



CONSTRUCTION
INDUSTRY COUNCIL
建造業議會



GUIDELINES ON PARTNERING

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Preface

The Construction Industry Council (CIC) is committed to seeking continuous improvement in all aspects of the construction industry in Hong Kong. To achieve this aim, the CIC forms Committees, Task Forces and other forums to review specific areas of work with the intention of producing Guidelines, Codes of Practice and Codes of Conduct to assist participants in the industry to strive for excellence.

The CIC appreciates that some improvements and practices can be implemented immediately whilst others may take more time to complete the adjustment. It is for this reason that three separate categories of communication have been adopted, the purpose of which is as follows:

Guidelines

These are intended to guide industry participants to adopt new standards, methodologies or practices. The CIC strongly recommends the adoption of these Guidelines by industry stakeholders where appropriate.

Codes of Practice

The CIC expects all industry participants to adopt the recommendations set out in such Codes as soon as practicable and to adhere to such standards or procedures therein at all times.

Codes of Conduct

The CIC encourages the upholding of professionalism and integrity within the industry through self discipline. The Codes of Conduct set out the relevant principles that all industry participants are expected to follow.

If you have attempted to follow this publication, we do urge you to share your feedback with us in order that we can further enhance them for the benefit of all concerned. On this basis the CIC Secretariat is in the process of developing a “feed-back” mechanism, whereby your views can be consolidated for such purposes. With our joint efforts, we believe our construction industry will develop further and will continue to prosper for years to come.

Purpose

These guidelines are intended as a reference document for client, contractor and consultant organisations considering the use of partnering on construction projects in Hong Kong.

The principal aim is to provide practical and simple advice that will provide guidance on the use of the forms of partnering contracts currently available.

For organisations that are new to the partnering experience, the objective is to provide an introduction to the different forms of partnering together with some thoughts on the principal advantages and pitfalls to be avoided. The different forms of partnering will be explained in some detail to facilitate informed decision making on the form best suited to the requirements of each organisation. Key characteristics of non-contractual partnering, contractual partnering and alliancing are summarised in Annex A.

Moreover, organisations already familiar with the use of partnering on construction projects will find additional information on the different forms of partnering together with their respective benefits and limitations. Advice will also be given on alliancing, the use of NEC partnering contracts and how best to migrate from non-contractual to contractual partnering.

Terminology

In this document, unless the context otherwise requires:

1. "AA" Airport Authority Hong Kong
2. "APM" HK Association for Project Management Hong Kong
3. "APM" Partnering SIG Association for Project Management Partnering Special Interest Group
4. "AU\$" Australian Dollar
5. "CAR" Contractor's All Risk
6. "CEC" Constructing Excellence Contract, part of the JCT Constructing Excellence contract
7. "CIC" Construction Industry Council, Hong Kong
8. "CII" Construction Industry Institute, USA
9. "CIRC" Construction Industry Review Committee, Hong Kong
10. "Com-PCM" Committee on Procurement
11. "DSD" Drainage Services Department
12. "ECC" Engineering and Construction Contract
13. "ECI" Early Contractor Involvement
14. "ECS" Engineering and Construction Sub-contract
15. "ECSC" Engineering and Construction Short Contract
16. "ECSS" Engineering and Construction Short Sub-contract
17. "EOT" Extension of Time (for Completion)
18. "GBP" Great British Pound
19. "GMP" Guaranteed Maximum Price
20. "HK" Hong Kong
21. "HKHA" Hong Kong Housing Authority
22. "HyD" Highways Department
23. "ICAC" Independent Commission Against Corruption
24. "JCT" Joint Contracts Tribunal
25. "KPI" Key Performance Indicator

Terminology

26. "MTRCL" MTR Corporation Limited
27. "NEC" New Engineering Contract, published for the Institution of Civil Engineers
28. "NEC2/ECC" 2nd edition of NEC, renamed as Engineering and Construction Contract
29. "NEC" 33rd edition of NEC
30. "PFI" Private Finance Initiative
31. "PPP" Public Private Partnership
32. "PSC" Professional Service Contract
33. "PTA" Project Team Agreement, part of the JCT Constructing Excellence contract
34. "RICS" Royal Institution of Chartered Surveyors
35. "TOC" Target Outturn Cost
36. "TSC" Term Service Contract
37. "UK" United Kingdom
38. "US" United States
39. "USA" United States of America

1. Background

a. Construct for excellence – report of the CIRC (The Tang Report)

The report on Construct for Excellence (generally known as the Tang Report) published in 2001 by the Construction Industry Review Committee Hong Kong (CIRC) made a number of recommendations on how current procurement practices can be improved to facilitate the delivery of construction projects on time and within budget, and that met specified quality standards. However, it stated that it was not sufficient merely to improve procedures and practices. It called for:

“A change of culture and mindset among stakeholders in order to derive the full benefits of these improvement measures. Key participants in a project, including the employer, the designer, the engineer, the main contractor, sub-contractors and suppliers, need to work together more effectively and efficiently to complete the project in a satisfactory manner. Experience in Australia, the UK and elsewhere demonstrates that a partnering approach to construction will enable all participants in the project to work together as a team rather than in competition with each other.”

b. History of procurement

i. Overseas

Partnering as a procurement methodology was first used in construction in the USA with Arizona State Highways and the US Army Corps of Engineers in the 1950s. Their partnering projects delivered proven cost savings of 9% and improvements of 8% in project delivery time.

Partnering was introduced to the Australian and the United Kingdom (UK) construction industries in the early 1990s as part of a broader set of industry reforms led by their respective governments. Post-contract project partnering (or non-contractual partnering, as referred to in these guidelines) was the first step whereby parties entered into a partnering relationship after a traditional contract had been placed through competitive tendering.

In some overseas jurisdictions, partnering has developed further into alliancing. However, the success of alliancing is acknowledged to depend largely on partnering precepts.

Success with project partnering in the UK led several private sector organisations to enter into strategic long-term arrangements (strategic partnering) involving consultants and contractors working on successive projects with the same clients. Improvements were driven by incentives and performance measurement. The best examples produced 30% reductions in both cost and time over a five year period. Significant improvements were also achieved in one-off projects through partnering alliances for the oil industry and in infrastructure projects for airports, railways, highways and water systems.

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ii. Hong Kong

The UK and Australian partnering experience was initially 'transferred' to Hong Kong and subsequently adapted to the unique characteristics of the Hong Kong construction scene to counter:

1. Visible deterioration in project delivery performance;
2. Adversarial industry culture and conditions of contract;
3. Competitive tendering with awards made on the basis of price rather than value;
4. Fragmented system of multiple subcontracting;
5. Low investment in training and construction management.

Partnering has since been used in various forms by the MTR Corporation Limited (MTRCL), utility companies, the Hong Kong Housing Authority (HKHA), the Airport Authority (AA), the Development Bureau and a number of private sector projects with results ranging from 'exceptional' to 'no discernable improvement'. A survey of a range of partnerships illustrates that, not unexpectedly, the greatest measurable successes were observed in projects where time and management effort had been allocated to establishing an integrated team approach from the outset.

c. Current status

Non-contractual partnering is currently fairly common in Hong Kong's public sector whereas the private sector generally continues to adopt it on an ad-hoc basis.

