

# Risk Management for MRT Project

**IMPLEMENTING** risk management strategies for massive infrastructure development can be daunting to say the least. Currently, one of the largest upcoming developments in the country is the Klang Valley Mass Rapid Transit (KVMRT). JURUTERA contacted En. Zulkifli bin Mohd. Yusoff, Group Director of Project Development Division at Syarikat Prasarana Negara Berhad, for his take on the issue.

## WHAT IS THE CURRENT PROGRESS ON THE MRT PROJECT?

The first line of the KVMRT covers critical townships between Sungai Buloh and Kajang. The line is 51km long of which 9.5km will be underground travelling through the city centre of Kuala Lumpur. The line is targeted to be operational by early 2017. Two other lines to complete the KVMRT network are still being studied by Suruhanjaya Pengangkutan Awam Darat (SPAD) and will be made public when it is completed.

The three months public display of the railway scheme, which started on 14 February 2011, has just been concluded on 13 May 2011. Relevant public feedback will be incorporated in the final railway scheme to be endorsed by the Government by the end of May 2011.

As of last month, we have also received the Detailed Environment Impact Assessment (DEIA) and Environment

Management Plan (EMP) approval from the Department of Environment (DOE). We have also issued Section 4 Land Acquisition Act, which freezes the Sungai Buloh-Kajang corridor. Once the final railway scheme is approved, Section 8 will be issued to the affected resident and property owners. Detailed design will commence once the final railway scheme has been approved.

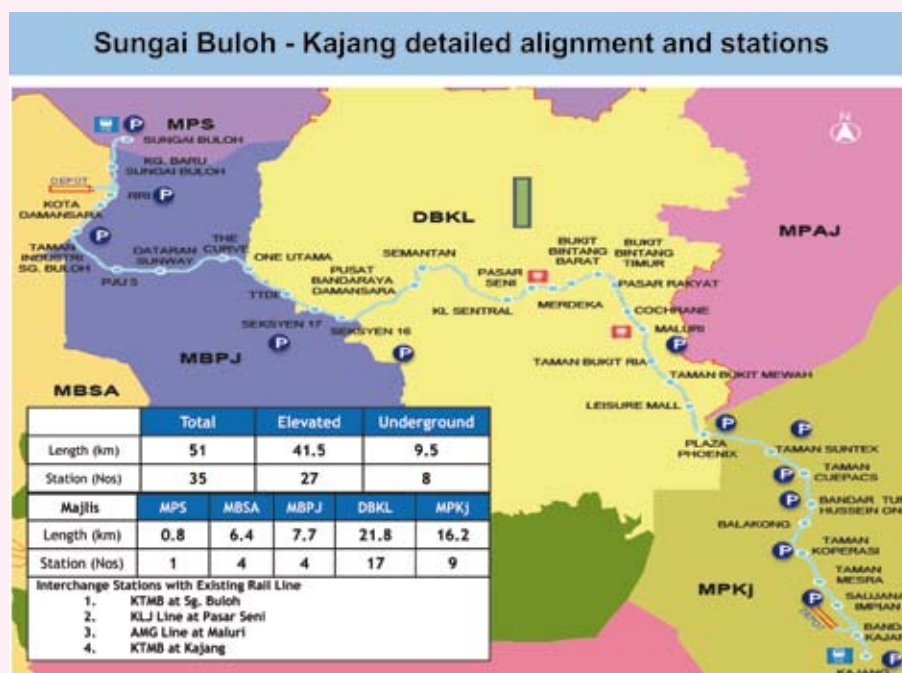
## WHAT ARE SOME OF THE BIGGEST CHALLENGES THAT THE PROJECT IS FACING?

There are several big challenges for this project which include the alignment impacting on properties and residences, station integration with community land use and other railway networks, impact on the environment, capital cost escalation and inter-agency concerns.

The railway alignment needs to take into consideration the targeted catchment area while minimising the social, cost and environmental impact. Cost is a major challenge that needs to be managed in order to make the project financially viable.

Since the KVMRT will become the biggest infrastructure development in the country, many agencies in the government and private sectors will be affected. The ability to make informed and timely decisions is a mammoth challenge to undertake.

We also need to inform the public so that they can get first hand information and understand the benefits of this project in regards to improving the liveability of the entire Klang Valley community in the foreseeable future. We have managed more





En. Zulkifli bin Mohd. Yusoff

than 30 public engagements with residents, businesses, local authorities, resident associations, non-governmental organisations (NGOs), State Legislative Assembly Members (ADUNs) and Members of Parliament (MPs).

While most residents and businesses would like the line to be underground, the costs can be exorbitant and generally in the order of about

five times higher as compared to an elevated line. A balance needs to be struck in order to provide a defensible business case for the viability of the project.

For environment issues, we have engaged consultants to assess the potential impacts and advise us on mitigation measures, especially in the areas of traffic management, air and noise pollution; both during and after construction. We hold meetings with related agencies on a weekly basis chaired by Ketua Setiausaha Negara (KSN) Y.Bhg. Tan Sri Mohd. Sidek bin Haji Hassan to address any outstanding issues in order to move the project forward.

### WHAT IS THE RISK MANAGEMENT PLAN FOR THIS PROJECT?

We have had various discussions and workshops among government agencies, contractors, consultants, etc., to identify all potential risks and proposed mitigating measures to reduce them. The risk log register covers areas that potentially

have unacceptable risks on safety, quality, cost and time implications. The risk register is a live document created at the planning stage of the project, updated throughout the various stages of design and construction, and finally closed off prior to the operational startup of the MRT.

