

CHAPTER 5

CASE STUDY 2 - THE HOSPITAL PROJECT

5.1 SITUATION ANALYSIS OF THE HOSPITAL PROJECT

The Hospital Project was a small project involving the construction of a 250 bed private hospital including nursing facilities, outpatient suites, operating theatres, etc.. XYZ Company was appointed as the project management consultant to manage the project from inception through to successful commissioning and hand over.

5.1.1 Project Visualisation Phase

Similar to the Airport Project, the appointment of the project manager on this project was made early in the project visualisation stage. However a hospital planning consultant was appointed prior to the project manager to plan the hospital layout and the requirements. The project manager was responsible for ensuring that the client's vision of the project was translated into reality through the proper planning of the hospital layout, the design and construction of the project.

When XYZ Company was contracted, the company appointed Mr. Rajoo as the project manager for this project. Mr. Rajoo, a Malaysian who has been an employee of XYZ Company for almost ten years, was highly experienced in project management, but this was the first hospital project for him.

Mr. Rajoo's immediate task in the project visualisation phase was to help the client focus on the project missions, both in the design aspect as well as other aspects of the project such as duration, budget etc..

When Mr. Rajoo was appointed in this project, the hospital planner had already done the planning of the conceptual layout of the hospital way ahead. The hospital planner had been in liaison with the client to determine the project mission as far as the hospital design is concerned. Since the client had already defined the conceptual design requirements to the hospital planner, Mr. Rajoo did not pursue the matter with the Client. Instead he took the information provided by the hospital planner and obtained the client's confirmation.

Mr. Rajoo advised the client that a fair duration of 3 years would be appropriate for the design, construction, testing, commissioning and hand over of a 250-bed hospital with the facilities that the hospital planner recommended. This duration however, does not include the fitout of the hospital. Nevertheless, the client could not decide on the duration because the target completion was dependant on the target completion of a competitor's proposed private hospital in the vicinity. In the end, the project mission did not include the duration for the project. The client advised that it had set aside a budget of RM 100million for the project which includes the cost of fitting out the hospital. The final definition of the project mission was to construct and fitout a 250 bed hospital consisting of a 6-storey nursing tower and a 4 storey outpatient block within a budget of RM 100 million.

The next task for Mr. Rajoo was to document a project brief. The project brief for the Hospital Project was developed by Mr. Rajoo with design input from the hospital planner. The project brief was required to formalise the current objectives and strategies in order to achieve the project's mission, to be submitted to the client for approval. The following were the content of the design brief;

- conceptual designs by the hospital planner,
- schedules of accommodation,
- a list of consultants required to carry out the detailed design, obtain approvals, procure contract packages, manage the cost consisting of an architect, a civil and structural engineer, a mechanical and electrical engineer, a quantity surveyor, a landscape architect, and an interior designer.
- because it was a small project, the implementation strategy was simple and in accordance to the project life-cycle. There was no division of work and the project was treated as a whole. Therefore the project management staff was kept to the minimum.
- an initial estimated budget of RM 100 million including RM 30 million for the fitout.
- a bar chart of an initial project implementation programme, which was divided into; design, procurement, construction, testing and commissioning, hand over and fitout phases. This was included in the design brief although the mission for the duration of the project was not established.

5.1.2 Project Design Phase

The design phase involved four main tasks for Mr. Rajoo, feasibility study of the design brief, organising the project; planning the project implementation programme; and managing the design process.

Feasibility Study Of The Design Brief

An environmental and resource analysis was carried out to identify the current strengths, weaknesses, opportunities and threats of the Hospital Project to determine buildability, possibility of obtaining authority approvals, land encumbrances, duration, resources etc.. From the gap analysis it was found that the design brief was feasible and no amendments were required.

This project was being constructed during the economic recovery from the recession of the eighties. This resulted in the client obtaining very competitive tender prices. The small-scale nature of the project made sourcing resources for the project easy.

The design brief was submitted to the Client for approval but the client took a very long time to approve the design brief. Finally after a delay of approximately nine months, the approval was given with some major changes involving the project mission.

The budget was reduced to RM 80 million and it was decided that one level of the nursing tower consisting of 80 beds was only to be constructed up to shell and core, with services terminating in the vertical risers.

The target completion date of the project was fixed at 1992, thus leaving a remaining duration of only 2 years. This included the fitout and commissioning of the hospital which was estimated to take approximately 3 months. It was an unrealistic target but the client insisted that Mr. Rajoo work towards this target.