Given the rapid upturn expected in construction works, the industry accepts that more effective forms of partnering are not only desirable but paramount in order to satisfy the likely demands for it over the next decade.

A number of major infrastructure providers operate on the policy that partnering will be deployed as a delivery mechanism on every project unless there is a "compelling reason not to do so". However it is also acknowledged that the degree to which partnering enhances project performance is generally limited by underlying contractual conditions.

After a period of review, analysis and work done by organisations such as the Association for Project Management Partnering Special Interest Group (APM Partnering SIG), Hong Kong is now poised to embark on a significant change in the way partnerships are formed and delivered (APM HK, 2003). The MTRCL New Extension Projects (five new lines targeted for completion by 2015) will all be delivered using partnering whilst the Drainage Services Department (DSD) is implementing its first pilot project under the New Engineering Contract (NEC) form of contract using a suitable contractual partnering arrangement.

d. Terms of reference

The Committee on Procurement (Com-PCM) under the Construction Industry Council (CIC) was established to examine the current practices on procurement and to recommend good practices for improving the quality and cost-effectiveness in the delivery of construction projects. Towards the end of 2008, members of the Com-PCM decided that the adoption of partnering would help achieve better value in construction procurement for the industry. In view of the considerable amount of fact-finding and stocktaking (of experience) that would be required in the process, the Com-PCM decided to form a Task Force to coordinate and undertake the drafting of the Guidelines on Partnering. Members of the Task Force, comprising specialists in partnering and

Background

relevant stakeholders in the construction industry, have contributed their experience and expertise in the preparation of these guidelines.

In drafting these guidelines, the key terms of reference that the CIC Task Force on Partnering set out to achieve were:

“To review the features of non-contractual partnering, contractual partnering including NEC contracts, alliancing and ways to migrate from non-contractual partnering to contractual partnering.”

2. Why Partnering?

Partnering promotes innovative and non-confrontational project delivery, where the interests of all parties are better aligned.

The Construction Industry Institute (CII), USA defined partnering as:

“A long term commitment between two or more organisations for the purposes of achieving specific business objectives by maximising the effectiveness of the resources of each participant. This requires changing traditional relationships to a shared culture without regard to organisational boundaries. The relationship is based on trust, dedication to common goals, and an understanding of each other’s individual expectations and values” (CII, 1991).

There are no particular prerequisites or technical expertise required to embark upon partnering for the first time. The main ingredient of partnering is an enlightened attitude.

a. Attitude and cultural change

Essentially, partnering aims at:

1. Meeting the mutually agreed project objectives by cooperation, teamwork and mutual trust, rather than by confrontation;
2. Placing value on long-term relationships;
3. Equitable risk allocation;
4. Improving communication and understanding;
5. Lowering project costs, reducing project time and improving quality;
6. Encouraging innovation, waste reduction and better long-term profitability;
7. Minimising contractual conflict and reducing waste;
8. Achieving a better project outcome through the earlier involvement of all the members of the supply chain;
9. Establishing a responsive project organisation focused on decision making.

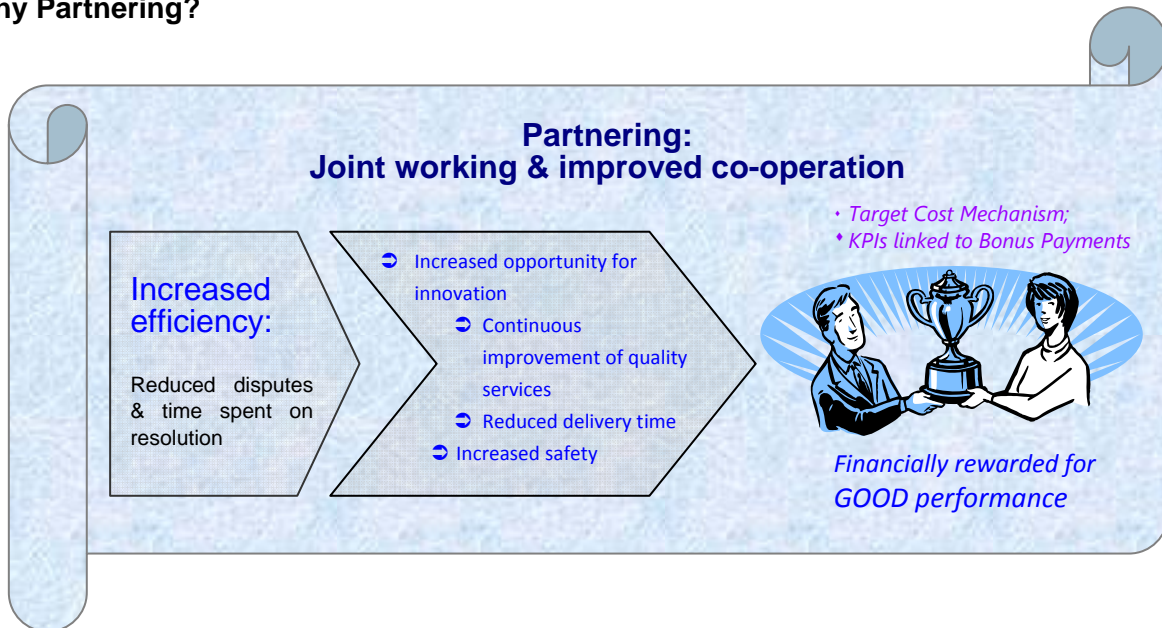
The main requirement for partnering is a desire for all parties to a contract to work together and improve on project delivery.

The construction industry is familiar with projects that have failed to achieve expectations. Examples where projects go off track are many and varied, but typical factors that contribute to failure include:

1. Budget and/or programme over-run;
2. Poor quality or extensive defects;
3. Disputes;
4. Tight programme;
5. Incomplete design/excessive change;
6. Payment problems;
7. Blanket notifications for every possible claim event;
8. A lack of understanding of Extension of Time (for Completion) (EOT) and cost entitlements.

An express desire to avert such outcomes is paramount to choosing the partnering route.

Why Partnering?

