

INTERNATIONAL PROJECT MANAGEMENT OF SUZHOU SCIENCE AND CULTURAL ART CENTRE AND SUZHOU INTERNATIONAL EXPO CENTRE

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Abstract

This paper shares our project management experience in the 2 large-scale projects in managing a diverse international project team of consultants and managing in a foreign land. The first part introduces the two projects, second part addresses management of the projects and the last portion presents some of the challenges we experienced and highlights the importance of understanding the peculiarities of the operating environment, their norms, cultures, effectiveness and limitations of conventional project management tools while operating in a foreign country.

1 Introduction

Since opening its door in the late 70s and early 80s, China has been experiencing a steady rapid economic growth leading to recent years. The booming construction industry, especially in the richer regions of the country (Shanghai, Beijing, Guangzhou and Shenzhen etc), has led to these cities attracting international construction consultant firms to assist them in their infrastructure developments. The trend started with the appointment of well-known international architects to bring in new design ideas, concepts, latest construction technology and building materials. As China became more affluent, it also began to embark on more sophisticated and complicated projects in an effort to level up with other major cities in the world.

Suzhou has also experienced a fast and continuous economic growth for several years. In 2003, Suzhou was ranked first nationwide in Newly-Introduced Registered Foreign Capital and Paid-In Foreign Investment and its GDP was ranked 5th nationwide. In its efforts to be a city of international status, the Suzhou local government decided that two prominent projects, namely the Suzhou Science and Cultural Arts Centre and Suzhou International Exposition Center would be developed to world class standard. International consultant

teams were formed. Suzhou-PM Link Pte Ltd (a subsidiary of PM Link Pte Ltd, Singapore) was engaged to provide international project management for these two projects.

The coming together of international consultants and the local expert practitioners in the project teams for the two projects created situations of language and cultural differences. Such differences created challenges to project management.

2 Project Introduction

As part of the Master Plan of the Suzhou Industrial Park, the Suzhou Science and Cultural Arts Centre (苏州科技文化艺术中心 SSCAC) and Suzhou International EXPO Centre (苏州国际博览中心 SIEC) are two prominent developments to be built in close proximity to each other by the Jinji Lake 金鸡湖. The regions along the Jinji Lake are to be developed into a world-class residential, commercial, social and entertainment belt.

2.1 Suzhou Science and Cultural Arts Centre (SSCAC)

When completed, the SSCAC would become an important science and technology based tourist attraction and a centre for the performing arts within the Arts and Entertainment Village Development Zone of Suzhou Industrial Park.

SSCAC will have a 1200-seater Grand Theatre, a 500-seater Dining and Performance Hall, a Science and Technological Centre, a Cineplex (comprises of an IMAX cinema, 2 numbers of 300 seats cinema, 4 numbers of 150 seat cinema and a VIP cinema) and commercial areas. The development occupies a site area of 150,000 sqm with GFA of 140,000 sqm and development cost of RMB 1.89 billion (USD236million).

The project client is Suzhou Science & Cultural Arts Centre Co., Ltd (a subsidiary of China-Singapore Suzhou Industrial Park Land Co. Ltd), its concept design was by Paul Andreu of France and design development by East China Architectural Design & Research Institute Co., Ltd. The project consultant team also includes foreign specialist consultants for facade, theatre stage engineering, acoustic, internal design works, sound and lighting engineering etc.

The project is currently in good progress, structural works as well as facade had been completed. Completion works are in their final stages and target to commence operation by 1st October 2007.

2.2 Suzhou International EXPO Centre

SIEC will be the second largest Expo Centre in China when fully developed. It covers an impressive expanse of 326,000 sqm - more than three times the size of the Singapore Expo.

Costing RMB 2.2 billion (USD275million) to build, it consists of a series of five interconnected halls radiating in a fan-shaped structure fronting the lake. The buildings house approximately 120,000 sqm of exhibition space, 30,000 sqm of entry and pre-function spaces, 65,000 sqm of basement car parks and an additional 80,000 sqm for miscellaneous support functions and food services.

The first phase of the project was developed by the Genway Housing Development Group Co., Ltd. The project was designed by the famous American Architect Skidmore, Owings & Merrill LLP (SOM), The detailed design was collaborated with the local Suzhou Institute of Architectural Design Co., Ltd.

We successfully delivered the first phase of the project of GFA 180,000 sqm within client's requirements in Oct 2004.