In view of the above decisions by the client, Mr. Rajoo amended the design brief accordingly, and reconsidered the project implementation programme.

Organising The Project

In view of the accelerated programme, the consultants and the other project team members were appointed on an urgent basis. Mr. Rajoo listed all the tasks involved for the management of this project and then grouped the tasks into positions. The following tasks were listed;

- project management
- design management
- cost management
- procurement
- scheduling
- construction & quality management
- fitout management
- hospital commissioning

Since the project was small, the tasks of project management, design management, cost management, and procurement were grouped together to be carried out by a project manager and an assistant project manager. The scheduling was to be carried out by a part time scheduler. The construction and quality management task was to be carried out by the client's team of three (3) construction management staff. The fitout management was to be carried out by the client's fitout manager and finally the hospital commissioning was to be carried out by a commissioning consultant.

The project organisational structure was kept simple in a functional format. Please refer to Figure 5.1. The hospital commissioning was not part of the project team organisation structure, but fitout was included because it required coordination and monitoring by the project manager.

Mr. Rajoo was fortunate that the scale of the project only required two other project management staff apart from himself, an assistant project manager and a part time scheduler to be appointed. A resource analysis was carried out to fill the positions. Although ordinarily it would have meant a major problem to staff a project team within a short notice, it was not the case on this project. XYZ Company had these people ready to be seconded to this project. The client was able to second the construction management staff immediately. The appointment of consultants was also carried out fairly quickly because XYZ Company had previous experience with these consultants on other projects.