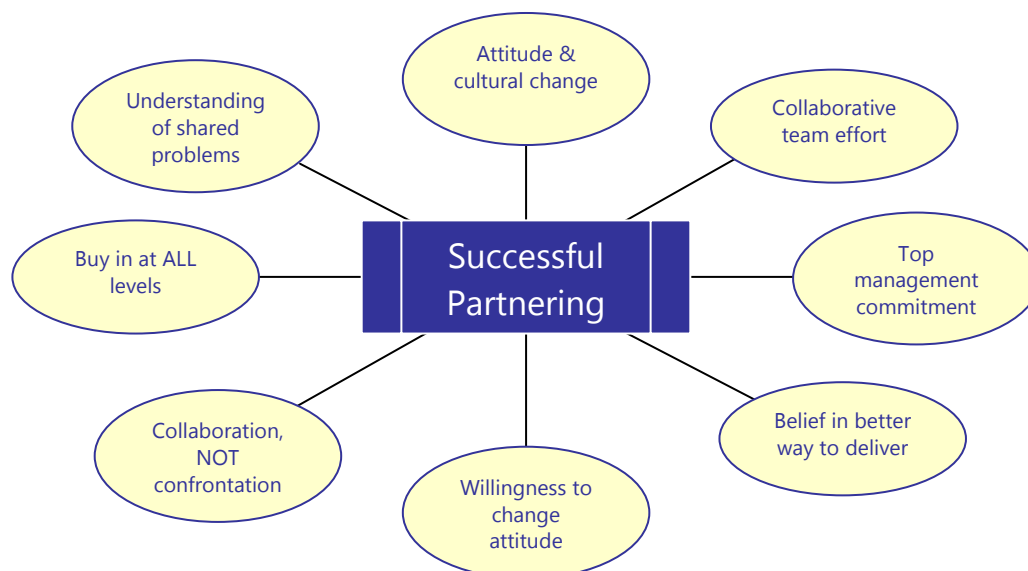


The intention is that joint efforts and improved cooperation will enhance efficiency by reducing disputes and shortening the length of time taken to complete the works, thereby reducing costs and increasing margins. Partnering allows for increased opportunities for innovation, continuous improvement of service quality, reduced delivery time and increased safety. Individual parties may be financially rewarded for good performance by reference to target cost mechanisms and key performance indicators (KPIs) tied to bonus payments.

For partnering to be successful, all parties must appreciate the benefits of a collaborative team effort in achieving win-win project outcomes. This attitude must be driven by a commitment from the top and adopted at all levels within each organisation. Commitment to maintain relationships and ensure good communication usually leads to success.

Other requirements for partnering include:

1. Belief in a better way to deliver projects;
2. Willingness to change attitudes;
3. Collaboration and not confrontation;
4. Support at all levels;
5. Understanding that almost all problems are problems to be shared.



Why Partnering?

Successful partnering will lower the project costs incurred by any party by encouraging innovation as well as reducing waste and the duplication of effort.

It is critical for partnering parties to maintain the same level of commitment throughout the duration of the project until the final account has been agreed upon. There are many examples where successful partnering adopted in the early stages of a project waned for whatever reason, leading to disappointing results.

b. Practical examples, case studies, success stories

There have been many cases of difficult projects that were completed successfully using a partnering approach.

One such example is the East Hall Extension Project at the Hong Kong International Airport which involved the complete reconfiguration and extension of an area through which all departing passengers must pass. It was difficult to document all the potential constraints, which could have led to contractual wrangling in a traditional, adversarial context. The AA project team and the contractor worked hard to develop a “best for the project” approach, resulting in a successfully delivered project that met the expectations of all parties.

A number of other successful partnering case studies are identified in Schedule 2 of these guidelines.

c. Benefits and difficulties in adopting partnering

i. General/Common Benefits and Difficulties

The general benefits and difficulties in adopting partnering as a procurement philosophy are identified below:

1. Benefits

The benefits of partnering are well established in the literature. A study carried out by Albert P.C. Chan et al in Hong Kong in 2004 highlighted the following major benefits of adopting partnering across a range of projects (including the private, public and infrastructure sectors):

- Improved relationships and communication among project participants;
- Better productivity;
- Reduced disputes and litigation;
- Improved conflict resolution strategies;
- Establishment of a win-win attitude among project participants;
- Long-term trusting relationship achieved;
- Responsiveness to short-term emergencies, changes in the project or business needs; and
- Improved corporate culture among project participants.

Additionally, the partnering model is conducive to the following benefits:

- Best value for money;
- Better profitability – win-win situation for all parties;
- Better time management over the project;
- Potential to expedite project completion;

Why Partnering?

- Expedited decision making;
- Improved efficiency leading to streamlined project teams for both client and contractor;
- Higher end product quality;
- Safer working environments and lower accident rates;
- Better environmental management – energy saving; waste reduction; less pollution;
- Opportunities for innovation – value engineering changes; buildability improvements;
- Enhanced morale and team partnering spirit;
- Greater appreciation for the difficulties experienced by the other party;
- Good ice-breaking exercise;
- Enhanced ability to meet mutual objectives by cooperation rather than confrontation as agreed in the Partnering Charter;
- Reduction in claims, resulting in earlier confirmation of final account and shorter duration of contract terms;
- Early identification and discussion of problems and solutions in a more casual atmosphere;
- Conducive to proactive and more efficient joint problem solving approaches;
- Timely escalation of critical issues for resolution by top management;
- Enhanced understanding of contract requirements by all parties;
- Better third party and community relations.

2. Difficulties

Conversely, Chan (2004) identified a number of difficulties that might impede the adoption of the partnering approach:

- Uneven levels of commitment were found among the project participants;
- Parties were faced with commercial pressure which compromised the partnering attitude;
- Parties had little experience of the partnering approach;
- Risks or rewards were not shared fairly;
- The concept of partnering was not fully understood by participants;
- Conflicts arose from the misalignment of personal goals and project goals;
- Lack of proper training on the partnering approach;
- The partnering relationship created a strong dependency on other partners;
- Participants were conditioned to a win-lose environment.

A change in culture and mindset is required to address the following challenges:

- Myopic belief and difficulty dealing with cultural change – a desire to retain yesterday's solution and an unwillingness to embrace change;
- One-off project arrangement – inability to embrace continuous improvement;
- Lack of incentives to improve;
- Top management support and commitment are required;
- Perseverance is required;
- Enthusiasm and momentum for partnering may easily be lost during the later part of the project when work procedures become routine and more claims and delays are accumulated;

Why Partnering?

- Difficulty in bringing the consultants fully into the partnering process;
- Difficulty in developing trust between counterparts;
- Trust may be weakened by a delay in resolving problems that arise from government procedures/constraints;
- Every party tries to protect their own interests;
- Potential to become a tool for taking unfair advantage;
- Misuse of partnering in asking for non-contractual agreements that are difficult to satisfy.

The following challenges are particularly related to non-contractual partnering:

- High tendency to treat others not as partners but as ordinary contracting parties;
- Some may use partnering as a means to circumvent contractual obligations;
- Cooperative work may be inhibited by conditions of contract;
- Incompatibility with the current form of contract;
- Not binding and too informal.

ii. *Specific Benefits to Stakeholders*

As previously explained, owners should possess an open attitude in assisting the consultant, contractor and its subcontractors wherever possible to ensure satisfactory project results. Before the design or construction contract is awarded, the owner must carefully allocate risks to the party best able to manage them. This may mean the owner taking on risks that traditionally have been passed to others. In the case of a project employing non-contractual partnering, all the requirements of the contract will apply, but there will always be ample opportunity to render assistance to both the designer and contractor. Typical examples of this might be the provision of an additional loading/unloading area to the construction process or enabling early access to an area. The owner should be receptive to any difficulties that the designer or contractor may encounter in carrying out the work and resist adopting the view that any difficulty is “the contractor’s problem.” This kind of attitude can lead to a breakdown in cooperation between the parties.

d. Independent Commission Against Corruption (ICAC)'s position on partnering

Owners and the project management team may be concerned with the extent they are able to give assistance to their contractual partners and how they can work closely with the same without breaking the law. In relation to partnering, the ICAC has published the following useful guidelines.

