

Session Report:

MANAGEMENT II

Chairperson: Chun-Su Chon (Daewoo Engineering Company, Korea)

Secretary: Kimio Shimomura (CTI Engineering Co., Ltd., Japan)



Dr. Chun-Su Chon



Mr. Kimio Shimomura

Value Engineering for a Port Expansion Project

by Prof. Saeed Daniali

How Can You Get the Real Benefits from Construction Management Method

by Mr. Bok Nam Lee

Management of a Demand Driven Approach Project – 5 Towns Negros Water Supply and Sanitation Project

by Mr. Noel M. Ortigas



Prof. Saeed Daniali



Mr. Bok Nam Lee



Mr. Noel M. Ortigas

1. Summary

This summary highlights key management challenges in the construction of public works, which have been identified from the three presentations in this session “MANAGEMENT II” in the track of “Construction & Management. It includes the themes of Value Engineering, Project Delivery System and Demand Driven Approach with Community Participation, presented by:

- ◆ Saeed Daniali, Member of ASCE, Ph.D., Professor and Chair, Dept. of Construction Management, University of Washington
- ◆ Bok Nam LEE, Member of KSCE, PMP, Senior Research Fellow, Dept. of Project. Mgt., CERIK
- ◆ Noel M. ORTIGAS, PICE Member, M. Eng’g., BS C.Eng’g, Vice-President, Engineering and Development Corporation of the Philippines (EDCOP)

The presentations are summarized as follows:

1) Value Engineering for a Port Expansion Project

The Port of Port Arthur is located Southeast of Texas, along the Sabine Neches Canal at the city of Port Arthur. In 1993, the Port passed a \$34 million bond to add two additional berths to its existing facilities. The site of the expansion project was located adjacent to the Port properties, and was used as a shipyard for more than three decades. Two slip areas existed at the east and west sides of the 38-acre land. The slips were used to repair vessels. The construction was divided in four phases. Phase III of the project consisted of construction of a steel bulkhead retaining wall system and placing fill materials in the two slips. At the end of this phase, several major failures were discovered in the newly built structure. Due to these problems, the owner stopped the construction, fired the engineer, and hired a new consulting firm to redesign the structure. Also, the owner hired an owner representative team to oversee both the design and the construction of the project. The main challenge for the new team was how to correct the errors committed during the third phase of the construction. In order to determine the suitability of the retaining wall system, a comprehensive forensic investigation and a value engineering study were conducted. The results of these studies were used to retrofit the retaining wall system, and to vitalize the West slip area.

2) HOW CAN YOU GET THE REAL BENEFITS FROM CONSTRUCTION MANAGEMENT METHOD ?

This paper emphasizes the effective utilization of the construction management method in terms of project delivery systems. The CM method shows relatively more productive results comparing with the traditional method, Design-Bid-Build approach. However CM method requires several project environmental premises to get the benefits.

The premises for the CM method implementations include the proper selection of project delivery method, the owner’s perception, early selection of CM contractor, the CM contractor’s capability, and overall project level communication system setup.

3) Management of a Demand Driven Approach Project - 5 Towns Negros Water Supply and Sanitation Project

The 5 Towns Negros Water Supply and Sanitation Project (NWSSP) is implemented with the technical and financial assistance from the Danish International Development Assistance (DANIDA) and from the Philippines' Local Water Utilities Administration (LWUA). The project took off from the first 10 Towns Water Supply and Sanitation Feasibility Studies from 1991-1994. The Demand Driven Character makes the project unique in all the other water supply project implementation strategies in the Philippines – a shift in the usual activities and work patterns of the engineers assigned to NWSSP.

2. Presentation Highlights

These presentations introduced three (3) case studies in relation to construction management in different phases, which include Value Management during construction phase, CM method as a mandatory project delivery system and Demand Driven Approach (for a water supply and sanitation project) in the planning and decision-making process. These are all construction management methods in general to implement infrastructure projects more efficiently and effectively, but especially highlight the following aspects.

1) Value Engineering for a Port Expansion Project

When serious failures are discovered during construction, it would be most important to conduct a comprehensive forensic engineering investigation to identify clearly the problems, and also the owner should hire a consulting team with specialists to provide value engineering services to figure out the most feasible countermeasures technically and financially. The author concluded that the combination of the forensic investigation and the value engineering study helped the designer to discover problems created by faulty design assumptions and construction procedures, and to select and develop repair methods satisfying both technical requirements and overall constraints.

2) How Can You Get the Real Benefits From Construction Management Method?

From the traditional delivery system, Design-Bid-Build (DBB), the construction market is looking for more diversified delivery systems, such as Design-Build (DB) and Construction Management (CM) approach. In Korea, CM method is expected to be widely adapted in the local market by the public owners. For the successful CM method implementation, there are five categories of the premise, which should be more emphasized. These are (1) the most optimized project delivery method should be selected; (2) the owner's duties and perceptions should be clearly defined; (3) the CM adaptation timing should be early enough; (4) the capable CM contractor should be selected; and (5) the communication system should be developed and deployed. It is concluded that it will be inevitable for the owners to expand the CM approach for its end users, the people in the Asian region public construction market, and that in order to get the real benefits from the CM approach, it is strongly recommended to meet the project environmental conditions and to understand why the CM method is adapted.

3) Management of a Demand Driven Approach Project - 5 Towns Negros Water Supply and Sanitation Project

The challenge is for water supply and sanitation systems to have the required infrastructures through proper engineering and construction (**the hardware part**); but likewise providing the essentials (**the software part**) geared toward: a) recognizing and managing water as an economic good; b) systems management involve all government and non-government organizations; c) strengthening the institutions involved in water and sanitation through capacity building (“doing and learning” approach); and **that the projects be demand-oriented**. Demand Orientation requires that stakeholders have the opportunity to make a rational choice among technically feasible options for the deliver of services, and would be involved through constant consultations and coordination, in the planning, implementation, marketing of services and operation of the systems. In realizing the Demand Driven Approach strategy, two (2) indications are expected of all project stakeholders or project “actors” – **Indication of Demand** and **Proof of Demand**.

3. Conclusion

From this session it could be concluded that :

1. To assure the project success, the need should be proved through demand oriented feasibility study, and should be managed by selecting CM contractor at the earliest time of the project.
2. If any shortcomings or mistakes are detected through the project duration, forensic investigation and value engineering methodology should be implemented immediately to rectify the situation.

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