

Simulation model to support the maintenance management of protective structures



Around 4,700 protective structures currently protect the SBB railway network against rock falls, flooding, avalanches and other natural hazards. Working together with SBB representatives, EBP has developed a concept for a simulation model that calculates the resources that will be necessary to secure the long-term maintenance of these structures.

What investment volume will SBB need to reserve to secure the long-term maintenance of around 4,700 protective structures along its approximately 3,000 km railway network?

This question is to be answered in the future using an appropriate simulation model. The model is to take account of the key factors involved, including the investment volume and the developing lifecycle of the protective structures in the sense of a modern investment-management tool. Working together with SBB representatives, EBP has drafted a corresponding concept.

Maintenance strategies and lifecycle development

One of the concept's important elements is a breakdown of the numerous protective structures entered in SBB's protective-structure registry into distinct categories. Other important elements that are regarded as a basis for the model's development include:

- The current state of the protective structures
- The anticipated lifecycles of the protective structures
- The cost and impact of all maintenance activities

Client

Swiss Federal Railways (SBB),
Infrastructure, Nature and Natural Risks

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The simulation model enables SBB to analyze different maintenance strategies in terms of their cost and impact on lifecycle development.