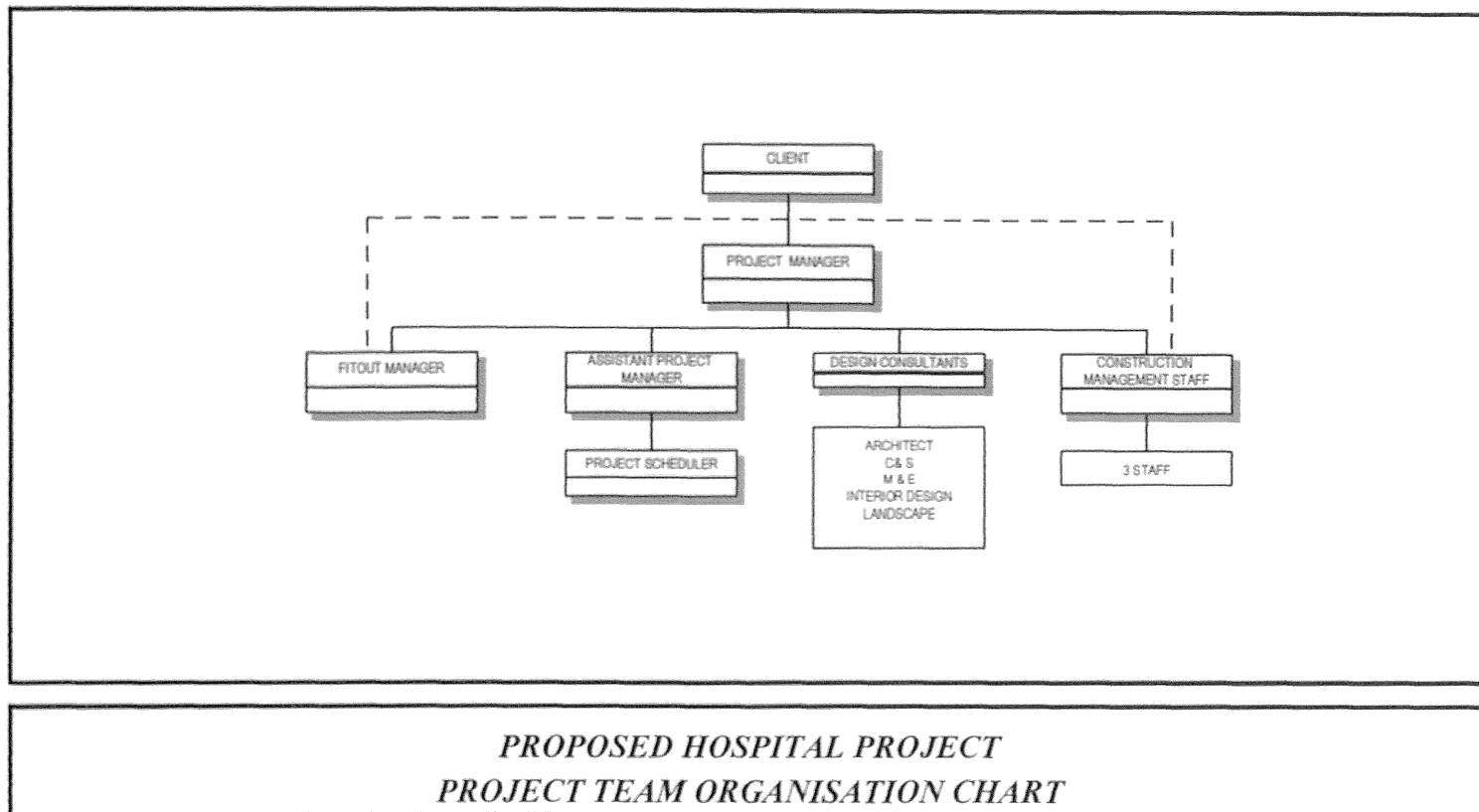


FIGURE 5.1

Mr. Rajoo did not prepare a project procedures manual because the scale of the project was small and the number of project team members was limited. However, Mr. Rajoo practised a high relationship leadership style and participative decision making with his team members. He held weekly meetings with the team and encouraged members to raise questions and throw out ideas. This facilitated communication and group action in the functional organisation structure.

Planning The Project Implementation Programme

Since the client drastically reduced the project duration, the design of the project implementation programme was carried out carefully to ensure that as many activities as possible were carried out concurrently. This was carried out by listing all the activities in the project, allocating a realistic time frame for each activity, relating the activities and determining preceding, ensuing, concurrent and independent activities in a logical manner. Following this a critical path, which dictates the overall duration of the project, was determined. (An example of a typical implementation programme using the critical path method is shown in Appendix 1.)

Managing The Design Process

After completing the project brief, organising the project team, and planning the project programme, the project design process was implemented on an accelerated fast track basis.

The design management was carried out by Mr. Rajoo and his assistant by having regular meetings with the design consultants. The coordination of the design was carried out at design coordination meetings. Progress of the design was monitored on a weekly basis against a design programme which is a sub-programme of the project implementation programme. Delays were managed by rescheduling that activities. For example the architectural design was delayed because the conceptual design on the outpatient suites was not clear. The clarifications from the hospital planner took two weeks but the delay was eliminated by rescheduling the architect's design activity so that the design of the nursing tower was completed first.

5.1.3 Project Implementation Phase

In the project implementation phase, the output from the project design phase was implemented. As the design was being completed the work was divided into various packages so that the packages could be procured. The preparation of the tender documents, calling of tenders and evaluating the tenders were jointly carried out with the quantity surveyor, design consultants and the client's construction management staff.

Recommendations for the award of tenders were made to the client. Tenders were awarded after the client had approved the recommendation. When the main building works tender was awarded, the construction management staff were made responsible for the management of the contractor's work, in accordance with the specified quality and time. Mr. Rajoo and his assistant were responsible for the overall coordination, monitoring and reporting. This was carried out by holding regular meetings with the team.

The construction management staff controlled the construction by ensuring that actual activities conform to planned activities. The quality of work was measured against the drawings and specifications, the duration against the construction programme, and the cost against bills of quantities and contract sums. There were several situations where the actual activities had deviated from the planned activities in the quality and construction programme aspects. These deviations were either not raised or addressed effectively. Sometimes they were raised at weekly site meetings with the contractor and the contractor either promised to rectify the work or put in additional resources to catch up on lost time. However, there was no action taken following the meeting and the matter was repeatedly debated in the following meetings, with no positive action. An example of this was the marble finishes in the main lobby which was laid unevenly, was not rectified and was finally accepted as finished work. Similarly the delay in completing the fire alarm system was never addressed and this resulted in the certification from the Bomba being delayed.

There were major delays which resulted from the client's instructions to change various elements of the design during construction. The contractors were even instructed to stop work until decisions were made. The client was advised of the delays and cost overrun as a result of these instructions but approvals were not granted. Instead the client negotiated extensions of time directly with the contractor. This resulted in Mr. Rajoo being unable to take the appropriate corrective action to control and monitor time and cost.

The construction was delayed beyond the contract construction programme. Since the client could not accommodate this delay, the client together with the construction management staff and the fitout manager negotiated directly with the contractor to gain access into sections of the building to commence fitout. As a result, the contractor disclaimed all responsibilities for delays and damaged work.

