

Seminar on Trenchless and Tunnel Technology in Myanmar



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THE first seminar on Trenchless and Tunnel Technology (No Dig) (TTT) was held in Yangon, Myanmar from 5 to 7 June 2013. The event was jointly organised by Myanmar Engineering Society (MES), The Institution of Engineers, Malaysia (IEM) and ASEAN Engineering Register (AER). It attracted over 70 participants from Myanmar and overseas and was conducted by several prominent trenchless experts from USA, Singapore, Malaysia, Thailand and Philippines.

Trenchless Technology (TT) is a branch of construction engineering dealing with techniques and related equipment used to develop, maintain and renew subsurface utility networks without excavating continuous trenches. It is a branch of applied engineering, which is state of the art and is used to develop, manage and renew continuous cabled and piped networks for transferring signals and fluids respectively. Major applications of these techniques are for water supply, rainwater disposal, sewer disposal, gas and petrochemical products, electrical and telecom signals and other underground networks.

In many ASEAN countries and elsewhere in the world, services networks have been laid using this method which eliminates the hazards, risks and social cost associated with open trenching. This technology is being slowly but surely preferred to more traditional methods, especially when the overall construction and social costs are taken into account. In view of the increasing importance of this technology, IEM and MES intend to organise a series of roving seminars on Trenchless and Tunnel Technology, with the first being held in Myanmar.

Prof. Sterling and Prof. Ariaratnam, both from the USA, are the past chairman and current chairman respectively of the International Society For Trenchless Technology (ISTTT). They explained the concept of trenchless technology and covered areas of research as well as benefits of the technologies in the installation of services without the hassle of the open cut. Though more expensive as it utilises specialised machinery from depths exceeding 6m, Trenchless Technology is still a more viable option, even in countries like Myanmar, when one considers open cut excavations require proper strutting and shoring as well as the social cost of traffic disruptions and other problems.

Mr. Cheng Kim Hua, from Malaysia, talked about the development of TTT in some of the major cities he had worked in (including Bangkok, Singapore, Kolkata and Mumbai) and said it was time for Myanmar to look into these technologies. He said the teams of speakers could help accelerate the development of TTT by jointly investigating and considering such projects. He also explained the various specifications and contractual situations reacted to TTT.

Ms. Trisha Sun then highlighted the applications of TTT for installing large section boxes. These included pipe



MES and speakers



Completed sections – accurately done



Rectangular Pipe jacking machine



Pipe jacking
(Tunnelling machine for rock)

roof and rectangular machine jacking, citing numerous crossings being done using machines manufactured in the Far East. (Pipe roof is where a series of steel pipes are installed by microtunnelling machines to form an arch and tunnel. The soil within the pipe arch is then excavated safely and with accuracy).

Mr. Mundo (Thailand) and Engineer Sooksun (Philippines) who are working in Singapore, spoke of tunnel excavation using shield machine and the implementation of pipe jacking projects in the island republic.

A workshop was conducted on the last day to discuss the adoption of specifications and invited participants to further advance TTT ideas within the Asian regions.

The seminar ended with the hope that the new technology will bring benefits to the people of Myanmar and that, with similar development in Bangkok, and initial funding from development agencies, Trenchless and Tunnel Technology will take off.

MES and AER are hoping to conduct more such seminars with the next event likely to be held in February 2014. It is envisaged that TTT will become more prevalent as cities become more urbanised and constraints on space become more challenging. ■

Ir. Yam Teong Sian is currently the Vice Chairman of the Standing Committee on Information and Publications and Bulletin Editor. He has served as Council Member of the Institution since 2000 and is currently the Executive Committee member for 2013.

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