1. Choose partners committed to ethical practices
(code of conduct, past records, management integrity etc.)
2. Know your partners
(with multilayer subletting, it may be difficult to reach out and solicit commitment from the lower tiers)
3. Control the relationship
(avoiding lavish entertainment, gambling, financial interest etc.)
4. Partnering does not mean loosening supervision
(supervision is fundamental in ensuring quality and detecting problems)

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5. Trust but don't sacrifice checks and balances
(system integrity is essential in fraud prevention)
6. Observe the principles of fairness, openness and justice, but not favouritism
(this is essential to maintain public accountability)
7. Flexibility but not unfettered discretion
(delegation but still have to maintain management control and supervisory checks)
8. An aid but not a quick-fix to everything
(hence still need a sound management infrastructure and control system)
9. Communication but not taking shortcuts
(proper documentation for accountability and to provide an audit trail)
10. Mutual benefits without jeopardising public interest
(such as restrictive practices, harbouring bad-performers, favouritism etc.)
11. Over-empowerment without management control leads easily to manipulation and covering up
(management input to contain excessive discretion)
12. Do not delegate the non-delegables to your partners
(such as the compliance testing function and the supervision roles)

e. How widely adopted is partnering in Hong Kong?

To date, most partnering relationships seen in Hong Kong have been non-contractual.

The first use of partnering in Hong Kong led to some notable success on hospital projects in the mid 1990s – for example the Northern District Hospital project in 1994. The subsequent success experienced by the MTRCL with the Tseung Kwan O Extension (which opened well ahead of schedule and substantially below budget) added weight to the view that partnering can bring extraordinary improvements. More examples are set out in Schedule 2.

Hong Kong has had some unsuccessful partnering experiences as is to be expected when the industry is pioneering a new procurement strategy. However, partnering has generally delivered project results that are at least comparable to what would have been achieved under a traditional arrangement. Where there have been no measurable improvements in time, cost or quality, nearly all teams agreed that the better relationships alone made the partnering experience worthwhile.

Contractual partnering has also been adopted in Hong Kong. Some private employers – for example the Hong Kong Jockey Club – undertook several New Engineering Contract projects around 1995.

Given the positive experiences reported on the use of NEC for more than a decade on construction projects in the UK and in other regions, the Development Bureau is keen to gain experience using the NEC standard form of contract on public works contracts in Hong Kong. It will test the NEC suite of contracts on selected pilot projects with a view to gaining experience on the use of NEC and assessing the suitability of NEC for future public works projects.

3. Non-Contractual Partnering

Non-contractual partnering is not legally binding. It does not change the terms of contract or the contractual relationships between the parties.

It is a process that involves the building of harmonious working relationships between stakeholders through the alignment of shared goals and objectives.

A successful partnering arrangement will transform confrontation into cooperation and distrust to trust, promoting team spirit and effort and ultimately improving project performance.

There is no set organisational or contractual arrangement for adopting non-contractual partnering. It can be applied to:

1. Traditional contracts - this is the most common application of non-contractual partnering in Hong Kong. Partnering processes start after the contract is awarded through competitive tendering. There are no limitations in terms of nature of work, size, complexity or duration. For example, One Peking Road is a commercial development; Cambridge House and Three Pacific Place are office buildings; Stonecutter's Bridge, the Hong Kong Shenzhen Western Corridor and the Lok Ma Chau Spurline Tunnel are typical civil engineering projects. It can also be applied to additions and alteration projects such as the Choi Yuen Shopping Centre, the HK Museum of Coastal Defence or The Orchards, which is a residential development. It should be noted, however, that if the contract size is too small, the cost of setting up such partnering processes may outweigh the benefits;
2. Alternative procurement methods – guaranteed maximum price contracts, target cost contracts, complicated projects requiring the contractor's early involvement in the design or procurement process, management contracting contracts, construction management contracts and design and build contracts. Examples include the Design and Build Improvement to Castle Peak Road, the Tradeport Hong Kong Logistics Centre and Chater House.

Similar partnering processes may also be applied to strategic partnering, where long-term relationships between the client organisation and key members of the construction supply chain derive improvements driven by gain share arrangements in preference to competitive tendering.

a. Partnering charter

Partnering essentially involves the agreement of the parties to a partnering charter that is usually an informal—and therefore non-binding—document. The charter normally contains a statement of general principles and objectives that are intended to guide and govern the relationship between the parties. However, it is the underlying contract that establishes the legal relations between the parties.

The partnering charter and commitments to it evidence a moral commitment by all parties to act in the best interests of the project and work together to meet the goal and objectives of the project without dispute.

As will be explained below, a partnering process will normally involve an initial workshop to develop the partnering charter and a dialogue framework, followed by interim

Non-Contractual Partnering

workshops throughout the duration of the project and then a final wrap-up workshop to evaluate the implementation of partnering objectives.

As the partnering charter is not enforceable, it should be drafted properly to minimise risks of unintended legal implications. For example, the charter may expressly provide that it is not legally binding and shall not be used to interpret the underlying contract.

As a guideline, a typical charter shall include the following:

1. A simple vision statement that identifies the main goal to which the team aspires;
2. A more detailed set of objectives with a defined scale of achievement for ease of periodic assessment throughout the project period. Parameters such as time, cost, quality, safety, environmental targets, social and community relationships can be used as a basis for performance measurement;
3. A set of values should be agreed upon and put down in writing to govern how the team works together and provide the basis for the partnering relationship. Typical values will include cooperation, trust, honesty, openness, support and joint problem solving. These should be regularly surveyed to monitor the development of the relationship and the success of the team in adopting partnering behaviours.

Samples of Partnering Charters are illustrated in case studies 3 and 4.

b. Techniques and processes

i. Organisational Awareness/Education

It is crucial for organisations that are about to undertake non-contractual partnering with its business partners to educate its staff on the requirements of such an approach in order to ensure success. Every organisation should educate its own staff on the following issues:

1. What is partnering and what are the potential benefits to the project and the organisation;
2. How to practise partnering in-house, learn the process and identify avenues for improvement before taking up formal partnering with external organisations;
3. How to exhibit the commitment of senior management to partnering;
4. How to promote frank and open discussion amongst staff on the pros and cons of partnering versus the more traditional adversarial approach.

ii. The Initial Partnering Workshop

For the reasons outlined in Chapter 2, it is vital that owners signal their intention to adopt a partnering approach from the outset of the project by arranging a start-up Partnering Workshop with the contractor and major subcontractors. This should be attended by the owner to show commitment to the approach, as well as by the senior representatives of those involved in the project, including the contractor, engineer/architect, subcontractors, surveyors and suppliers.

It may not be practical to invite all subcontractors and others down the chain to attend, but those who are heavily engaged in the construction process should participate in the workshop.

The first workshop is a crucial step that brings all the stakeholders together and transforms their mindset from their usual approach in dealing with each other to a new collaborative working relationship through partnering.