The construction management staff were not able to verify that the delays and poor quality work were the result of the contractor's doing. This was because Mr. Rajoo had not ensured that the construction management staff maintained sufficient documented control measures such as checklists and corrective action requests. The contractor blamed all the delay and poor quality work as a consequence of the client's interference by commencing the fitout work. As a result poor quality work and delays were accepted. One example of this is the damaged ceiling boards which were actually the consequence of badly installed ceiling hangers, but the contractor blamed the fitout contractor for walking in the ceiling space and damaging the boards. The client had to eventually accept this poor quality work and pay for the cost of rectification.

The contractor eventually completed the work behind schedule by six months, and the client had to put up with the delays, the poor quality and the additional costs of approximately RM 1.5 million to rectify some of the work.

5.1.4 Project Commissioning And Hand Over Phase

There were many problems in the project commissioning and handover phase because of the poor quality of work and interference by the fitout work. Deviations from specifications and drawings could not be legitimately identified and rejected. Some of the deviations could not be rectified and this resulted in modification of the work to accommodate the situation. For example, patches appeared on the walls in the wards as a result of painting the walls before drying. The contractor blamed this on the client's interference to expedite this work so that the fitout work could commence. As a consequence, the client had to incur an additional RM300,000.00 to cover the walls with special wall treatment that enabled the dampness to be absorbed without showing any patches like the patches that usually appeared on painted walls.

5.2 MANAGERIAL PROBLEMS

Several technical and managerial problems were encountered in the management of this project. The general management problems are discussed in this sub-section.

5.2.1 Application Of The Formal Planning Process

The formal planning process was not systematically applied in this project because of the scale of the project and also because Mr. Rajoo was not familiar with this process. There were some key problems which could be attributed to the way Mr. Rajoo managed the project.

First, in the goal formation process, Mr. Rajoo did not assist the client in focusing on the design requirements but instead relied on the hospital planner's advice that the client's requirements have been addressed. What actually happened was that the hospital planner dictated the requirements and client just approved it without considering if it was applicable to its operations. As a result, in the client only realised the deviations of the design from the client's operational requirements during construction. Hence, there were major changes during the construction stage, causing delays and increasing costs for abortive work. If Mr. Rajoo had assisted the client focus to on the design requirements, the deviations could have been identified earlier because a project manager normally reviews the design requirements with the client's operational departments.

Mr. Rajoo failed to apply the process of formalising the coordination and monitoring strategy for the project although he had identified the current objectives and strategies, which should be done in a project procedures manual. However this was not prepared for this project. Therefore, the project team members had no formal direction on the coordination and monitoring strategy except verbal instructions from Mr. Rajoo. As a consequence, the construction management staff did not have a structured and consistent method of monitoring and controlling the quality and progress of work, such as checklists, corrective action requests etc.

The whole process became uncontrollable, when the Client negotiated with the contractor to commence fitout work before the building was completed and handed over. There was no way of verifying if the delays and the poor quality work were caused by the contractor or by the client's fitout work with of the absence of sufficient control measures.

5.2.2 Project Organisation Structure

Although Mr. Rajoo had planned a simple functional organisation structure, it did not reflect a typical functional structure. This was because some of the project team members had dual accountability in the structure. It is noted from Figure 5.1, the construction management staff and the fitout manager had dual accountability, one to the project manager and another to the client. Although the accountability to the client only relates to the employment contracts that these people have with the client, in actual fact there were more direct reporting functions between these members and the client.

The consequence of dual accountability was that the client giving direct instructions to these team members, resulting in the project manager losing control of the project. An example of this was the client's instruction to the construction management staff and fitout manager to negotiate the commencement of fitout works with the contractor without referring to the project manager before hand. Therefore the project manager was unable to advise the client on the negative consequences of this arrangement and he was unable to take proactive measures to mitigate the negative impacts.

Another consequence of this dual accountability was that it encouraged the construction management team to discredit the project manager in pursuit for personal goals. This happened when the construction management staff advised the client to negotiate extensions of time directly with the contractor because the Mr. Rajoo was said to be too pessimistic in his estimates. This resulted in unrealistic durations being agreed with the contractor which incur exorbitant acceleration costs. The contractor put in the additional labour and equipment as agreed with the client but it had not helped in completing the work within the agreed time schedule. Nevertheless the client had to pay the acceleration cost because the agreed cost was not based on the contractor meeting the time but rather the additional labour and equipment that were put on the project.

5.2.3 Managing Change

Change that is recognised early in the project can be implemented more efficiently and will have less effect on time and cost. Mr. Rajoo failed to review the design with the Client prior to proceeding with the procurement exercise. This resulted in the client not being able to identify the required changes to the design earlier, and major changes costing time and money were instructed during the construction when the client made site visits.