord. The flexible positioning of the suspensions along the steel structure enables interference points to be avoided, an even load distribution on the steel structure and a reduction in weight compared to the classic top travelling formwork carriage. The system's free access to the carriageway slab from above speeds up the reinforcement work and enables a high-quality carriageway slab surface through the use of vibrating beams and finishing blades. All of this means that cycle times can be optimised in terms of resources up to weekly cycles and the structure can be completed more quickly overall.

This construction method is also an alternative to the controversial semi-precast solution for the construction of steel composite bridges, allowing the carriageway slab to be produced in robust in-situ concrete. The almost jointless construction of the carriageway slab and the slimmed-down reinforcement increases the service life of the structure and avoids discussions about the fatigue strength of the steel cantilever girders.

### **Better quality and more sustainability**

According to the RE-Ing. directive, constructions must be provided that are supported on the bottom chords of the beams or on the floor plate. AHA thus fulfils these requirements and also makes an important contribution to sustainability. On the one hand, the short construction time leads to less disruption to traffic. This means that traffic jams can be avoided or at least reduced. This has a positive effect on the CO<sub>2</sub> balance during the construction phase. On the other hand, the longevity of the structure is particularly important in terms of overall sustainability. As the carriageway slab is manufactured without any imperfections and therefore has fewer areas prone to fatigue, this leads to high quality and a long service life for the structure.

### **Innovation means going one step further**

"We are never satisfied with the status quo and are constantly looking for ways to improve our projects and methods. With the new cantilever bridge, we have the opportunity to do just that and advance the industry with an innovation," says Peter Wagner, Head of Bridge and Civil Engineering at Adam Hörnig Baugesellschaft mbH & Co. KG.



Photo 1

As part of the A7 motorway, the Thulba viaduct is being replaced by a new structure. The first part of the structure in the direction of Fulda has already been successfully constructed.

(Photo: PERI SE)

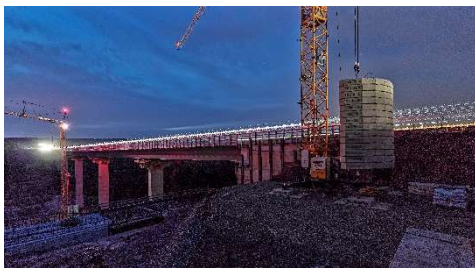


Photo 2

Adam Hörnig Baugesellschaft mbH & Co. KG is using a new system from PERI for the second section of the building.

(Photo: PERI SE)



Photo 3

The VTC Cantilever Track is a system that runs underneath making the use of formwork carriage supports superfluous.

(Photo: PERI SE)



Photo 4

The new system leads to shorter cycle times, is sustainable, saves resources and results in a higher quality carriageway slab.

(Photo: PERI SE)