RISK MANAGEMENT

SYSTEM FEATURES

Business units across the Company embrace the Company's Enterprise Risk Management ("ERM") framework that underpins their day-to-day business activities. The framework provides a simple and effective management process to:

• Identify and review risks across all business units of the organisation

• Prioritise resources to manage risks

• Give management a clear view of the significant risks facing the Company

• Support decision making and project execution for better business performance

The Board, with the assistance of the Risk Committee, oversees the Company's ERM framework and top risks, whereas the Executive Committee, with the support of the Enterprise Risk Committee ("ERC"), is overall accountable for the ERM policy and system implementation and continuous improvement.

Since its establishment in 2017, the Risk Oversight Group, attended by Executives on a rotational basis, had continued to provide top-down views on the key risks of the Company during the year. Two "Blue Sky" workshops were also held in 2018 for the Executives to conduct in-depth discussions on selected key risk areas of the Company.

The Company's risks are rigorously identified, assessed and managed. Each risk is evaluated on the basis of the likelihood of the identified risk and the consequence of the risk event, taking into consideration the control measures in place. A risk matrix is used to determine risk ratings (E1 – E4), with E1 being a very high risk and E4 being a low risk. The risk ratings reflect the required management attention and risk treatment effort, and take into account the Company's risk appetite. The highest category of risks, "E1", is subject to Board, Risk Committee and Executive Committee oversight.
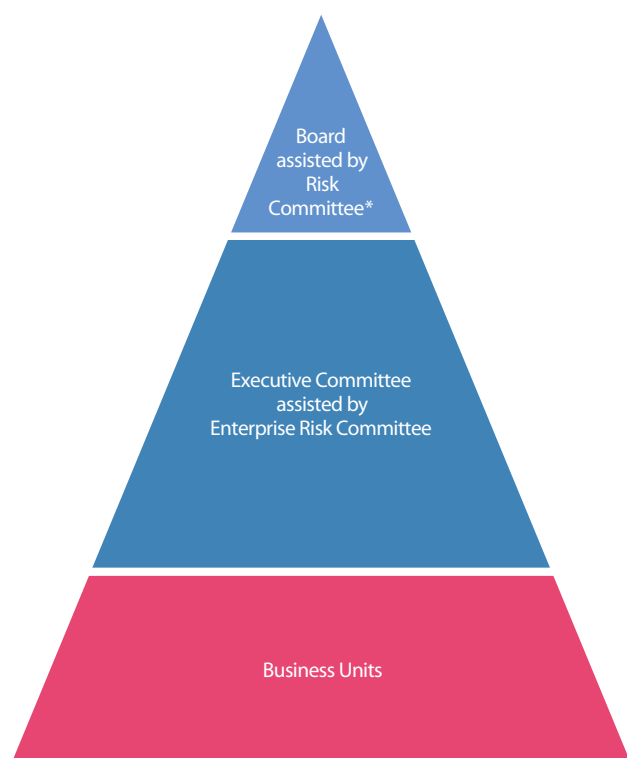
Board assisted by Risk Committee*	• Exercise ongoing risk oversight • Establish appropriate risk management strategies • Oversee the ERM framework • Review top risks and emerging risks • Conduct annual review of ERM system effectiveness

Executive Committee assisted by Enterprise Risk Committee	• Implement and continuously improve ERM framework
	• Enterprise Risk Committee
	  – Chaired by Legal and European Business Director
	  – Comprises representatives from key business functions
	  – Steers framework implementation and improvement
	  – Reviews Company's top risks and key emerging risks
	  – Reports to Executive Committee and Risk Committee quarterly, and to Board every six months

Business Units	• Establish arrangements and implement risk management process consistent with the Company's ERM framework and policy • Capture identified risks in risk registers for regular review and monitoring