Non-Contractual Partnering

It is common practice to engage an experienced independent facilitator to convene the workshop. The process and result of the initial Partnering Workshop is described as successful if the following goals are achieved:

1. Participating members understand the downside of traditional adversarial working relationships and that improvement can only be achieved if individuals and organisations are prepared to change;
2. Cooperative attitudes and behaviours are highlighted through interaction in the workshop among members, and from there develop into a new relationship;
3. Strategies to achieve mutual objectives—including the establishment of a group to oversee change management (champions or steering group)—are developed and agreed upon;
4. Performance monitoring mechanisms are established;
5. A means of issue resolution is agreed upon;
6. A means of benefiting from opportunities that are presented during the course of the works is identified in order to enhance the project, such as value engineering;
7. A process for continuous improvement is identified.

A set of relationship drivers specific to the project are established by the end of the initial Partnering Workshop, such as vision, common objectives and values. The means by which these relationship drivers will be achieved will also be outlined. These drivers and means are summarised in a Partnering Charter which will then be displayed in work areas to remind members of their commitment and the principles they had agreed upon in order to achieve the partnering approach and ultimately, their final goals.

Not all stakeholders will be available at the initial workshop; for example, subcontracts are often not awarded at the commencement of the project. However, they may be progressively integrated into the partnering process over the course of the project cycle.

iii. Developing the Partnering Relationship

It is important to sustain the achievements attained during the initial Partnering Workshop. In order to do that, senior management should be aware of the following problems and the need to maintain a momentum of change over the course of the project:

1. Prevent parties from reverting back to their former working relationships through regular coaching sessions and Review Workshops;
2. Utilise collaborative decision making to enhance performance and generate energy to change individual attitude and behaviour;
3. Senior management must act as a role model in resolving issues and take the lead in filtering down the belief and commitment through their organisations;
4. Champions or a steering group should be established to check, manage, change and monitor partnering performance;
5. The mechanism should be jointly adjusted to deal with hot issues and obstacles that may undo the working relationship between the groups. Continuous improvement in partnering relies on the commitment of the steering group.

iv. Team Members

New projects will inevitably draw together new team members who are not familiar with each other. Senior management must ensure that team members are aware of

Non-Contractual Partnering

the need for adaptation in teamwork, including dealing with personality clashes. Psychometric methods, self-awareness analysis and social events will help the team get to know each other and encourage collaboration.

For most projects, the major stakeholders in a non-contractual partnering relationship typically consist of the client, main contractor and principal consultants. Greater benefits can be realised by including other stakeholders such as key subcontractors and suppliers that have a significant impact on the project outcome. In the example of Choi Yuen (Shopping Centre) Phase 2, the Partnering Workshop even included outside parties such as shop owners, tenants and members of the District Council. The workshop successfully established good avenues of communication between all the stakeholders, including non-contractual third parties.

v. Review Workshops

Subsequent Partnering Review Workshops are held at various stages throughout the project life cycle to review project performance according to the established mutual objectives. This process helps project team members maintain the cooperative attitudes and relationships that were established in the initial Partnering Workshop. The Review Workshops will also provide opportunities to integrate new members of the project team into the partnering process, including key subcontractors and suppliers that join the team after the initial Partnering Workshop.

An independent professional facilitator is normally engaged to conduct the Review Workshops.

A wrap-up workshop at the end of a project is a worthwhile undertaking as it enables an objective assessment to be made on the outcomes of the partnering process.

vi. Continuous Improvement

To ensure successful project delivery, team members should seek ways to continuously improve the partnering process and take steps to further enhance the cooperative working relationships and hence the effectiveness of project execution. Members should also streamline procedures by identifying opportunities for potential time and cost savings throughout the project life cycle. The Partnering Review Workshops provide a means for such continuous improvement.

However, non-contractual partnering does not change the essential legal obligations under which a contract is delivered. It operates purely as a management structure and is not supported by the underlying construction contract. Therefore, in order to achieve better results, owners should consider combining the doctrine of partnering with other incentive-centric measures such as gain/pain share to motivate the parties to seek continuous improvement in project outcomes.

vii. Performance Measurement

In order to assess the contribution of partnering to the project outcome, there should be a means of measuring the partnering performance and a management review of the performance indicators.

However, there are no readily available objective measures to assess partnering performance. It is therefore necessary to measure both hard (e.g. programme, quality, safety, cost, environment, etc.) and soft (trust, communication, relationship,

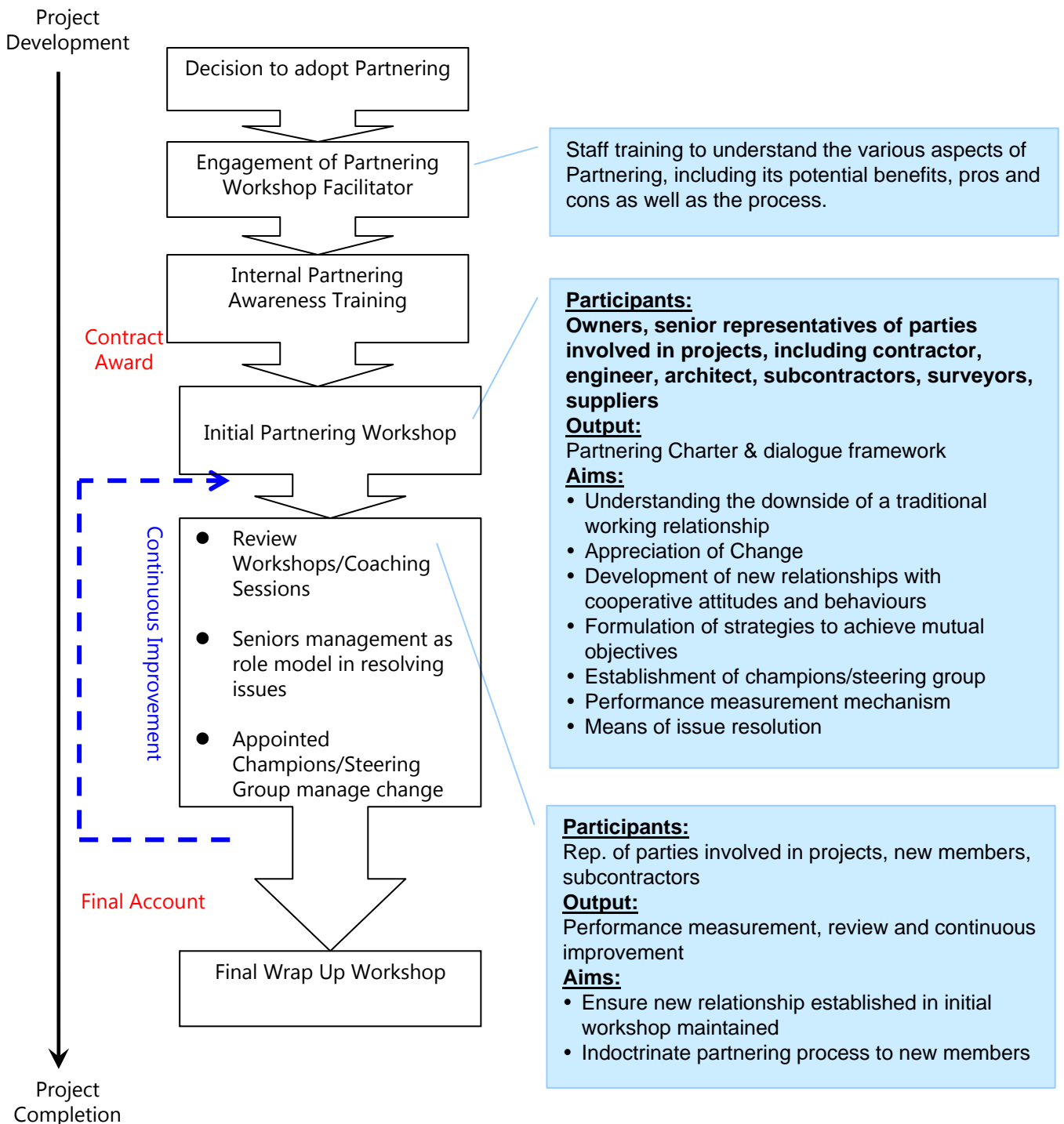
Non-Contractual Partnering

commitment, problem resolution, etc.) issues to understand the overall contribution or success of partnering.