3 MANAGING THE SSCAC AND SIEC

Our project management and responsibilities for our two Chinese projects cover tenders management, design management, construction management, construction strategies, alternative proposals and recommendations. We also represent the client in the control of quality in construction works, site safety, site management, site progress as well as cost and documentation control.

Both projects called for a dedicated team station full time for a period of two to three years. The SZPM Link project team has a Project Director leading a group of ten to fifteen project managers (depending on the phase of the projects).

Our Singapore systems of project management were implemented with project management tools such as Project Execution Plan (PEP). The PEP was the starting point for effective management of the project as it provided the various participants with cooperative directions on all aspects for the project. It clearly defined the project and laid down all necessary activities, information, rules and guidelines to complete the intent of the project within the boundaries and restrictions of the project circumstances, characteristics and requirements. It also established the development processes, communication means, the information flow, the authority for approvals and the reporting system within the project organisation. Customization to processes was made to bring in local regulations and established systems and practices in China.

The following will discuss how we partner with our clients, the consultants and contractors (in short; the 3Cs).

3.1 Partnering Our Clients

The project developers are two of the largest government-link developers in Suzhou Industrial Park. Both were under heavy political pressure to complete the projects within time, budget, and obtained national construction excellence awards for the two projects

The construction duration of SIEC was only 360 days during which detailed design, tender preparation, calling and award, material procurement, steel fabrication, delivery and construction of 180,000 sqm had to be implemented.

The construction of SSCAC kicked off on 14 March 05. The first performance in the grand theatre was set for 01 October 07, leaving only 30 months for the implementation. In comparison, a similar development of the Esplanade Theatres by the Bay in Singapore had 80 months implementation time frame.

It was obvious that the major concern and pressure felt by the clients was how to deliver the projects under short implementation duration. In partnering them to achieve the intended targets, we were able to demonstrate, by scheduling and optimizing work hours and resources, that the fast progress was achievable. We kept the clients constantly updated of the latest through weekly, monthly and even daily reports. Through these and many other measures, we won the trust and confident of the clients.

The team also assisted the clients by using value engineering to review workflow and construction methods submitted by the contractors to optimize precious time and cost. One example of such recommendations was the temporary soil retaining system of SSCAC project. The original design was a continuous bored piles retaining wall. However, PM team convinced the client to call for a Design and Build contract which adopted soil nailing with deep walls dewatering system. This helped cut down the construction time by a month and saved the client RMB 15 million in costs.

Our recommendations on the tender processes were also well received by the client. Stringent selections of specialist consultants, pre-qualification of contractors and suppliers were some of those procurement practices implemented successfully.

Communication with the clients was another important aspect of works. Chinese puts a lot of emphasis on 关系, relationship that is, once they trust that you will able to perform and share their concerns, the process of working together with the client would not be an uphill task anymore.

3.2 Partnering the Designers and Supervision Unit

In Singapore and other countries, it is normal for the design consultants to continue to develop their concept design into working details and drawings for tenders and the client would engage resident site staff – architects and engineers and clerks-of-works to carry out supervision of the construction works of the contractors. However, in China the practice is different. By statute, the development of concept design into working details must be

carried out by licensed companies, called Design Institutes (DIs). They are the only ones authorized to do the development of details and the statutory authorities only accept drawings that are done by these DIs. In site supervision, the developer client has to engage an independent supervising agent company, called Supervision Unit (SU) 监理单位, to carry out the supervision of the contractors' works on site.

Consultants in DIs in China are very specialized, for example, the design of plumbing and sanitary, HCMV, fire engineering, electrical and building automation are done by different and separate M&E engineers. Great deal of effort and patience was required to coordinate their respective designs. Control measures such as deadlines and penalties were imposed in our projects on DIs to ensure timely issuance of drawings. Their fee claims were verified by us before payment. This gave us some authority over their performance.

Unlike Singapore, counter-proposals or alternatives by the contractor's PE are not practiced in China, this gives the design institute ultimate power on design matters. At times, in order to enhance the design, a panel of expert will evaluate on specialized design items such as structural steel, facade, stage equipments, temporary soil retaining structure etc.

Designers for the projects came from all over the place. For SIEC, SOM, the principal consultant is based in Chicago, America. In the case of SSCAC project, foreign consultant teams includes façade (Australia), theatre stage engineering (England), internal design works specialists (Singapore), etc. Coordination among foreign project team members required much detailed planning.

