Project Management in Thang Long Industrial Park Project in Vietnam

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1. Introduction

Thang Long Industrial Park Project (TLIP) in the Socialist Republic of Vietnam was implemented to develop an industrial estate to help meet the growing demand for industrial facilities in Vietnam. In order to successfully implement the Project, the consulting engineer played a key role in project management by introducing diverse technologies and settling contractual and financial issues from the initial stage until completion of the Project.

TLIP was initiated as a result of the Master Plan Study on Hanoi Industrial Development conducted by the Japan International Cooperation Agency (JICA) in 1995. TLIP was originally envisaged to be implemented by Japanese official development assistance (ODA). However, it was attractive for a private finance initiative (PFI) supported by the adjacent Hanoi Urban Infrastructure Development Project planned by the Hanoi Peoples' Committee. Consequently, a joint venture company (Thang Long Industrial Park Corporation; the Owner) of a Japanese trading company (Sumitomo Corporation) and a Vietnamese State company decided to invest in TLIP. The project site is located in the north of Hanoi City and beside the highway connecting Hanoi City and Noi Bai International Airport. The total development area is 300 ha and the development is scheduled to be carried out in three phases under the approval of the Vietnamese government. A feasibility study of the first phase development of 121 ha was carried out in 1996, followed by detailed design in 1997. Construction of the first phase development commenced in 1998 and was completed in 2000.

2. Technical and Social Aspects

Project Feature

The main features of the first phase development are summarized as follows.

1) Development area: 121 ha
2) Area for sale: 87 ha
3) Earth work: Land reclamation 2,915,000 m^3
4) Road system: Main road 42 m wide, 2.6 km long; Sub road 27 m wide, 1.3 km long
5) Water supply system: Distribution line (D100-400) 6.8 km long; Well 1,000 m^3/day x 2; Water purification plant 2,000 m^3/day
6) Sewerage system: Sewer line (D300-700) 6.6 km long; Wastewater treatment plant 2,000 m^3/day
7) Storm water drainage system: Open ditch 6.8 km long; Two retention ponds 20,600 m^3 and 15,800 m^3
8) Electricity supply system: Sub-station 110/22 kV; Transformers 40MVA x 2; Distribution line 22 kV, 9 km long

Land Reclamation

Land reclamation was a main component of the work for

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the TLIP. The project site is situated in the lowland of Thang Long District and was highly flood-prone and subject to flooding each rainy season. The land reclamation therefore had to be maintained at an elevation that could avoid damage by flooding. The Owner had deep concerns over the land reclamation level since it had a large affect on the project cost. The Vietnamese government is also interested in the determination of the land reclamation level for the future development of this area. Based on the total consideration including hydrological analysis, the land reclamation level was determined to be 2.3 m on average to cope with a 100-year probable flood. The total embankment volume came to 3 million m^3. As no earth borrow area could be found near the project site, utilization of a sandbar in the Red River near the project site was proposed instead of earth borrowing from a remote site. The sand mining by three dredgers and pipeline was selected as an optimum method. The schedule of the land reclamation was set to be 6 months based on the trial dredging in the vicinity of the project site. However, it took 1.5 years to actually complete the land reclamation because of claims by the inhabitant concerned and this delay made the overall schedule very tight.

Social Aspects

It is essential to achieve the understanding and cooperation of the inhabitants and community in and around the project area as well as the necessary approvals and permissions of the relevant government agencies for the successful implementation of any project. In the case of the TLIP, accountability to the inhabitants was first consideration. The significance of the Project, allocation of compensation, etc. were explained to the inhabitants by the government agencies concerned. Also, the contractor carefully confirmed the boundary of the sand exploitation area with the inhabitant groups in the field. In addition to the above, the inhabitants in the project area were employed and lodging houses were borrowed in the village of the project area in order to obtain the cooperation of the community. By such efforts, the TLIP was completed within the scheduled time.

3. Contract Mode

The bid to procure a contractor was carried out with five bidders short-listed. A two-envelope method was adopted for bid evaluation. For PFI projects, first objective of the owner is to keep the planned cost and schedule because they are closely related to the business plan for selling the land to clients on schedule. Therefore, the contract mode was carefully studied taking into account the instability of law and taxation in Vietnam. Finally, the Project was let as one contract package even though the Project included various components such as civil, mechanical, electrical works. The contract concluded had the following features:

1) Adoption of FIDIC forth edition, conditions for civil engineering; and
2) Adoption of a lump sum contract.

The contract conditions in 1) and 2) are not always consistent, so that some supplemental clauses were prepared as particular conditions. For instance, a bill of quantities was used for variation orders or omission of works, even though the contract was for a lump sum. In addition, an alternative bid applying value engineering was permitted to lower the construction cost further. Unfortunately no bidder submitted an alternative bid.

4. Overseas Project Management

Thang Long Industrial Park Project has been used as an example of overseas project management. In general, it is recognized that the role of the consulting engineer is becoming more important for the following reasons.

With increasing demand for environmental considerations, technology innovation represented by information technology (IT), etc., the technologies required by the project are becoming subdivided and specialized. In addition, stakeholders relevant to the project are increasing due to diversification and globalization of project implementation. The consulting engineer has to manage the project by integrating the separate specialized technologies and coordinating the interests of stakeholders in order to achieve the purposes of the project rationally.

In recent years, economic infrastructure has often been developed through PFI as well as the conventional government finance initiative in both developed and developing countries. Projects therefore have to be studied from the viewpoint of either PFI nor government finance initiative or possibly combination of the two. The consulting engineer is required to have a broad project management capability from engineering to legislation and finance.