



research bridges railways tunnelling monitoring technology management international

# Estakáda Sluncová

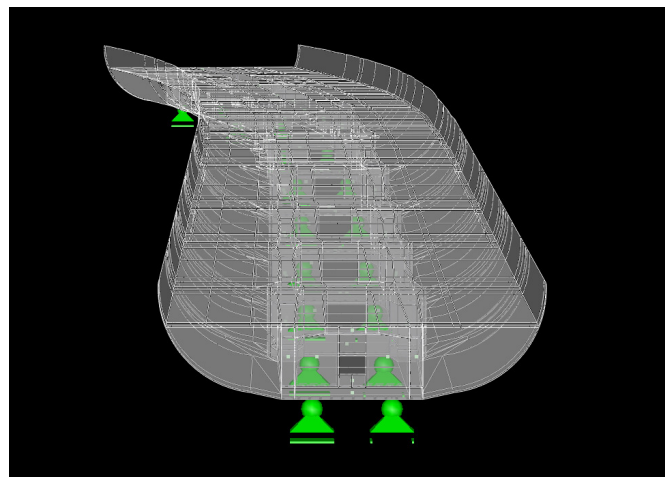
The railway bridge Estakáda Sluncová in Prague is part of the new railway connection between Prague's main station and Prague Holešovice station. The structure - finished in summer 2008 - is a continuous beam with total length of 323.8 m consists of eight spans which are 26.0 + 2x36.7 + 4x47.6 + 34.0 long and follows a strongly curved ground view. The bridge has an internal and an external pre-stressing in the longitudinal direction. Its cross section is composed of a three cellular box girder. The middle cell is rectangle shaped whereas the two outer cells have the shape of a quarter ellipse.

In the course of the prevailing investigation an extensive dynamic monitoring campaign was undertaken in order to examine the Estakáda Sluncová's initial condition. The dynamic assessment with BRIMOS® was widely performed according to the Czech code ČSN 736209 but in addition to that the measurement provided supplementary information. Part of the Czech assessment procedure is the comparison of the measurement with a finite element model.

Within the scope of the present assessment the live loads' dynamic effect on the load bearing capacity and on the operability was evaluated and recommendations for the further service life were made. Special attention was paid to the analyses of the internal pre-stressing of the primary load bearing structure (main girders in the longitudinal direction).

The present investigation (measurement 2008) is to be understood as an initial measurement. Possible upcoming measurements are to be referred to this initial one - possible changes of the structure's operational integrity can be quantified with this approach.

- Client: SKANSKA, DS a.s  
Dopravní stavitelství Brno
- Location: Prague, Czech Republic
- Checking Period: 2008
- Services: Dynamic measurement  
BRIMOS® - Assessment and rating  
According to Czech Standard CSN 736209  
Finite Element Simulation



## BRIMOS® Services conducted:

- |                              |  |   |   |   |
|------------------------------|--|---|---|---|
| <b>Lifecycle Management:</b> | <input checked="" type="checkbox"/> Condition Assessment | <input type="checkbox"/> Condition Monitoring | <input type="checkbox"/> Rehabilitation Planning            | <input checked="" type="checkbox"/> Quality Control |
|                              | <input type="checkbox"/> Lifetime Assessment             | <input type="checkbox"/> Traffic Analysis     | <input type="checkbox"/> Environmental Influences           | <input type="checkbox"/> Risk Assessment            |
| <b>Special Measurements:</b> | <input type="checkbox"/> Attendant Monitoring            | <input type="checkbox"/> Noise and Vibrancy   | <input checked="" type="checkbox"/> Deflection Measurements | <input type="checkbox"/> Seismics                   |