

Kindly register using the link

https://wis.ntu.edu.sg/pls/webexe88/REGISTER_NTU.REGISTER?EVENT_ID=OA22101218172448



Transport Research Centre (NTU-LTA TRC@NTU)

PDU: TBC

Public Lecture

Reassessment, strengthening and monitoring of bridges: foundations, strategies, and experiences

Prof. Dr.-Ing Balthasar Novák

Deputy Director

*Institute for Lightweight Design, Design and Construction
University of Stuttgart, Germany*

Date: Friday, 21 October 2022

Time: 1:00 pm – 4:30 pm

Venue: Lecture Theatre 19

Public Lecture Abstract

In the past decades, European highways have experienced a steady increase in road traffic. In Germany, the total heavy freight road traffic has approximately doubled in the last 20 years, and a further increase is predicted. Besides, an entire generation of reinforced concrete highway bridges built in the post-war period in Germany meanwhile is approaching the end of their service life. Concerning the ageing infrastructure and increasing traffic load, the importance of the assessment and the preservation of existing road bridges (especially for the highway network) and monitoring systems for condition monitoring of bridges and early damage detection is gaining increasing importance. In this public lecture, Prof. Dr.-Ing Balthasar Novák will introduce the strategies for the reassessment, strengthening and structural health monitoring of existing bridges to control the ageing infrastructure with all these issues. This lecture will contain three parts, including: (i) German guidelines for the re-assessment of existing highway bridges; (ii) Strengthening strategies of highway viaducts in Germany; (iii) Progress in the application of distributed fibre optic sensors for monitoring existing bridges.

Speaker's Biography



Prof. Dr.-Ing Balthasar Novák is currently a Professor at the University of Stuttgart and the Deputy Director of the Institute for Lightweight Design, Design and Construction. He received his bachelor's and PhD degrees in Civil Engineering at the Technical University Darmstadt in 1990 and 1995. His research interests include the analysis and design of discontinuity areas (D-areas) of reinforced concrete components under seismic loading, double composite bridges with steel trapezoidal sheet webs, developing structure management systems for the maintenance of bridges and engineering structures, double ceilings for multi-storey buildings, and further development of European regulations in bridge construction. He was involved in many working groups for the development of Eurocodes, such as ENV 1992-2 "Design of Concrete Bridges" and ENV 1991-2.5 "Thermal Actions". He also served in the National mirror committee to ENV 1991-3 (now EN 1991-2) "live loads on bridges" since 1993 and became the chairman of the committee in 2013. He has been the Founding dean for civil engineering at the German University in Cairo, Egypt since 2010, and the Adjunct Professor at IIT Mandi since 2018.