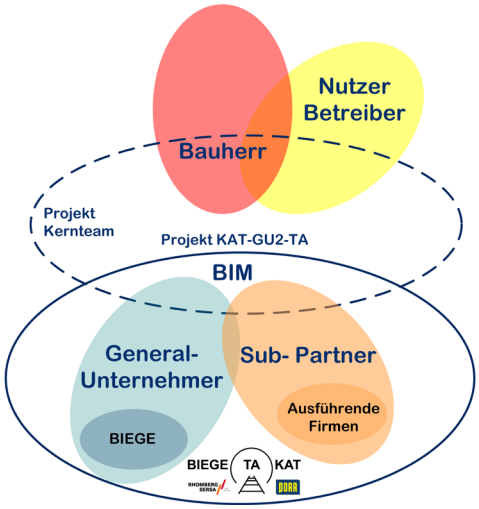
— Projects

KORALM TUNNEL MEETS BIM

At 32.9km, the Koralm Tunnel is the longest railway tunnel in Austria. It forms the core of the approximately 130km-long section of the Koralm Railway and is a section of the route that connects Graz and Klagenfurt. PORR has been building this connection since 2013.

As part of the follow-up order KAT3-GU2 „Railway technology", which PORR is delivering as part of a joint venture with the Rhomberg Sersa Rail Group, the focus will be on innovative and forward-looking methods for digitalisation.

Client	OBB Infrastruktur AG / ARGE KAT GU2 Rhomberg - PORR	**Dimensions**	7 trades to be coordinated; approx. 800 pieces of levels of geometry; >100,000 pieces of levels of inormation
Location	Graz - Klagenfurt		
pde period of service	07/2021 - 10/2025		
Service areas	BIM		



ENHANCED TRANSPARENCY WITH BIM

The follow-up contract GU2-TA includes cable installation work, telecommunications, energy and security technology, mechanical systems and other associated construction services relating to the shell, overhead lines and railway track. This means that the BTA consortium is responsible for putting the final touches in place before the entire project is handed over to ÖBB infrastructure AG. Backed by decades of experience in the operational sector, the consortium will also be focusing on the use of BIM, short for Building Information Modelling.

"As a leader in BIM applications, we are delighted to be able to support ÖBB with a project of this size and complexity" says Clemens Neubauer, head of the BIM department at pde.

BIM enables us to bring together everyone involved in the project so all parties are working on a single digital model. For Günther Strohmaier, overall project lead for the consortium, overall coordinator Daniel Tiefenbrunn and his team at pde Integrale Planung GmbH, and planning coordinator Andreas Bauer, this is crucial. In combination with LEAN, BIM simplifies communication between stakeholders, makes all processes transparent and efficient, and significantly simplifies logistical construction workflows through timely, coordinated planning of all the trades involved. According to Matthias Heimhalt from the Rhomberg Sersa Rail Group, "BIM is being used more and more in railway planning, and the added value is clearly evident. Our goal is to use BIM to support our construction site teams as they carry out the work."

ENHANCED QUALITY WITH SIMULATIONS

Right from the start, the Koralm Tunnel has brought together BIM-based planning and execution in an iterative coordination process. Together these elements have simulated the technical railway infrastructure work in order to ensure the exacting quality standards are met. This process requires agile project management to assess the key performance indicators and come up with appropriate measures for executing the work. Periodic LEAN meetings with the project team ensure that the assumptions made are evaluated in a timely manner.

All BIM applications are implemented using agile project management approaches and methods by the 25-strong team, with the aid of digital tools.

The portfolio of services also ranges from internal resource planning to project control, an aspect involving close, shoulder-to-shoulder collaboration. The model-based working methods and agile project management improve the quality of planning and lead to an optimisation of logistical construction processes, even before the pre-construction lots are taken over to be set up as construction sites. The first signs of the success of these working methods are already evident: Based on the prioritised sample cross-cuts set out in the preliminary stages, technical facts have been discussed while simultaneously being integrated three-dimensionally and augmented.

ENHANCED VALUE FOR ALL

“End-to-end digitalisation of processes from planning and project execution through to maintenance management and operations is an important objective for ÖBB. In order to take full advantage of the benefits of this kind of digitalisation, BIM is being applied as an integrative constituent of planning and execution in the large-scale Koralm Tunnel project,” says chartered engineer, Dr Klaus Schneider, the project lead responsible for overall coordination of the Koralm Railway at ÖBB-Infrastruktur AG. The plan is to make the model information generated and processed as part of the preparation phase available in the application phase and during operation as well. The requirements of implementing the BIM and the associated processes will contribute to generating an as-built model that contains all of the content-related data needed to assess the condition comprehensively.

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