### WHAT ARE SOME OF THE RISK MITIGATION MEASURES THAT ARE BEING IMPLEMENTED?

For the environment, we will be strictly implementing the EMP which will be subjected to regular audits by the DOE. For construction, sufficient site investigation is being carried out to identify all significant risks which could be to the detriment of the work progression.

Experienced local and international consultants have been engaged to assist with the planning strategies for the construction and operation of the MRT. This will help to mitigate the risks and, at the same time, provide sufficient data for constructors to perform the works with minimal disruptions. As mentioned previously, a risk log register has been created to detail the mitigation measure for each risk, which will be updated and used throughout the life of the project.

### IN TERMS OF RISK MANAGEMENT, HOW CHALLENGING IS THE MRT PROJECT COMPARED TO SIMILAR PROJECTS IN OTHER PARTS OF THE WORLD?

The technical challenges for this project are essentially similar to major projects executed in other parts of the world in terms of complexities and scope. The major difference may be in the ambitious time frame targeted for the delivery of the KVMRT network. ■

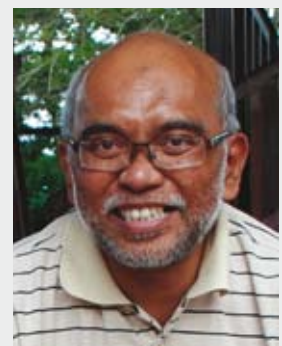
## Risk Management in Engineering

**ENTERPRISE** Risk Management is a relatively new field for most Malaysian firms. In the past, risk was usually dealt with on a project to project basis. Part of the problem could be attributed to the lack of qualified personnel in this field and poor appreciation of the benefits of effective risk treatment. To address this matter, JURUTERA got in touch with Dr Zahedi bin Faisal, Principal Consultant and Head of Science and Environmental Services at UKM Pakarunding Sdn Bhd.

According to Dr Zahedi, risk management is about recognising the potential effects if the objectives of an organisation are not met, or if there is an unexpected occurrence of events with respect to the activities of the organisation that have deleterious consequences on properties, environment and human lives; and then assessing the likelihood of such events and making decisions so that such likelihoods can be accepted or implementing measures for the consequences or likelihoods to be lowered to a level considered "as low as reasonably practicable".

For certain categories of local firms, such as those operating in a capital intensive environment or those intending to venture overseas, he believes that there is a need for managers of these enterprises to be educated on the need to take a more systematic approach to risk management. In general, he stated that Malaysian firms are familiar with the ISO 14000 (where the emphasis is in managing the

impact to the environment by an organisation) and OSHAS 18000 (where the emphasis is in managing the occupational health and safety by an organisation), while some are striving to obtain certification of having such management systems.



Dr Zahedi bin Faisal

Although conceptually the standard follows the same line of approach as ISO 14000 and OSHAS 18000, Dr Zahedi feels that implementing ISO 31000:2009 is a better alternative. However, he cautioned that, since most Malaysian firms may not be aware of the existence of the standard, these firms may not be ready to implement the elements of the standard. ISO 31000:2009 takes a holistic approach to risk management emphasising on the need for the proper systems and resources to be available within an organisation to deal with risk, requiring a person to be made accountable for it and underscoring the need for long-term process improvement.

In ISO 31000:2009, risk is defined as "the effect of uncertainty on objectives". It is claimed that this definition is neutral, and can lead to either a gain or a loss, which differs from the general perception that risk is a hazard, and the traditional consideration of risk as a negative event, especially in the financial and insurance circles.

Dr Zahedi however is of the view that the word "uncertainty" should be looked at objectively. He said, "What this means is, there is the "possibility" that the objectives of the firm may not be met, and obviously the effect would be negative. In running a firm, the objectives would be set such that there will be positive gains. Thus, the "effect of uncertainty on objectives" should be a loss or negative consequences."

In his opinion, managing risk is like managing occupational health and safety, the environment, the human resources, finance, quality of services or products, etc., i.e. all aspects of the operation of the organisation to achieve its objectives. Therefore, he feels that ISO 31000:2009 can become a standard for a harmonised management system incorporating aspects of ISO 14000, OSHAS 18000 as well as ISO 9000.

For many organisations, risk management can be a useful tool in terms of managing the latter to achieve its objectives. Currently, Dr Zahedi pointed out that most local firms recognise the risks involved in their operation and are managing their operations without formally following the elements of risk management. He said, "Although these firms may not be aware that they are following what is known as "risk treatment strategies", they are taking measures to reduce such risks (either to reduce the likelihood or chance of unwanted event occurrences, or to reduce or eliminate the consequences of unwanted events) or subscribing to insurance policies to transfer the risks."

In the engineering field, risk management is not new to the oil and gas industry, large-scale manufacturing concerns and contractors venturing overseas. Besides these areas of business or industry, Dr Zahedi believes that all kinds of public and private enterprise including government agencies can benefit from the implementation of risk management principles.

He said, "Risk management can be applied by the Government in the formulation of long-term policies and strategies by examining the consequences if such policies or strategies do not meet their objectives and proposing corrective measures that can be carried out during the period such policies and strategies are being implemented whilst being monitored."

However, he added that the implementation of risk management principles both by the public and private sectors will depend very much on the objectives of the organisation, and will include an evaluation of the effects if the objectives are not met, an evaluation on the chance of realisation of the effects, assessing the extent of the effects or the chance of realisation of the effects, whether unacceptable or tolerable, as well as formulating and implementing practicable measures to either reduce (or even eliminate) the effects or the chance of realisation of the effects. ■

*Note: Dr Zahedi bin Faisal can be contacted at [zahedi@pakarunding.ukm.my](mailto:zahedi@pakarunding.ukm.my).*

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