Construction project management carried out by SUs was made compulsory in China in 1988. Their role is well defined by the codes and regulations which put them as an independent party in-charge of construction site progress, quality, safety and cost control. The appointment of supervision unit is through tender process where price tends to be the sole intention of selection. Due to commercial reasons, it is a common sight on site that most personnel from supervision unit now are either fresh graduates or retired engineers without much experience in project management.

We noted from the start that there would be duplication in roles and responsibilities between the PM and the SU. Their scope of services was clearly defined to avoid misunderstanding. The client's decision to identify us as part of client's team, helped to make it clear to all parties that we are not just another layer of authority.

It was fortunate that we were working together with the same supervision unit company for both projects and we were able to strike a good rapport. After the initial phase of merging PM Link's system of project management together with their quality plan and China's standard forms, we managed to successfully set up procedures, flowcharts and system of construction management. The supervision unit was especially helpful in giving us useful advice on China's codes and regulations on construction.

3.3 Partnering the Contractors

Our style of managing the contractors was based on both contractual and rapport. Comparing to other projects that we had handled in Singapore, there was a huge difference in the contractor's depth of comprehending and executing contractual obligations. The situation was made worse as the contractors had little experience in dealing with international contracts. They were caught off guard by our stringent requirements in executing the client's rights as compared with their common practice of negotiating with the clients along the way. During construction, numerous meetings with the contractors had to be carried out to address their difficulties and concern.

For the SSCAC project, contractor's final account will be based on a third party evaluation; for certain variations that involved high cost, some contractors will no doubt be hesitant in moving ahead to execute the additional works, we had to convince the client to carry out the third party evaluation for particular huge variation items first to establish and fix the variation sum to avoid work delay.

We had to put substantial pressure on the contractors to ensure timely delivery of the projects. Constant progress monitoring in accordance to the master program and construction program was carried out. Warning letters had to be issued to the relevant contractors and even up to their company's senior management when progress on site was critically not on track. Although the main contractors were supposed to coordinate works on site, numerous working sessions had to be initiated and led by us to work on issues and disputes between contractors.

Due to the great number of direct contractors, nominated contractors and suppliers involved in both projects, action taken by a particular contractor sometimes would affect the others; we had to constantly balance the overall status of the project and took appropriate measures to ensure smooth progress of work.

Contractors and suppliers for both projects came from all over China. In a big country like China, the large geographical distance was a concern. Time needed for site visits or factory inspections had to be carefully planned; these were usually scheduled on weekends in order not to affect our normal work.

4 THE CHALLENGES

It was quite an uphill task running projects away from the familiar home ground, the challenges are multi-faceted: cultural issues, projects complexity and the numerous parties involved in the projects to name a few. It took much perseverance, optimism and discipline to face the challenges and handle them to the best of our abilities. We came to understand the importance of comprehending the peculiarity of an operating environment, their norms

and cultures. The effectiveness and limitations of conventional project management tools while operating in another environment cannot be undermined during the running of these two projects.

Making project delivery process more effective and efficient in the international teams for design and construction for the two projects was indeed a challenge. We had to deal with team members of diverse cultural backgrounds which included ethnical/cultural, religion, tradition and experiential differences. We also needed to manage consultants and contractors that use different codes, norms and practices, and face the local authorities with different administrative framework and working principles, among other things.

Both projects are typical 三边工程 whereby design, procurement and construction were done concurrently. This called for a high level of coordination among all team players to ensure the smooth running of the projects. The short time frame of the projects put immense pressure on timely delivery; this inevitably had adverse effect on the cost and quality aspects of the project. It was then up to the team on how to deliver the projects on time while balancing the cost and quality of the projects.

4.1 Payment Schedule

In administering progress payment to the contractors, the client decided to keep with Suzhou Industrial Park Administrating Committee's recommendation of progress payment of 68% for contract works and 50% payment for all variations works. Payment time was up to 70 days upon work done unlike Singapore where progress payment is from 90 to 95% of the value of work done and payment time of 21 to 31 days upon invoice date. We had to inform all companies during the pre-qualification stage about the payment terms and requested them for certification to confirm they were agreeable to the payment terms prior to acceptance of the companies to participate in the tender. China's construction is on a boom and thus suppliers of building materials do not want to offer credit terms and at times it was cash upfront. This brought about much financial burden on the contractors. China's recent banking laws also made applications of commercial loans process lengthy and tedious. For the SSCAC project, main contractor had to fork out RMB 80 million and facade contractor RMB 50 million to self finance their portion of construction.

