

TUNNELLING AT SSLR2 – A RISK ELIMINATION STRATEGY IN CHALLENGING GEOGRAPHIES



At 2.234 km length, the Sarawak Sabah Link Road (Phase 2) (SSLR2) tunnel at Bukit Pagon will replace a 22.4 km open road alignment in a high-risk, high-rainfall terrain.



Beyond becoming a milestone for East Malaysia's infrastructure as the first road tunnel to be built, the SSLR2 tunnel is an instructive case of risk-informed tunnelling.



It demonstrates how proactive risk management and integrated engineering solutions can turn geographical challenges into deliverable value.



OUR FOCUS: Applying an integrated approach to geo-hazard risks, technical excellence and value engineering to eliminate uncertainties and deliver safe, resilient infrastructure.



High-Risk Terrain



First Road Tunnel in East Malaysia



Risk-Informed Tunnelling



Delivering Lasting Value



KEY MESSAGE

The SSLR2 experience affirms that tunnel risk management is inseparable from design philosophy. **In high-risk environments, tunnelling is not just a construction option – it is a risk elimination strategy.**

THE SSLR2 TUNNEL



At 2.234 km length, the Sarawak Sabah Link Road (Phase 2) tunnel at Bukit Pagon will replace a 22.4 km open road alignment in a high-risk, high-rainfall terrain.



A milestone for East Malaysia's infrastructure as the first road tunnel to be built.



An instructive case of risk-informed tunnelling, demonstrating how proactive risk management and integrated engineering solutions deliver value.



THOUGHT LEADERSHIP PRESENTED



The above thought-leadership was presented in a paper titled "Advancing Connectivity in East Malaysia: Tunnelling Developments and the SSLR2 Experience in Sarawak".

The paper was co-authored by JKR Sarawak's Director, Datu Dr. Cassidy Anak Morris, JKRS officials, MAJUV's Dr. Azrin Ahmad and Ir. Asninda Es Abdul Wahab.

The paper was presented by MAJUV's Technical Advisor, Ir. Junaidi Sahadan, at the World Tunnel Congress (WTC) 2026 in Montreal, Canada, on 20 May 2026.



ADVANCING TUNNELLING FOR THE FUTURE



As global tunnelling advances to deeper, longer, and more urbanised projects, the East Malaysian experience demonstrates that local hazard adaptation, multi-disciplinary integration, and forward-looking durability planning are essential to achieving safe, resilient underground infrastructure.



GEOLOGICAL UNCERTAINTY



COLLAPSE



WATER INGRESS



CONSTRUCTION SAFETY



LONG-TERM DURABILITY



KEY TAKEAWAY

By incorporating lessons from Malaysian projects, such as SMART and KVMRT, and aligning with global practices, the SSLR2 tunnel project reduces risks across 5 major domains – ensuring safer construction and long-term performance.

REPRESENTING SSLR2 AT WORLD TUNNEL CONGRESS 2026, MONTREAL, CANADA



Wednesday, 20 May 2026, MAJUV's Dr Azrin Ahmad took part in the 'poster presentations' event at the World Tunnel Congress (WTC) 2026 in Montreal, Canada, yesterday, sharing about the Sarawak Sabah Link Road (Phase 2) experience in **Risk Mitigation and Value Optimisation in Tunnel Construction: Integrating Lessons from Historical Failures and a Comprehensive Risk Register**.



WHY POSTER PRESENTATIONS?



During WTC 2026, pocket talks and specialised quick-sessions are a dynamic alternative to traditional lectures.



Poster presentations, such as Dr Azrin's, give visual summaries of peer-reviewed engineering findings



Combined with personalised, informal discussions



With the experts.

WTC 2026 MONTREAL AT A GLANCE



3,000+

Estimated attendance of industry experts, engineers, and researchers



80+

Countries represented from around the world



200+

International organisations and companies showcased their technologies in exhibitions



800

Record-breaking technical paper submissions received



KEY TAKEAWAY

Dr Azrin's participation at WTC 2026 highlights MAJUV's commitment to knowledge sharing, innovation, and advancing best practices in tunnel construction.