Hard issues can be measured objectively using KPIs that are chosen to align with the mutual objectives set out in the partnering charter.

Soft issues are less easy to measure objectively as they are all about people and relationships. Existing systems all tend to be quite subjective, relying for the most part on the use of questionnaires/surveys to examine the extent to which the quality of the relationship between the parties has influenced or contributed to the achievement of the end product.

See below for a simplified flowchart outlining non-contractual partnering processes.



4. Contractual Partnering

As discussed in Section 3, non-contractual partnering and partnering charters introduce a more collaborative way to work while retaining the use of traditional forms of construction contracts.

Should disputes arise in a non-contractual partnering arrangement, there are no legally enforceable contractual terms that underpin the partnering nature of the contract. The legal relationship between the parties is still as set out in the traditional contract, which can lead to a tension between action that is required to protect contractual entitlements—e.g. by issuing notices and filing claims—and behaviour that is considered to be in the spirit of the partnering charter. In these circumstances, there is always a danger that the partnering charter will be pushed to one side and the traditional contract will prevail.

Accordingly, if the parties are serious about a more collaborative working style, and they have recognised and begun to implement the necessary cultural changes, they are likely to want to reflect this heightened level of commitment to partnering in their contractual arrangements.

This means that the parties should incorporate the principles of partnering into the construction contract itself, rather than simply in a separate non-binding charter which does not form part of the contract. There are two main ways in which this objective can be achieved: first of all an existing traditional construction contract can be amended to make it more partnering-friendly (discussion as to such will follow); secondly, a full standard form partnering contract can be adopted by the parties from the outset.

a. Contractual partnering as distinct from non-contractual partnering

A non-contractual partnering charter is a statement of general principles and objectives, expressed to have no legal effect and intended to guide the parties during a project. It operates over top of another contract and seeks to influence rather than mandate certain behaviours. Under this arrangement, an existing standard form construction contract regulates the legal rights and obligations of the parties, who are nevertheless expected to act with a partnering attitude by virtue of having agreed to adopt the processes and procedures laid down in the accompanying non-contractually binding partnering charter.

Contractual partnering arrangements regulate the parties' behaviour through a framework that is intended to create legally enforceable rights and obligations. Partnering contracts play an important role in assisting parties who wish to work collaboratively, helping them to formulate their objectives, inputs and risk allocation based on collaboration, integration of skills and resources and procedures that are designed to enhance value.

Contractual partnering is a relationship management strategy that offers a way for clients, consultants, contractors and sub-contractors to work together against the challenges of the project rather than against each other. Under a partnering arrangement, all parties agree from the beginning to focus on mutually agreed objectives in a formal structure, building a team that cooperates and solves problems together to avoid confrontation.

Contractual Partnering

b. When and where to use contractual partnering

Partnering arrangements are especially suited to large, complex, high-value projects that require close cooperation between the parties. Contractual partnering is particularly beneficial to projects that involve multidisciplinary aspects, have major programme constraints or risks, lack a fully developed scope or design at the time of tender and which potentially present major technical risks.

c. Amending an existing form of construction contract

Rather than adopting a completely new standard form of contract, an alternative is to incorporate clauses that promote partnering behaviour into contract forms currently used.

In this way parties can gain experience adapting construction contracts with which they are familiar in order to reflect a more collaborative working style. In time, parties may feel more comfortable moving to one of the standard forms of contract identified below.

The guidelines produced by APM HK entitled “2004 Update to the APM's Partnering Guidelines – Making Conventional Construction Contracts 'Partnering Friendly” highlighted the key provisions required to make a contract more conducive to partnering.

Below are some questions which will help parties determine what steps they need to take to make their contracts more partnering-friendly.

1. What are the requirements that the contractor must meet in carrying out the works? Are they reasonable and objective in accordance with the terms of the contract, or are they subject to the project manager's satisfaction?
2. Is there an express term that the project manager (or equivalent) will act fairly and reasonably? Is it possible for decisions to be made by the project team collectively or by a steering group, rather than by the project manager?
3. Do the parties have recourse to a joint problem solving mechanism before exercising a right to terminate and do both parties have rights to terminate?
4. Are provisions relating to grounds for EOT and loss and expense, indemnities and exclusions/limits of liabilities and deeming provisions aligned with the project's risk allocation and borne by the party best able to manage them?
5. Is timely notice a condition precedent to the contractor's entitlement to an EOT/additional payment or can the contractor's failure to give timely notice instead be taken into account by the project manager when assessing a claim?
6. Does the contract have an incentive scheme, such as a target cost incentive scheme, KPIs, open-book accounting or bonus payments?
7. Does the contract reimburse the contractor for direct costs of rework or will such costs be shared by the parties and are defect warranties fair?
8. In relation to payment terms, is the level of retention fair? Is there a short payment period for work done (or even the maintenance of a neutral cash flow for the contractor)? Is there interest on late payments, and do the payment terms link with an incentive scheme (if any)?
9. Is there a collaborative process for the review of variations or the development of value engineering initiatives that save time or cost or improve quality? Is there a provision to pay the contractor for the costs of value engineering exercises or the contractor's alternatives?
10. What is the organisational structure of the project? Is there an integrated project team drawn from all parties with decision making authority?
11. Will the 'educational' costs of Partnering Workshops, teambuilding events and/or facilitators be shared between the parties?

Contractual Partnering

12. How will jointly produced intellectual property rights in know-how and information be treated?
13. Does the contract provide for a single project-wide Contractor's All Risk (CAR) policy?
14. Does the contract provide expressly that provisions can only be amended or waived by agreement in writing, to ensure that contractual provisions are not amended or waived by conduct?
15. Does the contract provide ways to deal with problems through an 'early warning' system with notices, meetings, time limits and on a 'without prejudice' basis? Does the contract provide for an independent third party adviser, such as the Dispute Resolution Adviser programme used by the Hong Kong Government? Are there alternative dispute resolution mechanisms such as mediation, arbitration and/or litigation?

d. Standard partnering contracts in use in the industry

There are various standard partnering contracts in use around the world. Three of the main forms of partnering contract are identified below.

i. NEC3

Subject to the results of the trial projects to be implemented by the works departments, the Development Bureau will review the effectiveness of the NEC form of contract and the pros and cons for its wider use in the public sector in Hong Kong.