Despite our cautions to the contractors during tender stage, problems still surfaced with certain contractors no longer able to self finance their works and this undoubtedly caused delay on site. Depending on the nature and creditability of each case, we had to assess the situation and recommend to the client requesting them for pre-payment and at times acceleration of payment (with interest) to lighten the contractor's financial burdens.

4.2 Managing the Contracts

FIDIC form of contract was used for both projects to commensurate with the world-class standard expectation of the projects. Being well versed in an international format contract,

we were able to value-add on the contractual matters as well as in the day to day implementation of contractual requirements.

Both projects were on tight schedule and we had to weigh the intended progress of the project with the risk of cost going beyond budget. At times it was difficult to call for a complete bill of quantities contract when a full set of construction drawings were not available. This problem was especially severe for SIEC as most tenders including big ones such as external facade and roofing system were based on schematic drawings with a lot of provisions to address uncertainties in order to minimize variations.

For the SSCAC project, in order to tie in structural works after foundation and retaining works, main contract was called even though the upper storey of the buildings were not fully designed at that time. The strategy we adopted was for a lump sum pricing for all basement works and bill of quantities with fixed unit rates for upper storey. Final accounts would be computed based on construction drawings and actual work done. Areas of works that were yet with any design drawings were captured in the provisional sum items; this was adopted for such as the construction of light rails link-way and external works.

Unlike Singapore, tender packages are preferred to be elementally split in China. For both developments, the numbers of contracts that we called were enormous, for SIEC there were altogether 25 tenders that includes the main contract, facade, roofing, ID, and many M&E packages that were called in quick succession. We introduced a schedule of roles and responsibilities in all contracts that clearly defined their respective work-scope to avoid misunderstanding and disputes during the construction stages. This schedule was also to be internally beneficial as we were able to pick up potential areas of conflict prior to construction and also ensured that there were no double provisions for the same item in different contract packages.

Much attention was given to the method of evaluation of tenders and we did not encourage the client to award any contract based solely on the lowest tender price. Dedicated tender evaluation criteria and method had to be worked out for every tender and would usually consist of a 50% component each for commercial and technical aspect of the tenderers submission. For tenders with heavy technical contents such as M&E equipment and stage equipment, the commercial aspect had an even lower percentage component than the technical aspect. At times we had to recommend to the client to bring in foreign experts for the technical evaluation in order to enhance independence and increase the transparency of the evaluation.

We did not encourage contractors to submit overdue variation claims as we would then have problem tracking the financial status and there would be increased risk of potential disputes at the later stages. During the process of construction, regular variation meetings were initiated by us to clear cost issues and design changes by the design institute must be formally requested in a prescribed form in order for us to give the client a cost and time estimation of the intended changes as well as getting their approval.

4.3 Managing Communication: the Flow of Information and Instructions

There were many parties involved in both projects that required our special effort in managing the flow of information in the form of documents and drawings. Due to the fact that there were many foreign consultants and suppliers involved, we relied heavily on IT, teleconferencing were scheduled at regular intervals to work out planning and design issues. A FTP site was also set up for the sharing and transferring of large capacity drawings and design information. This was supplemented by emails for the day to day running of the project. All these were put in place in addition to the conventional site meetings. Visits at critical points were also planned for all parties to come together to resolve design and site issues timely to ensure smooth running of the project. All these were carried out with special consideration of time differences in different countries.

China itself is a vast country; at times certain urgent issues cannot be addressed right away. Some parties involved were not based on site and the management of documents must be handled with utmost consideration. Issues at hand had to be forwarded by email or fax to the parties for their immediate attention and important issues to be clarified in specially arranged meeting either on or off site or even via teleconferencing.

4.4 Managing Project Team with Different Background

Being involved in the ‘global’ projects means that we had to deal with international organizations and people. Each brought with them different cultural background, languages, practices, norms, etc. This resulted in different perspectives on how things were to be done. In the SSCAC project, some overseas consultants were operating in China for the first time. They did not have the understanding that remitting their payments over to their respective countries would be a lengthy process due to China’s currency control policy. At times, we were faced with situations when these consultants were not issuing drawings or documents until they were paid. We would often serve as an intermediary between the different parties to help them understand the situation.

