

# Malaysia – 24km from mainland to island and all that's in between



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## Background

The Penang 2nd Bridge otherwise known as Sultan Abdul Halim Mu'adzam Shah bridge is a dual 24km carriageway toll expressway with 16.9km length over water. It is the longest bridge in Southeast Asia connecting Batu Kawan on mainland of Peninsula Malaysia and Batu Maung on Penang Island. This newly built bridge (completed March 2014) links the mainland to one of Malaysia's industrial centres on Penang Island and is designed to serve the area for at least 120 years.

Jambatan Kedua Sdn.Bhd. (JKSB) is a company formed by the Malaysian Ministry of Finance and was appointed as the concessionaire to construct, manage, operate and maintain the bridge. Upon completion of the bridge construction, JKSB had put out to tender a project to develop and implement an overarching systems solution to manage all their infrastructural assets; a system which is also envisioned to be instrumental for establishing an asset maintenance strategy and annual works programme for all assets. The project was called Integrated Asset Management System (IAMS) for Jambatan Sultan Abdul Halim Muad'zam Shah. The successful bidder is to develop the system within the first 12 months of being awarded the contract and implementation of the system is to ensue for the remaining 6 years of the project.

Gammerlite Sdn. Bhd. and its sub-consultants who jointly bid for the tender was successful in its endeavour and was awarded the contract in January 2015. After being shortlisted with three other international software providers and, given the demanding needs of the IAMS project to deliver a fully fledged working system while marginalising on room for errors in a short span of time, AMX was approached to provide the off-the-shelf software system for Asset Management.

Gamlite IT (Gammerlite's IT arm) and AMX began to work closely together to identify specific requirements of the project that would need implementing into the off-the-shelf AMX system. This meant adopting flexible working hours to match the time-zone differences, trips to Malaysia to meet with the client and presenting a relevant working demonstration with particular attention drawn to modifications unique to the project brief.

## About the project

The IAMS project is unique as it combines the computational and analytical capabilities of the IT systems and the intuitions of various engineering faculties. The system shall endeavour to gather, organise and present data derived from site based activities like asset registration, inspection, maintenance and rehabilitation. The data is then presented in a manner where the engineer at site would be able to make decisions in asset maintenance strategies. Day-to-day site operations activities are facilitated with the mobile version of the system, minimising unnecessary paperwork and clutter.

Baseline data obtained from operational activities, historical asset data information, construction history, in-depth understanding of the structures and its behaviour to local climate and environment, and other engineering expert input combined, shall derive the deterioration model of the structures, trigger values for maintenance or rehabilitation works.

The project is envisioned to assist the stakeholders in making decisions with regards to design of the structures, its performance and ultimately define the Total Cost of Ownership of assets owned.

## The assets

Types of assets being managed include over 16.9km of marine viaducts and cable stayed bridge, 7km of land expressway, Mechanical & Electrical components such as street lighting and cables, landscape, building and accident management.

Assets are hierarchically organised by their respective discipline (i.e. Bridge, Highway, Building, M&E, Landscape etc.). As built drawings of the structures are digitalised and presented in 3D models and relevant documentation (construction drawings, design and test reports, etc.) are linked to each asset nameplate.

AMX system is customised and configured to manage the various assets, their attributes, condition data, related documents, historical maintenance and rehabilitation information (work orders and NCRs and SORs issued etc.)

## The future of working with AMX

AMX will be the platform upon which all the respective management systems shall be individually configured to have its own interface, data models and workflow. Data from external systems, data derived from inspections and other site activities will also be channelled to AMX. Data from AMX will be computed to derive summative information which will be displayed on the IAMS dashboard. The dashboard is the stakeholders' and decision makers' interface where data like KPI performance, statistical information, work programmes based on budgetary constraints and other cost-related information will be made available.

To arrange a demonstration of AMX and find out how it can benefit your organisation, contact us on 0333 456 0768 or email [info@amxsolutions.co.uk](mailto:info@amxsolutions.co.uk).

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## WHY AMX WAS CHOSEN

- **OFF THE SHELF**  
Minimal development time
- **ADAPTABLE**  
System can be configured to be used to manage any type of asset
- **CUSTOMISATION**  
The user interface and modules are customisable to fit the needs of any sector
- **AMX MOBILE**  
Versatile and a boon for offsite-based operational activities
- **STRONG SUPPORT TEAM**  
A dynamic support team from various time zones and employs various support methods
- **INTEGRATION CAPABILITIES**  
A system that can easily interface and integrate with external systems

**"This project has been a great opportunity for AMX. The Gamlite IT team are knowledgeable and forward-thinking and together we have been able to increase AMX's overall functionality and capability to match the brief and provide a more comprehensive and reliable product."**

**Will Thomas**  
AMX Product Manager