The NEC3 form of contract adopts a system of core clauses and options to provide for traditional arrangements, as well as target, cost reimbursable and management contracts, together with professional services contracts and subcontract forms. A guide to the use of the NEC3 is set out in detail in Schedule 1 to these guidelines.

The NEC3 has been championed as suitable for partnering arrangements due to the operation of core clause 10.1 which refers to acting "in a spirit of mutual trust and cooperation". In addition, the NEC3 expressly introduces the concept of partnering in Option X12. This option does not facilitate multiparty contracting. Instead, the client enters into a series of bilateral NEC contracts with each participant and the parties who have this option included in their contracts are all the bodies who are intended to make up the project partnering team. These parties must recognise that by entering into a contract which includes Option X12 they will be undertaking responsibilities additional to those in the basic NEC3 contract. Consequently the NEC option does not expressly create legally enforceable obligations or contractual relations between partners, other than those between parties to the bilateral contract.

In the UK, the Office of Government Commerce recommends that public sector procurers use NEC contracts on their construction projects. It has also stated that the NEC now complies fully with the Achieving Excellence in Construction principles, as it uses simple language and modern project management techniques. Furthermore, the Olympic delivery authority has selected the NEC as the preferred form of contract for the London 2012 Olympic Games projects.

ii. JCT Constructing Excellence

This is a single form contract intended to engage the entire supply chain in a series of bilateral contracts to carry out works or services in a collaborative manner. The contract consists of two documents:

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1. Constructing Excellence Contract (CEC), comprising the conditions, bi-party agreement and contract particulars;
2. Project Team Agreement (PTA), a multiparty document that supplements the individual bi-party contracts.

The CEC is a bipartite contract and outlines conditions between a purchaser and supplier. It may also be used between a developer and contractor, or a contractor and subcontractor. The CEC also includes a gain/pain sharing mechanism. The objective of the CEC is to encourage collaborative behaviour and the use of risk management at the pre-tender stage to ensure delivery of successful project outcomes, as well as to provide flexibility for use throughout the supply chain.

The PTA is an *optional* multiparty agreement entered into between the project team members who have entered into the bipartite CEC. It works to supplement rather than override the individual CEC by dealing with the function and role of the participants and how the team works together. It sets out ways the team should go about resolving disputes and includes an optional gain/pain sharing mechanism.

iii. PPC 2000

The PPC 2000 is the first multiparty standard form partnering contract to be published. This means that all the members of the partnering team are integrated under a single multiparty contract. This puts the contractor, consultants and key specialist subcontractors/suppliers on the same terms and conditions through a single contract so that they are each fully aware of the roles and responsibilities of the others and owe each other a direct duty of care. Therefore, the client works with other partnering team members through one integrated contract rather than through numerous separate two-party, or bilateral, contracts. This is in direct contrast with the form of the NEC3 contract.

A collaborative statement is set out in clause 4.1 of the partnering terms which states that the partnering team members shall establish, develop and implement their partnering relationships with trust, fairness, mutual cooperation, dedication to agreed common goals and an understanding of the expectations and values of the other parties.

In addition to the multiparty approach, the PPC 2000 is also a two-stage contract as it is intended to cover the entire duration of the design, supply and construction process from the feasibility and design phases to completion of the works. The parties are therefore appointed early in the preconstruction phase to input into design development, value engineering and risk management and to work towards an agreed maximum price.

iv. The UK experience

In the UK, the tenth survey entitled Contracts in Use (published by the Royal Institution of Chartered Surveyors (RICS) in 2004) shows a rise in the use of partnering agreements. The survey reviewed 2,330 projects with a total value of £3,035 million (and an average value of £130 million per project) in 2004.

The survey notes that the increase in the use of NEC forms of contract is probably the most significant change observed. Although the NEC was strongly recommended by Latham in his report, Constructing the Team, the 2001 RICS Contracts in Use survey revealed no significant take-up of the form for building works with just ten reported cases. The 2004 survey revealed a very different picture with

Contractual Partnering

155 projects in all value bands using one of the NEC variants. The NEC accounted for 6.7% of all the contracts recorded in the 2004 survey and 12.8% of the value of all the contracts identified. The vast majority of the contracts (77%) used the Option C target contract with activity schedule, covering virtually all contract value bands (please refer to Schedule 1 for a more detailed description of how the NEC contract operates).

In relation to other partnering contracts, the survey notes that there is an increase in the emergence of the PPC 2000. Ten uses were recorded in the 2001 survey and this has since increased to 45 in the 2004 survey. This form of contract accounted for 1.9% of all the contracts used in the survey and 6% by value, covering contracts between £100,000 and £20 million.

The survey also sought to identify the use of other partnering arrangements used in conjunction with standard forms of contract. One binding partnering agreement was noted in response to this question but 31 non-binding partnering or alliance provisions were recorded, largely in connection with smaller contracts of up to £500,000 in value, but also with contracts of up to £10 million in value.

The total use of partnering agreements and arrangements has increased markedly since the 2001 survey. There were 45 projects (1.5% of the total) at the time worth a total of £143 million (4.3% of the total) that were noted to be using some form of partnering. In 2004 the figures increased to 116 projects (5% of the total) worth a total of £316 million (10.4% of the total).

v. *The Australian experience*

In the late 1980s there was a trend in Australia towards a more cooperative approach to contracting brought about by periods of high profile disputes leading to litigation and arbitration. During this time the concept of partnering was introduced into Australia and adopted, particularly, on a number of Australian road projects.

However, the main forms of relationship contracting adopted more recently in Australia include alliance agreements and Early Contractor Involvement (ECI). Alliancing is described in the last chapter of these guidelines as a more developed form of relationship contracting. An analysis of ECI is beyond the scope of these guidelines.

vi. *The Hong Kong experience*

Notwithstanding the generally limited experience of contractual partnering in Hong Kong, a trial project utilising the NEC3 are currently being planned by the DSD. The DSD project comprises the decking of a 180-metre long and 12-metre wide open nullah at Fuk Man Road in Sai Kung as well as landscaping and local road junction improvement works with a total contract value of HK\$ 50 million.

The DSD made the following preliminary observations in the course the decking pilot project:

1. The drafting process for NEC contracts should follow a logical procedure (flowcharting). The employer (owner is used in the draft guidelines) should select one of the six main Options which best meets the risk sharing approach and type of pricing mechanism, followed by a selection of the Secondary Options. Amendments to the NEC core clauses to include mandatory

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requirements (e.g. public health and safety) and policies of the employer's organisation are then incorporated under Option Z;

2. During the bidding process, tenderers should check if the core clauses have been amended. The changes often relate to risk allocations, notification provisions, policies of the employer's organisation which prevail over the NEC provisions, dispute resolution procedures and/or insurance requirements;
3. A pre-tender briefing and dummy tender exercise were conducted in order to ensure that tenderers understood what information should be submitted with their tenders in order to minimise technical mistakes, thereby leading to potential disqualification. Perhaps until the construction industry has gained sufficient experience in tendering NEC contracts, employers may consider conducting a similar pre-tender briefing and dummy tender exercise for potential bidders. This will ensure that tender prices accurately reflect risk allocations and therefore a fairer tender price return.

