



Technical Briefing Visit To The Airport Management Centre (AMC), KLIA

By

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Entering the Operational Heart of KLIA

On Friday, 5 December 2025, members of the Women Engineers (WE) Section of the Institution of Engineers Malaysia (IEM) conducted a technical briefing visit to the Airport Management Centre (AMC) at Kuala Lumpur International Airport (KLIA). Hosted by Malaysia Airports Berhad (MAB), the session offered participants insight into the real-time operational control, systems integration and engineering coordination required to sustain the safe and efficient operation of a major international aviation hub.

While passengers experience the airport mainly through terminals, aircraft movements and baggage delivery, these visible touchpoints are supported by complex systems operating behind the scenes. AMC functions as the central hub where engineering, operations and data converge to ensure safety, efficiency and service continuity across the airport. The visit allowed participants to better understand how these systems are monitored, coordinated and managed in a live operational environment.



The Role AMC in Airport Operations

AMC serves as the operational nerve centre of KLIA, integrating diverse streams of information from multiple systems to support coordinated decision-making. From an engineering perspective, it represents the integration of physical infrastructure, digital monitoring platforms and human expertise. Continuous system monitoring enables early issue detection and timely response to incidents.

Participants gained insight into how engineering decisions directly influences airport performance on a daily basis. In an environment such as KLIA, engineering extends beyond design and installation into operational readiness, asset reliability and system resilience. The visit highlighted the close collaboration required between engineering and operations teams to manage a complex and dynamic infrastructure where safety and continuity are paramount.

Passenger Boarding Bridge Systems in Practice

The technical briefing was led by Mr. Zan Ridzwan, Senior Manager from the Engineering Team at Malaysia Airports Berhad. He began with an overview of the Passenger Boarding Bridge (PBB) system, a familiar feature to travellers but a technically demanding asset from an engineering standpoint.

The session covered the mechanical and electrical components of the PBB, control systems, safety interlocks, and operational interfaces. Participants learned how PBBs are designed to accommodate different aircraft types while meeting strict safety and aviation requirements. Attention was also given to operational constraints, including the need for high reliability, flexibility, and precise coordination with airside activities.

Key challenges associated with maintaining PBB availability in a live airport environment were highlighted, particularly in relation to tight aircraft turnaround times. Preventive maintenance planning, fault response procedures and coordination with multiple stakeholders were identified as key factors in ensuring consistent system performance.

Behind the Scenes of the Baggage Handling System

The programme continued with a discussion on the Baggage Handling System (BHS), one of the most complex and operationally intensive systems within the airport. Participants were introduced to how baggage is transported, sorted, screened and tracked through an automated network of conveyors and sortation equipment.

Topics included system layout, integration with security screening processes, redundancy philosophy and real-time monitoring from the AMC. The session demonstrated how high volumes of baggage are managed reliably through robust system design, data-driven monitoring and coordinated response between engineering and operations teams.

For many participants, this segment offered a new appreciation of how engineering decisions directly affect passenger experience. Continuous BHS operation with minimal disruption depends on system resilience, rapid fault detection and effective communication across teams.

Engineering beyond Design and Commissioning

Beyond individual systems, the visit reinforced the understanding that engineering responsibility does not end at commissioning. At KLIA, engineers play an ongoing role in managing ageing assets, optimising performance and adapting systems to evolving operational demands.

The AMC illustrates how engineering supports long-term reliability through system integration, performance monitoring and proactive decision-making. Participants observed how engineering judgement is applied in real time, balancing technical constraints, safety considerations and operational priorities.

Reflections from the Aerotrain Project

The visit was further enriched by reflections from Ir. Bibi Sabrena, Project Director at Malaysia Airports Berhad and a member of the Women Engineers Section. She shared insights from the recently completed Aerotrain project, highlighting the challenges of delivering large-scale infrastructure upgrades within an operational airport environment.

Her reflections emphasised the importance of multidisciplinary coordination, stakeholder engagement and strong engineering leadership, offering valuable perspective on managing complex projects while maintaining uninterrupted operations.



Learning through Industry Engagement

For the Women Engineers participants, the visit provided practical exposure to how engineering principles are applied in a high-risk, operational setting. It reinforced the importance of systems thinking, adaptability and collaboration when working on critical national infrastructure.

The Women Engineers Section extends its sincere appreciation to Malaysia Airports Berhad, Mr. Zan Ridzwan and Ir. Bibi Sabrena for their openness, professionalism and knowledge sharing. The technical briefing visit to the AMC strengthened understanding of the essential role engineers play in supporting safe, reliable and efficient airport operations.