* *See the Risk Committee Report (pages 146 to 147 of this Annual Report) for duties and work performed by the Committee in 2018*
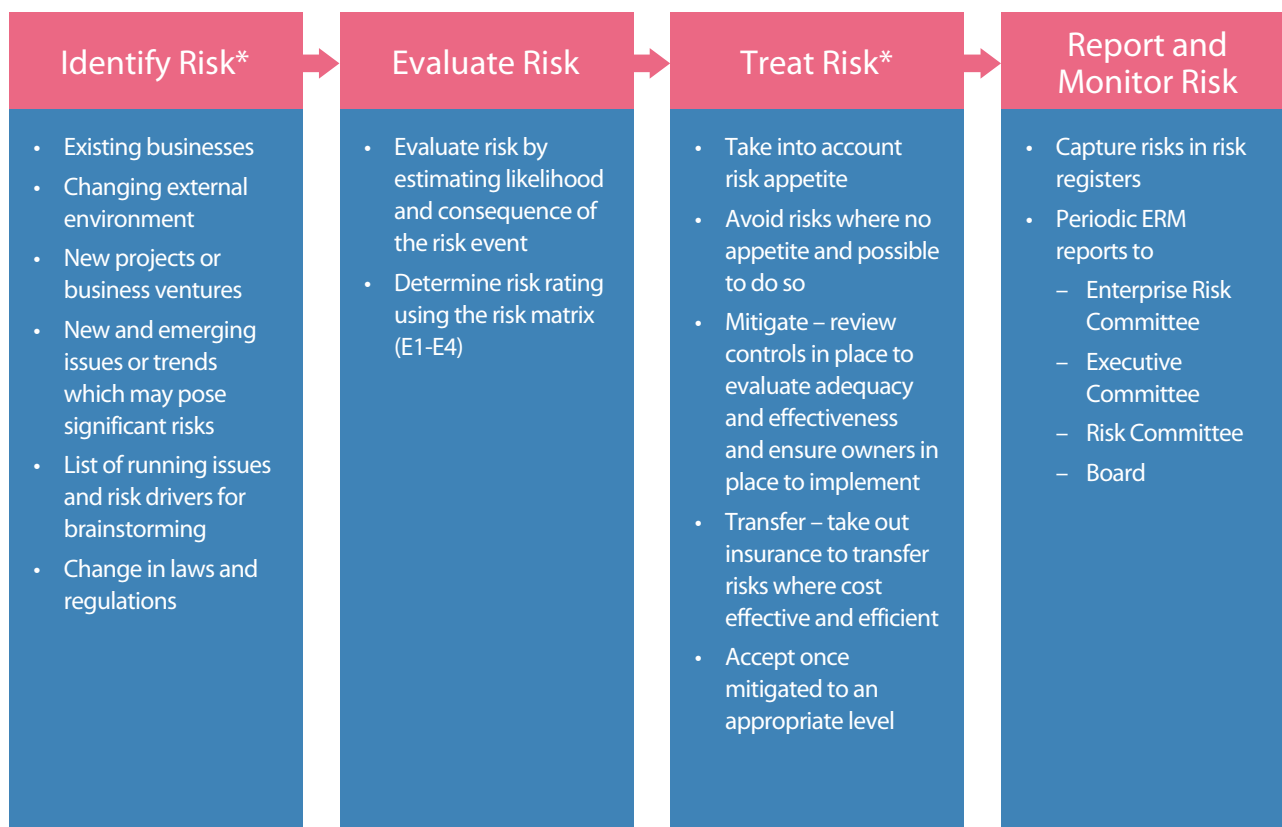
While risk taking is inevitable in the course of business, the Company's appetite for risk varies, but is particularly low in certain areas, such as in relation to safety and the provision of a reliable transport service.

"New Projects Delivery and Cost" has long been identified as one of the Company's key risk areas, with quality of work inherent therein. The focus of the enterprise level risk has, historically, been centered on the project programme and cost related risks following the programme delay and cost overrun encountered in the Express Rail Link project. Since the unearthing of the work quality issues relating to the Shatin to Central Link ("SCL") project, the key risk area of "New Projects Delivery and Cost" has been updated to become "New Projects Quality, Delivery and Cost" to make explicit reference to, and ensure appropriate focus on, the quality element. Improved controls for enhancing the checks and balances within relevant processes and procedures relating to the Company's project management regime have been identified for implementation.

MANAGEMENT PROCESS FOR SIGNIFICANT RISKS

The Company takes proactive measures to identify, evaluate and manage significant risks arising from its recurrent and growth businesses and from the constantly changing business environment. Risk management strategies are developed for different areas including but not limited to construction, operations, finance, treasury, safety and insurance.

The ERM Team within the Legal and Secretarial Division maintains a list of running issues and risk drivers pertinent to the changing business and external environments, which is used to assist the ERC in identifying potential risks that may emerge. In addition, the ERC, the Executive Committee and the Risk Committee review the Company's enterprise risk profile and brainstorm emerging risks quarterly to ensure that key risks and those cutting across different areas of the business are captured.

Identify Risk*	Evaluate Risk	Treat Risk*	Report and Monitor Risk

• Existing businesses
• Changing external environment
• New projects or business ventures
• New and emerging issues or trends which may pose significant risks
• List of running issues and risk drivers for brainstorming
• Change in laws and regulations
	• Evaluate risk by estimating likelihood and consequence of the risk event
	• Determine risk rating using the risk matrix (E1-E4)
		• Take into account risk appetite
		• Avoid risks where no appetite and possible to do so
		• Mitigate – review controls in place to evaluate adequacy and effectiveness and ensure owners in place to implement
		• Transfer – take out insurance to transfer risks where cost effective and efficient
		• Accept once mitigated to an appropriate level
			• Capture risks in risk registers
			• Periodic ERM reports to
			  – Enterprise Risk Committee
			  – Executive Committee
			  – Risk Committee
			  – Board

* Areas below are not exhaustive

Focus areas for risk management of the Company include:

Effective and Balanced Relationship with Key Stakeholders	
Key Challenges	• Strive to seek a balance between the sometimes competing demands of the Company's key stakeholders
Key Controls	• Implement engagement plan for key stakeholders to maintain effective communication channels • Observe the Company's operating obligations and maintain good performance of the Company

