

## **Training Needs in the Local Infrastructure Construction Industry Market in North Cyprus**

Balkiz Oztemir  
*Department of Architecture  
Girne American University, Girne, North Cyprus  
kaylabalkiz@yahoo.com*

### **Abstract**

The North Cyprus economy experienced a construction boom in the aftermath of the UN Peace Plan known as the Annan Plan for settling the Cyprus problem. However there has been little attention given to the 'know-how' of the construction companies' and how to face such a boom. The structure of the construction companies on the northern part of the island is relatively small and family owned where traditional and short-term approach is common. Furthermore, these local companies are losing their competitive edge to international companies at larger scale projects which are internationally funded. Within the last year, two infrastructure construction projects were observed to identify the shortcomings of the infrastructure construction industry both at the management and technical skills level. Findings show that project management and the technical staff's know-how is limited. Furthermore, the management does not have the appropriate background leading to series of problems at every level of a project cycle. The future of the local construction companies in Northern Cyprus is ambiguous if the attitude towards improving their know-how and training their staff to meet the demands of the industry does not change. Structured training that will incorporate the needs of the local companies and the technical staff might sustain the local construction companies' existence in the long term.

### **Keywords**

Project management, Competence, TRNC, Infrastructure, Training

### **1. Introduction**

Training and skills provision in management in Northern part of Cyprus in its infrastructure construction industry have not been effectively addressed. According to the head of the Estate Agents' Union, construction now accounts for 30.2 % of the TRNC economy which drives 62 other sectors in the country (Sungur, 2007). Even though the construction industry is one of the most important industries in the country and the North Cyprus economy experienced a construction boom in the aftermath of the UN Peace Plan known as the Annan Plan for settling the Cyprus problem, very little research is undertaken to address the problems challenging this market.

Urgent demand in development and rehabilitation of the infrastructure of the country, followed by the boom in the housing construction has initiated several infrastructure projects. In addition, recently, more funding is being generated from international sources like Turkish Republic, EU and UNDP to tackle the problem; therefore more opportunities in the infrastructure construction industry are generated. Unfortunately, available contractors that are qualified to participate in these projects are limited and there is a risk that these opportunities might be lost to international firms, which is not welcomed by the local industry. Just recently the Association of the General Contractors protested a waterline construction project funded and tendered by EU (the tender was open to all EU countries) claiming that the tender conditions put the local contractors at a disadvantageous position.

Facing various challenges coupled with the pressures from clients to improve quality, to reduce costs, and to speed up construction processes construction companies have to seek and learn new solutions that are necessary to meet growing demand for new types of buildings and structures. Regulatory frameworks, both international and local, concerning health and safety, sustainability, and the environment, continue to change, and therefore, require construction firms to comply. All of these require tremendous learning, so that construction firms would be able to better deliver their services to the clients (Tjandra and Tam, 2000).

High quality skills are essential for achieving performance improvements and failure to modernize recruitment and training can result in skill shortages, higher prices and poorer quality output (Gann and Senker, 1998). The problems of training and skills provision, therefore, work against the industry's long-term needs and restrict its ability to respond to the variability of the production process (Arhani *et al.*, 2003). Problems affecting the construction industry in north Cyprus include lack of management skills, shortage of skilled labor, low productivity, and bad quality of supplies which are very similar attributes that a lot of developing countries possess (Ofori, 1993). In addition, North Cyprus' infrastructure construction industry faces more major challenges amongst which are project overruns, poor quality of structures, inappropriate procurement systems, failure to cope with infrastructure needs, resulting from construction boom, and the inability to adopt best practices. Investment in training, equipment, research and development is not something the local companies neither spare for nor wants the international companies because of fear of losing financial income. In addition, companies in local infrastructure industry are guided by short-term goals.

This study is part of an on going research to identify the know-how and skill levels of the infrastructure construction industry and to find out what might be the best solution to be offered to improve the skills of the construction companies to increase their awareness that investing in their management and technical competence would increase their sustainability and competitiveness. The construction companies should be "*cognizant of their strength and weaknesses in order to overcome the challenges of increased competitiveness*" (Isik *et al.*, 2008).

