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Impact of Advanced Researches on Mega-Infrastructure Developments in Southeast Asia: Case Study of Thailand Underground



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Many mega-infrastructure projects such as high-speed train, new airport extension, and large-scale public transportation system, have been developed in Southeast Asia region including Thailand. At present, one of the most challenging engineering projects is the second phase underground system in City of Bangkok known as the MRTA Blue Line Extension constructed to reduce heavy traffic problem in the metropolitan area. There are four underground stations needed to be excavated along the new subway alignment that two of them have to be constructed underneath very sensitive areas of Bangkok where Old China town and Royal Palace are located. As a result, their construction spaces are very limited and typical cut and cover method is prohibited. Besides, aged residential and commercial buildings are poorly supported and traffic is very dense. Therefore advanced researches on analysis and design of the stations are necessary to determine an optimum solution to serve both functional requirements and environmental concerns. To achieve the objectives, multi-method stations (Cut & Cover and Conventional Methods) are introduced for the first time in Southeast Asia. This case study is an interesting challenge that civil engineers and researchers have to encounter in the real world.