



Sha Tin Heights Tunnel and Approaches, Hong Kong (HKSAR Government Contract No. ST 89/02)

1. Brief Description of Project

The Project is for the construction of the Sha Tin section of Route 8 trunk road which will provide a direct link between the northeast New Territories and the Airport at Chek Lap Kok. It comprises 1 km long, dual three-lane tunnels under Sha Tin Heights, a 0.6 km long dual two-lane tunnel approach road in Tai Wai, two slip road viaducts, with an approximate total length of 1 km, connecting to Che Kung Miu Road, associated noise barriers and noise enclosures, drainage, slope works and landscape works. The Contract also includes for the site formation for a toll plaza in the valley of Sha Tin Heights. The tendered sum on Contract award (15 November 2002) was HK\$1,073.8 million and completion is programmed for early 2007. This is a re-measurable contract with provision for price fluctuation, let on the basis of an Engineer's design. Main Participants are:

Client/Employer: The New Territories East Development Office of Civil Engineering and Development Department (Government of Hong Kong SAR)

Contractor: China State-China Railway Joint Venture

Designer: Maunsell Consultants Asia

Partnering John Carlisle Partnerships (SEA)

Consultant:

2. Background to the decision to introduce Partnering

Since mid 2002, the Hong Kong SAR Government has been working towards the wider adoption of Partnering arrangements for public works contracts. As part of this strategy, the New Territories East Development Office of the Territory Development Department (now known as Civil Engineering and Development Department) selected two contracts in 2002 to adopt a structured, non-binding, post-award Project Partnering approach. The Sha Tin Heights section of Route 8 is one of the two contracts selected.

The Employer initiated the Partnering process and John Carlisle Partnerships (SEA) was selected jointly by the Employer and Contractor to take on the role of Facilitator, immediately after the commencement of the contract.

3. Key Characteristics of Partnering on this Project

- the Facilitator convened a pre-workshop meeting with senior management representatives of the Client and the Contractor to develop a shared understanding of the Partnering concept, changes in culture required and to secure commitment and rapport with the key stakeholders;
- a one-day Partnering workshop was held two months after commencement of the Contract. Participants included professionals and senior management staff from the Client, main Contractor, the Engineer and his Resident Site Staff (RSS) and representatives from interfacing Government Departments;
- major outcomes of the start-up workshop included:
 - commitment from the stakeholders to the Partnering process;
 - establishment of team spirit and improved decision making process; and
 - a Partnering charter was agreed and later signed by all stakeholders as a non-legal, non-binding document but a voluntary statement of and commitment to mutual objectives, values and behaviours;
- two cascade workshops were held to assist core members of the middle management of the Contractor, subcontractors, the Engineer's office and RSS, to build up the Partnering relationship;
- A Partnering Steering Group, comprising senior management staff from the Employer, Contractor, Engineer and RSS, was formed and meetings are held every four to six weeks. Three main areas of focus were established:
 - (i) agreement of actions to promote Partnering behaviour.
 - (ii) agreement of actions to reduce waste and improve processes.
 - (iii) review of Partnering performance by monitoring of Key Performance Indicators (KPIs).

This forum has given stakeholders the opportunity to gain a better understanding of their progress as a team, to identify areas for improvement and differences in perception on project progress and problems and to agree actions on critical issues. The Steering Group is responsible for scoring the extent to which mutual objectives, values and behaviours are being achieved. Average scorings so far have been on the good side. a half-day review workshop held one year after the commencement of the contract to reinforce Partnering performance and relationship building;

- a half-day training course on leadership was held in February 2004 for all professional and senior management staff of the Employer who are involved in the Partnering process. The objective was to provide a vision of the attributes, management and influencing skills to be exhibited by the leaders of organizations going through cultural change in a Partnering relationship;
- social events have been organized to help relationship and team building, e.g. dragon boat race, football matches and barbeques; and
- The Chief Resident Engineer and the two Senior Resident Engineers meet with the three Section Managers of the Contractor's team weekly at action tracking meetings. All are free to exchange concerns and opinions frankly so as to facilitate early identification and resolution of problems that may hinder the progress of the project and cause waste.

4. Partnering Highlights

One difficulty faced in the early stages of the project was that both Client and Contractor tended to treat each other as contracting parties in a conventional arrangement, even though both had signed the charter. As a result, it was difficult to recognize many benefits in the early stages and the process of identifying and solving problems together was initially slow. Another difficulty faced was that sometimes, other government departments, who play a key role in reviewing and accepting value engineering proposals may not show the same degree of enthusiasm as the Partnering entities. After 21 months however, there are now signs that significant benefits may be gained, these include:

- fewer claims when compared with other contracts of similar nature, and dealt with more quickly – so far, only 33 claims with 12 resolved already, a typical contract of this nature might have generated 100 claims by this stage;
- an amicable working environment for all stakeholders through team building and trust rather than by confrontation;
- speedier decision making with defined issue resolution strategies;
- meeting the mutual objectives as agreed in the Charter by co-operation;
- developing a co-operative culture; and
- reducing unnecessary paperwork.

Experience on this and other projects shows that building trust between the two contracting parties is essential to the success of Partnering. More importantly, in order for the benefits to materialize earlier, this must be achieved quickly, and if possible, involve all stakeholders including the maintenance authorities and other interested parties.

5. Partnering Performance

- At the beginning, the Contractor identified three main areas where he could minimize or eliminate the risk by adopting alternative designs. As a result, three supplemental agreements have been executed with cost savings, greater certainty of programme, reduced construction noise, reduced traffic impact during construction, reduced risk of accidents, reduced construction and demolition waste, and reduced interface with other contracts;
- Measurement of project performance includes both “soft” and “hard” aspects, which are stated in the Partnering Charter.

Hard aspects include mutual objectives on:

programme, safety, environmental considerations, early contract finalization, model size, reduced paperwork, delivery within budget,

quality, minimizing disputes, good public relationships, adequacy of resources, time and cost savings through value engineering.

Soft aspects include values and behaviours exhibited by the team, such as: trust, fairness, proactive approach, professionalism, co-operation, communication, consideration, honesty, open-mindedness, understanding and respect.

Both hard and soft aspects of performance were initially scored using perception of members of the Partnering Steering Group. This has progressed to the use of hard KPIs for the mutual objectives set and "Partnering behaviour" surveys for the key behaviours

The perception of most, if not all, of the signatories to the Partnering charter is that the Partnering has so far been a very positive influence; and

- Specific examples of success resulting from the partnering process include:
 - cost savings resulting from conclusion of the 3 Supplemental Agreements - alternative temporary access road; Contractor's alternative design of Che Kung Miu Road Slip Road Bridges; Contractor's alternative design of site formation. These were negotiated and settled within 6 months rather than a more typical 12 month period;
 - joint resolution of blasting constraints, facilitating tunnel excavation;
 - early completion (at least one month);
 - joint resolution of difficult piling at the pier in close proximity to KCRC railway tracks; and
 - maintaining good public relations, which is one of the mutual objectives, resulting in very few substantiated public complaints.



Dragon Boat Race



Tunneling Works Commencement Ceremony