Investigation and evaluation of the condition of the construction of the roof plate of a tunnel under the National Palace of Culture

EKJ • BULGARIA CONSULTING ENGINEERS LTD

The team of EKJ Bulgaria Ltd. has developed a technical investigation and evaluation of the condition in the form of on-site tests and a report on the state of the construction of the top plate of a tunnel on Gen. Blvd. M. D. Skobelev" from "Tsar Asen" St. to "Vitosha" Blvd., as a result of additional load from the displacement of a tram route from the local lane on "Gen. M.D. Skobelev".

The tunnel has the following characteristics:

- Total length of the tunnel – 460 m;
- Length of the photographed section of the structure – 145 m;
- Support distance – 17.50 m (between the secondary lining of the tunnel);
- The superstructure – a top plate with a height of at least 75 cm.

Main activities carried out under the project:

- Review and analysis of the available design and other documentation for the site;
- Assaying the elements of the building structure, incl. locating and documenting visible defects in the structural elements of the tunnel;
- Conducting static and dynamic natural testing;
- Conducting a survey and assessment of the real bearing capacity of the superstructure of the tunnel sectors in the specified range;
- Analysis of the collected data and a conclusion on the technical suitability and safe operation of the facility, including with additional loading from the tramway.

Content of the submitted technical report:

- Results and findings from the individual parts of the survey;
- Data analysis for the individual parts of the survey;
- Static calculations;
- Results of field testing;
- Conclusions and conclusions about the technical and long-term serviceability of the roof plate, including with additional loading from the tramway;
- Proposals for restoration, repair and remediation.

EKJ Bulgaria`s services:

During the design:

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Client: Sofia Municipality

Contractor: EKJ Bulgaria Ltd

Period: 2021

Type of contract: Investigation and evaluation of the condition