## **2. Background on the Projects and Companies Observed**

Within the last year, two infrastructure construction projects were observed to identify the shortcomings of the infrastructure construction industry both at the management and technical skills level. Projects observed were both located in Kyrenia, the tourism heart of the country, where the construction boom in North Cyprus was experienced the most. It is also important to note that the city does not have fully working sewage system and most of the waste in the city is treated by individual septic systems. The city recently has started building sewage lines that will then be taken to an existing waste water plant in the city. Consequential to the construction of the new sewer lines in the city, the capacity of the old waste water plant had to be upgraded and rehabilitated.

The first project (*Case Study 1*) was a new sewer line of about 3 km long in Kyrenia area and scheduled for three months, and the second one (*Case Study 2*) was the rehabilitation and expansion of the afore mentioned waste water treatment plant and the duration was 8 months. It is also vital to mention that the observations made were only during the construction process and no official data is available previous to the construction processes. These two projects were unique in a sense that both were financed by international funds where financial sources were attached to a more effective management. The contract documents were more complete than the local ones. Both projects had a similar contract form according to the FIDIC standards and the language used for the contracts was in English.

The companies in these projects represent 75% of the total construction firms that has a job order contract with the city for two years to built small capacity infrastructure jobs. Both companies in both cases were relatively small family owned construction firms and had no formal organizational structures. At the time of the studies, the company in the *Case Study 1*, which undertook the sewer line construction, had only one full time civil engineering student and had 25 labors employed within

the company. Only one of the labors was classified as a foreman. The management was consisted of family members that owned the company which none of them had proper education or certification; however had twenty years of experience in construction mostly in asphalt works. The company was the General Contractor for the project.

The company involved in the *Case Study 2* had 36 full time labors, one full time architect and a part time civil engineering student. Two of the labors were considered foreman and the management was the owner of the company which also had no proper education and certification, but had 27 years of experience in construction, mostly in water and sewer line construction. The company was a sub-contractor on the project which undertook all the civil and piping works for the project.

The research strategy adapted for these case studies, through daily observations<sup>1</sup>, was to explore and highlight the problems associated with know-how and technical skill levels of the project management and any measures the companies were undertaking to improve their companies' skills and knowledge during the construction phase of these two projects. The main findings of the case studies are presented below in three parts. Firstly, identifying the project management methods used, secondly the technical skills levels and know-how of the personnel and thirdly the overall problems associated with the infrastructure construction companies.

## 2.1 Project Management

*Case Study 1:* In the first case study, the management, assumed the role of a project manager and had sole control of technical, scheduling and financial elements. The contract documents were all in English and none of the management had knowledge of English, therefore not very clear on requirements for the project. Consequently, the project was built without any care to particular conditions of the project. The technical staff selected for the project was a very young engineering student with very little experience. The foreman for the job was skilled but he was not scheduled for the project full time. Neither the management nor its technical personnel had knowledge of any scheduling or financial tools. The lack of understanding of the project was so serious to a point that the control engineer of the client had to point out the steps to be taken for proper completion of the project and repeat work was very common. Communications between the management and his staff and with the client was antagonistic and no written communications was used. Interaction with the authorities for the other services like electricity and telephone was not on timely manner. Majority of the time the engineer was on site with no support or direction from the upper management and assumed no responsibility for the project. Proper recording of data was also not observed.

*Case Study 2:* In the second case study, the contractor acted as a sub-contractor where the General Contractor for the project was a foreign origin. This was the first time that the sub-contractor had ever been involved in this type of a project. The General Contractor only had one full time personnel on the job site as a control engineer and the subcontractor had full responsibility of all the civil works and piping jobs except for instrumentation. All the documentation and communications for the project was in English. Like in the first case study, the owner for the sub-contracting firm assumed the role of the project management, however hired a consultant engineer with experience for interpretations of contract documents, communications and scheduling purposes. No other technical staff was on site full time but was brought in for helping as needed. Nevertheless, the management had sole control of staffing, financial and delivery schedules and had very little trust in his staff and did not delegate responsibility. The staff was not up to date with the project and had no confidence to a point that they could not communicate with the management; therefore did not want to assume any responsibility even for small tasks. The management's technical staff changed three times throughout the course of the project. Each fired technical staff was replaced with a new staff of same attributes. The relationship between the general contractor and the subcontractor was always tense since the subcontractor did not want to acknowledge control and instead of paying attention to the schedule chose to build the project at his own pace. Communication and documentation of the changes during

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<sup>1</sup> The author's observations were based on day to day trips to the project sites and the author used her own experiences in project management to evaluate the behaviors and activities during the process.

the construction was not sincerely acknowledged by the subcontractor and at the end cost the subcontractor severely. The civil and piping works for the project completed six months after the scheduled date.