While handling the projects with international players, we had to face a multitude of cultural divides and the impact of such diversity should not be under-estimated in this day to day running of the project. We had to equip ourselves with much understanding, diplomacy and patience in order to balance the competing demands of all team members in the project. The demands and intensity of interaction in the course of the project work can generate tremendous tension, if not well-handled. SZPML’s role is to facilitate decision making and to always strive for a win-win situation for the projects and parties involved.

4.5 Managing Team Members Who Practice Different Norms and Approaches

Varying norms and practices are the sources of contention if they were not checked and explained thoroughly. The specification in tender documents is an important step to make

sure the contractor fully understood the scope of works, preferences in term of norms and practices. The contractor will, however, want to adopt the method of construction that he is used to in order to maximize his returns but this may be contradictory to the method the consultants have specified. We had to see things on a higher plane and be resourceful enough to mediate and resolve site problems in consultation with the project team. For example, during the construction of external facade for the SSCAC project, the consultant had required a full panel to be assembled in the yard but after considering the practicality of this approach and without affecting the quality of finishing of the façade, we supported the contractor's method statement of having an assembly comprising of small modules.

In Singapore, projects consultants and contractors relied heavily on technology to get things done. However, during the development of the projects in China, the contractors were not prepared or equipped to handle some of such capabilities. Labour is aplenty and the costs are still comparatively very low in China and thus the contractors are more inclined to their own ways of getting things done. It is then up to us to assess the situation and to make the necessary decisions. For example, we were exploring the options of pre-cast structural components in order to cut down construction time but after understanding that the local market does not have the capabilities or the expertise, we had to drop the idea and kept to the more labour intensive method.

Unlike in Singapore, where the overall construction works were handled by the main contractor, the main contractor in China mainly carries the civil and structural works. The coordination with nominated sub-contractors for both of our projects was inefficiently handled by the main contractor. We had thus co-ordinated and monitored the whole service and supply chain closely.

4.6 Impact of Climatic Conditions and Festive Seasons

While we are accustomed to managing projects in tropical climates, we had to learn how to operate in a country with four distinct seasons in the temperate climate of Suzhou. The elements of nature cannot be under estimated during the planning of the projects. Consideration must be given during the planning stage to best fit the different seasonal characteristics and sufficient float in the master program must be catered for unexpected extreme weather conditions.

Every milestone in the projects was closely monitored to ensure that there would be minimum disruption brought about by the festive seasons. Not only would the construction workers go back to their hometown, suppliers and fabrication plants would also cease to operate during these periods. During Chinese New Year in China, work on site would basically come to a halt for three to four weeks. In the planning of the master program, phases of works completion had to be tied to the start of the festive sessions, for example in the SSCAC project, structural topping out and completion of facade were both targeted to complete before the Chinese New Year.

5 CONCLUSION

It has indeed been a challenging, but very enriching, journey for us to project manage the SSCAC and SIEC projects in Suzhou. Not only were we able to apply our tested methods of project management, we were also able to leverage on our experience to adapt our PM processes to new situations like managing international consultants and foreign project members/organizations. We learnt to be flexible and adaptable to customize our procedures to fit the foreign context while maintaining the main tenet of our project management system.

We learnt how to partner multi-national teams from different parts of the world and communicate and coordinate cross-culturally, cross-distance and cross-time zones. These two projects have provided us the opportunity to exercise our ability in handling personal relationships between parties from disparate background and experience to work together. It is the trust and respect, won through mutual respect of each other's technical competencies, integrity and humility, instead of the use of force or contractual compulsion. This helped encourage the various parties to go the extra mile to work with us to achieve the projects' objectives.

In managing projects in a foreign land, we encountered different practice regime – both codes and contracts, different cultural and climatic conditions that required variation to our method and approach and of course added attention and effort. We continue to learn to bridge or overcome these differences and help to influence and add value to the construction practice landscape of Suzhou and its neighbouring region.

In this day and age, we cannot afford to be limited to our shore in our project management services. The current development and trend around the globe compel us to look out and participate in the international arena. We need to manage an array of new elements that is brought about by the inclusion of international consultants' involvement in large and complex projects and also by managing projects and operating in a foreign land. We are faced with new challenges all the time, and we no longer can stick to one or few methods used locally. We need to adapt and reinvent.