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Announcement

Transport

ice Publishing

Award-winning papers in 2021

Papers published in *Transport* are eligible for awards from the Institution of Civil Engineers. Papers from any of the ICE journals can be nominated for several awards. In addition, each journal has awards dedicated to their specific subject area.

On Friday 14 October 2022, ICE president Ed McCann presented awards to the following papers published in *Transport* in 2021. The editorial panel nominated their best papers and an awards committee chaired by Tim Broyd allocated the awards.

William Webb Prize

The Webb Prize, presented for the best paper on a non-highways transport scheme, was awarded to Saltmarsh and Martini (2021).

Abstract

In 2011 a contract was signed for the construction of Copenhagen's new metro line, Cityringen, which will connect 17 new underground stations in and around the centre of Copenhagen. To assist with the development of the city it was decided in 2012 and 2014 to add branches to Cityringen connecting the city centre with north and south harbour areas, respectively. This required the introduction of bifurcations to connect the branches to Cityringen tunnels. The bifurcations were made with the substantial modification of a shaft at Øster Søgade and the introduction of a new shaft, Havneholmen. This paper outlines both engineering and logistical challenges introduced by these changes, from the construction of a 35 m deep shaft around existing stacked tunnels adjacent to an operational railway line to how the closing tunnels for the construction of the shaft impacted the tunnel installations and the overall time schedule, plus numerous other issues.

Rees Jeffreys Award

The Rees Jeffreys Award, presented for the best paper on highway engineering, was awarded to Sok and Lee (2021).

Abstract

The built-in temperature difference (BITD), defined as the temperature difference between the top and bottom of a slab at the final setting time, is an important parameter for analysing curling stress and slab deformation in concrete pavements. However, the available methods for estimating this parameter are very limited. A method to predict the BITD in a concrete pavement was therefore developed. To do this, a numerical model was developed to predict the temperature distribution in a concrete slab at early age using a transient one-dimensional finite-difference method. A mathematical equation for predicting concrete final setting time presented in the literature was used and incorporated in the numerical model to predict the BITD. The results of the numerical model showed good agreement with field data. Using the proposed model, the effects of climatic conditions, placement time, pavement thickness and concrete mix proportion on the BITD were also evaluated. The results showed that climatic conditions, placement time and concrete mix proportion have substantial effects on the BITD, whereas pavement thickness has only a slight effect. The proposed model can be used to predict the BITD in concrete slabs for given concrete mix design, placement time, pavement thickness and environmental conditions.

Rees Jeffreys Award winner Seung Woo Lee with ICE president Ed McCann

REFERENCES

Saltmarsh R and Martini N (2021) Extending Cityringen – the challenges involved. *Proceedings of the Institution of Civil Engineers – Transport* **174(5)**: 294–304, https://doi.org/10.1680/jtran.18.00026.

Sok T and Lee SW (2021) A mechanistic approach to predict built-in temperature in concrete pavements. *Proceedings of the Institution of Civil Engineers – Transport* **174(4)**: 227–238, https://doi.org/10.1680/jtran.18.00065.