Operations Safety and Service Incidents	
Key Challenges	• Major railway service incidents • Management of crowding
Key Controls	• Investigations/technical studies conducted on individual incidents to identify opportunities for continuous improvement • Enhanced crowd management plans in place • Signalling systems being upgraded to enable more frequent train services to be run in the longer term • Works Management Office established to oversee the integrated management of the combined risk of concurrent major capital projects that may have an impact on the operating railway

New Projects Quality, Delivery and Cost	
Key Challenges	• Compliance with quality standards • Close proximity of construction activities to operating railway and urban developments • Management of interfaces with different parties • Adherence to the programme and cost of the projects • Compliance with record keeping requirements
Key Controls	• Periodic audit and assurance of compliance with processes and procedures • Training for staff of the Company to ensure familiarization with the processes and procedures relevant to their work • Training for contractors' staff and workers on safe working adjacent to railways and developments • Adoption of technology to strengthen record keeping • Close coordination with parties involved in interfacing activities and enhancement of design and construction methodology • Stringent control of contingency funds • Monitoring of project progress against approved Key Performance Indicators

Workforce Transition/Competence/Institutional Knowledge/Resourcing	
Key Challenges	• Stream of staff reaching retirement age in coming years after MTR train service has been in operation since 1979 • Manpower shortages and retention challenge in several job types
Key Controls	• Proactive manpower sourcing and succession planning • Skills and competency enhancement • Provide flexible resource pools and improve staff mobility for growth businesses • Explore innovative solutions to mitigate manpower shortage

New Business Model/Technological Disruption/Competition	
Key Challenges	• Current business model disrupted by new technology • Manage competition from other transport modes
Key Controls	• Capitalise on e-commerce and technology to explore new business models • Monitor competition from other transport modes and implement initiatives to maintain market share

Delivery of Growth Strategy	
Key Challenges	• Challenging business model for future new lines in Hong Kong • Strong competition for business opportunities outside Hong Kong • Business performance below the bid models and assumption
Key Controls	• Formulate innovative business models for new lines in Hong Kong • Maximise branding effect of the Company • Conduct regular environmental scan for new business opportunities outside Hong Kong • Formulate and implement business plans for underperforming businesses for improvement and monitoring

Security Threat (cyber/physical)	
Key Challenges	• Threat of cyber-attack on Operations and IT systems • Terrorist attack threat, in particular for railway operations of the Company outside Hong Kong
Key Controls	• Enhance IT network resilience to protect the Company against cyber attacks • Implement cyber security protection systems for IT and railway operations systems • Enhanced corporate security governance framework

Process of System Effectiveness Review

On behalf of the Executive Committee, the ERC evaluates the effectiveness of the ERM system at least annually. The Legal and European Business Director, who chairs the ERC, presented the ERM system effectiveness review results for the year ended 31 December 2018 to the Executive Committee, which confirmed the review results, on 31 January 2019, and to the Risk Committee on 25 February 2019.

For the year ended 31 December 2018, the Risk Committee, with delegated authority from the Board, has evaluated the effectiveness and adequacy of the Company's ERM system and considers that it is overall effective and adequate, based on a number of review areas. Nonetheless, there are areas for improvement in relation to the Company's project management regime as revealed by the SCL incidents, for which improvement opportunities have been identified for implementation.

Factors considered during the review
- Review areas suggested in the Corporate Governance Code for the Board's annual review of the risk management system
- Annual internal certification of risk management effectiveness by Department Heads and Heads of subsidiaries / associates
- Results of an in-house survey conducted in 2018
- Risk management of subsidiaries and associates
- Benchmarking / roundtable / peer group ideas exchange
- Risk management trainings and promotions held in 2018

Conclusion
The ERM system was considered overall effective and adequate for the year ended 31 December 2018, notwithstanding the shortcomings identified in certain areas of the Company's project management processes and execution in relation to which improvement actions have been identified.

CONTINUOUS PROCESS IMPROVEMENT

Key improvements in the ERM system implemented within 2018 include:

- The enterprise risk matrix has been reviewed and updated to more appropriately align with the latest internal protocols

- Enterprise risks have been reviewed for further differentiation and those risks assessed to be more appropriately monitored and managed by business units as part of normal business have been archived from the enterprise risk map, to enable more focused risk discussion at the enterprise level

- In October 2018, the Company launched its Risk Awareness Week ("RAW") event for the fifth consecutive year to continue promoting risk awareness across all levels of the organisation. The event included a workshop attended by the Executives and senior managers on emerging risk themes and their relevance to the Company, a lunchtime seminar on effective risk management system and cyber threats, a series of interactive half-day workshops for different levels of staff, including senior managers, managers, supervisors and general staff, and an online quiz. The RAW events were well received with over 1,000 participations.

We keep ourselves abreast of the latest developments in risk management through reviews with users, cross-industry benchmarking and experience sharing, including our attendance at the eleventh UK ERM Roundtable and the tenth HK ERM Roundtable meetings.