

Implementation Report on Technical Transfer Program in Myanmar

~the Project for Construction of New Thaketa Bridge~

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1. The New Thaketa Bridge

The project for construction of New Thaketa Bridge is being implemented under the Japan's Grant Aid during the period April 2015 to July 2018. The Client is the Department of Bridge, Ministry of Construction (hereafter referred to as the MoC). The Consultant and the Contactor are Nippon Koei and the consortium of Tokyu-Toyo-IIK respectively.

The bridge length of the New Thaketa Bridge is 253.0m, consisting of the Pre-Stressed Concrete 3 Span Continuous Extradosed Bridge of 220.0m and Pre-Stressed Concrete Box Girder Bridge of 33.0m.

2. Background/Purpose of Technical Transfer

The MoC requested an implementation of Technical Transfer Program along with the construction of the New Thaketa Bridge. In response to the request, young engineers belonging to the MoC were assigned to the project. The technical transfer program was carried out as a soft component under the Japan's Grant Aid during the period January 2016 to December 2017.

The purpose of the technical transfer program is to enhance technical skills on bridge engineering. Two main aims were settled as,

- To understand a sequence of bridge construction of the New Thaketa Bridge (survey, planning and design), the examined factors through whole design process, and solutions towards difficulties,
- To learn the implementation process of construction work and its management methods from the position of the Consultant/Contractor thorough experiences on site, as well as study fundamental knowledges related to the



Fig 1. Lecture



Fig 2. Site OJT

characteristic points of construction work especially in the Steel Pipe Sheet Piles (SPSP) foundation and PC Extradosed Bridge.

3. Overview of Technical Transfer

The Technical Transfer program is composed of two parts: the lecture and site OJT. Fig 1 and Fig 2 depict the pictures of lecture and site OJT respectively. Table 1 shows the implemented schedule of the program. 12 trainees participated in the lecture and 9 trainees joined the site OJT.

Keyword: New Thaketa Bridge, PC Extradosed bridge, Steel Pipe Sheet Pile, Technical Transfer, Japan's Grant Aid, Myanmar

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In the lecture part, lectures on six subjects were conducted. All lectures cover from basic theory of construction work to what significantly needs to be considered for actual bridge design. An examination was conducted in the end of each lecture. The levels of understanding were checked by the results of examination and questioner. Table 2 describes a summary of the lecture contents.

In the site OJT part, the trainees proactively learned the method to proceed with the construction and management from the position of the Contractor/Consultant. The total implemented time was over 2000 hours. The levels of understanding were determined by the results of questioner. Table 3 shows a summary of the site OJT contents.

4. Conclusion

This paper describes the brief implementation record of Technical Transfer Program conducted for two years. According to the examination results and the submitted questionnaire, the levels of understanding was considered to be at least moderately high for both lecture and site OJT.



Fig 3. Completion Ceremony

5. Acknowledgement

This technical transfer program was successfully completed thanks to strong passion by the MoC, continuous assistance by Japan International Cooperation Agency, and proactive corporation by the Contractors. We really appreciate your kind support for the project and wish all trainees much success as leaders of construction industry of Myanmar. Fig 3 depicts the completion ceremony held on 15th of March 2018 in the capital of Myanmar.

Table 1. Implemented Schedule

Item		2016												2017											
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Lecture	Geotechnical Survey	■	■																						
	Hydrological Survey						■	■																	
	Bridge Planning								■	■															
	Foundation Design		■	■																					
	Sub-Structure Design					■	■																		
	Super-Structure Design										■	■													
Site OJT	Foundation	■	■	■																					
	Sub-Structure				■	■	■	■	■	■	■	■	■												
	Super-Structure													■	■	■	■	■	■	■	■	■	■	■	■
	Road													■	■	■	■	■	■	■	■	■	■	■	■

Table 2. Detail of the lecture

Subject	Main contents
Geotechnical Survey	Geographical and geological condition, Geographical profile, Numerical analysis on settlement and stability etc.
Hydrological Survey	Velocity, Flow rate, Water level change due to tide and precipitation, Determination of the high level water etc.
Bridge Planning	Control points to be considered, Bridge length and span, Comparison to determine the optimal bridge type etc.
Foundation Design	Design method of Steel Pipe Sheet Piles, Design method of Cast-in-place Pile etc.
Sub-Structure Design	Design method of RC abutment, Design method of RC pier etc.
Super-Structure Design	Design method of Extra-Dosed Bridge, Design method of Single Box Girder Bridge etc.

Table 3. Detail of the site OJT

Subject	Main contents
Position - the Consultant	<ul style="list-style-type: none"> • Confirmation and approval for method statement, construction material, shop drawing • Quality control: Incoming inspection for construction material, Inspection for construction accomplish rate • Construction schedule control: Progress management in periodical meetings • Safety control: Implementation of safety patrol to check site condition
Position - the Contractor	<ul style="list-style-type: none"> • Man power arrangement, Construction material/vehicle procurement, Preparation of construction work • Role of heavy vehicle and its usage • Technically important points of construction work at each phase • Quality control method by the Contractor, Safety control method by the Contractor