## 2.2 Technical Staff

*Case 1 and Case 2:* Both case studies had very similar issues with the technical staff. The technical staff hired for both projects in the case studies was very young engineering students that lacked experience therefore confidence. Their technical skills did not go beyond reading the line drawings for the pipeline and directing some of the field work. The staff also did not have knowledge of English, therefore did not understand the projects conditions properly. With the little direction that the staff received from the management, the technical staff was under constant stress of wrong doing and could not become part of the team. The management, on the other hand, was not aware of the skill levels of the technical staff he hired and expected that the technical staff acquired the knowledge the projects required. The environments on both projects did not allow the technical staff to learn more techniques like scheduling, estimating, data recording and etc. since there was no leadership from the management to teach or advance his personnel. On the other hand, the technical staff did not attempt to get themselves more involved and was usually absent on site.

## 2.3 Observed Problems in Both Case Studies

In case studies, prominent planning, staffing and scheduling problems were observed. The lack of skills in modern management methods caused severe damage to the schedule and the projects was not completed on time and damage to the environment caused severe stress to the community. More importantly, when asked, the idea of project management with an organized structure was not considered to be developed anytime soon because of its financial burdens. Amongst organizations that deliver their businesses by means of project, there is a need to provide suitable project managers to execute the work (Shepherd, 2005). However, in these cases, it was found out that the management (the owners of the companies) by culture cannot put their trust in their employees when it comes to control financial, schedule, procurement and staffing issues. The management was very experienced in their know-how of how to do the job, however, this know-how was not reflected in their management skills, and management simply focused on quantitative goals rather than the quality of services provided. This observation supports that management lacks support to its team for fear of weakening its strong hold how projects should run (Nguyen, 2007).

Nguyen (2007) stressed out negative issues of significant importance in project management in developing countries which are very similar in nature with what had been experienced in the case studies herein:

- Frequent contradiction in terms of project's planned completion dates and existing available capabilities, resulting in unrealistic project plans and scheduled completion forecasts
- Lack of team work concept due to individual team member's momentary interests and ambitions
- Ineffective and inefficient management of staff
- Rigid vertical organizational structures and staff assignment unsuitable for a market economy
- Poor project control implementation
- Low level of professional training in project management from institutions of higher learning- *in these cases non existing*
- Current methodologies for managing projects are useless for effective, efficient and practical application
- Lack of active exchanges of ideas pertaining to project management training concepts and methodologies

While there are many factors that contribute to the poor performance in the industry the most significant problem is lack of effective, modern project management training for project managers,

staff and professionals responsible for preparing and managing these projects (Nguyen, 2007). It is expected that project management procedures might be different in different cultures (Zwikael, *et al.*, 2005); however in these cases there was no proper management and very little importance was given to the overall success of the projects.

### 3. Overcoming the Problems Observed

The client for both case studies was the same, and highlighted that this is an ongoing problem with most of the infrastructure projects the client is involved. The client also mentioned that the project management of locally funded projects was worse. Even though the funding of the projects observed here were foreign and there was more strict control, the attitude of the project management involved in these case studies was not much affected. Consequently, the trust and the image of the contractors in the local infrastructure sector are diminishing and the client is worried that unless the companies advances themselves in management and technical skills, the local infrastructure companies will continue their management approaches of public projects which may result in serious environmental and cost issues. Especially with more complicated projects scheduled for the near future and with the possibility of becoming a full EU member, it is urgent that the infrastructure companies adapt project management methods. Dearth of modern project management principles should be acknowledged and a form of existing training and certifications programs should be adapted to help to accelerate the process. This improvement could be achieved with a structured training program supported by the government. However, before the training is undertaken, the companies have to be willing to undergo training and the training program to be supported nationally.

### 4. Conclusion

There is an urgent need to improve project management operations in construction in northern Cyprus, in all aspects, since its economy is becoming more global and more EU and foreign funding is on its way for more complex infrastructure projects. If the local construction industry does not want to loose confidence from the donors of the funding caused by the poor quality of implementation of development projects which often faces delays and cost overruns, it has to change its practice methods. Infrastructure companies in north Cyprus may be in different stage of project management maturity however lacks a common aspiration to improve the management of their projects and above all, it has to recognize high quality management tool applications necessity for its survival. Donors have to focus on long-term institutional development and technical assistance rather than on the immediate feasibility of projects (Ngowi, 2002).

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