5. Alliancing

The delivery models previously examined focus on relationship frameworks that encourage proactive behaviours and collaborative working in the context of non-contractual partnering and contractual partnering. The importance of a collaborative working relationship, which underpins partnering, has been discussed at length as a means of moving away from adversarial contractual positions, competitive tendering for the lowest price and risk-adverse and claims-conscious contractors.

Another model that focuses on relationship management and challenges traditional expectations, attitudes and practices is alliance contracting.

Alliancing reflects a shift from more traditional procurement methods that focus on strict risk allocations to a collaborative approach. It is another contractual arrangement that encapsulates collaborative behaviours, equitable risk allocation and a commitment to principles of fairness, honesty and integrity. Properly drafted, such behaviours can be adopted by parties in construction contracts as binding obligations. In its purest form, an alliance creates a virtual organisation, in which no real distinction exists between the design team, the construction team and contract administrators.

Alliancing is not a new concept. It has been in use in Australia for more than a decade. It is growing in popularity due to its potential to limit disputes, work within resource limitations and thereby assist projects to be delivered on time and within budget.

As will be explained in this chapter, alliancing is suitable for larger, more complex projects where the specific output requirements are less well defined. If used properly, alliancing has the potential to produce many positive outcomes including greater certainty over project costs, opportunities for innovation and improved performance in the delivery of infrastructure projects in the public and private sectors.

a. Contractual partnering as distinct from alliancing

Alliancing is a developed form of relationship contracting and is considered a highly evolved form of partnering. An alliance model shares a similar rationale to contractual partnering: cooperation and alignment of objectives and interests of the participants. Such collaborative working relationships and establishment of financial incentives are documented in construction contracts as binding obligations to align risk and reward within a legally enforceable framework that limits the scope for disputes.

A key distinction between contractual partnering and an alliance structure lies in the handling of disputes. Under contractual partnering, parties are encouraged to proactively identify and warn of matters that could have consequences for cost, time and quality so that they may cooperatively seek solutions that could bring advantage to all those affected. If a dispute becomes inevitable, there are flexible dispute resolution mechanisms in place—e.g. the adjudication provision in the case of the NEC3—to resolve disputes as they arise as opposed to leaving them to the end of the contract.

Alliance contracting goes further by fostering a 'no blame, no dispute' culture. Under an alliance framework, parties are required to resolve all issues and disputes within the alliance without recourse to litigation or arbitration, except in the case of wilful default or negligence. Further characteristics of an alliance are set out below.

Alliancing

b. How widely adopted is alliancing?

In recent years, there has been a significant shift from traditional adversarial contracting towards project delivery based on proactive and collaborative relationships. Alliancing contracting has become increasingly common in Australia and the UK, and interest is now growing in Hong Kong.

i. Hong Kong

A hybrid alliancing model was adopted for the completion of the 4.4 km Lai Chi Kok Viaduct project. An alliance contract was entered into between Necso Entrecanales Cubiertas, S.A. (main contractor) and VSL (subcontractor) for the project. Necso and VSL worked together to develop a target cost estimate to provide incentives for the parties to work together in achieving better results for the project.

ii. Australia

Alliances have been used on a significant number of large infrastructure projects in Australia, both for public sector and private sector principals.

Alliancing was first used more than a decade ago by the oil and gas industry in Western Australia, and has, where appropriate, been adopted by both state and Commonwealth Governments. Notably it was used in the building of the National Museum in Canberra. The Queensland Government has been the greatest supporter of the doctrine, using it for a number of projects including the North Queensland gas pipeline and the Port of Brisbane motorway. Projects such as the Tarong coal transport project and South East Queensland Infrastructure Plan and Programme rail project are among others that account for more than AU\$ 2 billion being delivered through project alliances in that state.

Contract alliancing is also gaining popularity in the state of Victoria. It has already been employed in the high-profile channel deepening and Tullamarine-Calder interchange project. The Victorian Government's commitment to using alliancing is further reflected in the publication of a project alliancing practitioners' guide by the Department of Treasury and Finance (Victoria).

c. When and where should alliancing be used?

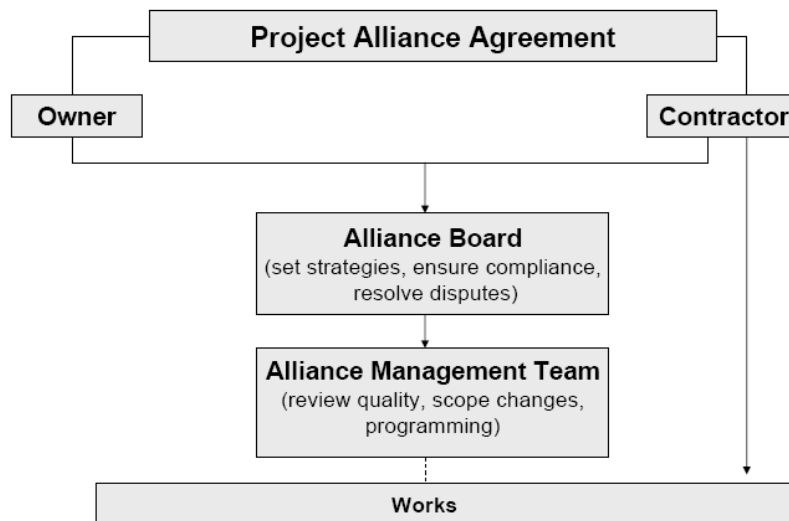
Alliancing is generally suited to projects that will benefit from innovation. For this reason, projects that carry risks that are difficult to define, explore or understand, face significant time constraints or involve a high level of technical or execution risks and interface issues are regarded as ideal alliancing candidates. In circumstances where a risk does not eventuate, the owner does not pay the risk premium; if a risk does eventuate as a result of the shared exposure to the consequences of the risk, there is a collective focus on minimising the impact of the risk.

Other drivers for using alliancing include projects in which the technical solution or the scope is not sufficiently understood at commencement, where there are timing deadlines and parallel activity processes can be followed rather than sequential programming, where project costs are above a certain threshold (low project costs may not justify the level of commitment and involvement required by senior personnel), and where the best technical solution is not apparent prior to the involvement of the construction team.

Alliancing

d. Alliancing framework

The following illustration shows the typical components of a simple alliancing arrangement, which includes the establishment of an alliance board and management team. These bodies will focus on unanimous decision making on a 'best for project' basis and commit to equitable principles of fairness, honesty and integrity. Parties will share and encourage the free-flow of project information among all participants. There is also an open book approach to the assessment of costs (which is relevant to repayment under the project documents).



As with partnering, alliancing can be divided into project and strategic alliancing. An alliance can also be competitive so that the principal continues to work with usually no more than two teams in the development of the target outturn cost (TOC). The TOC is the reference figure against which financial performance is judged. It stands in place of a fixed contract sum. The alliance team selection decision is therefore made later in the process. A competitive alliance is also known as a dual or twin TOC alliance and is considered to more readily satisfy the 'value for money' test.

e. Legal aspects of an alliance

The key characteristics of an alliance include certain legal arrangements teamed with specific organisational behaviours.

The legal aspects of an alliance include:

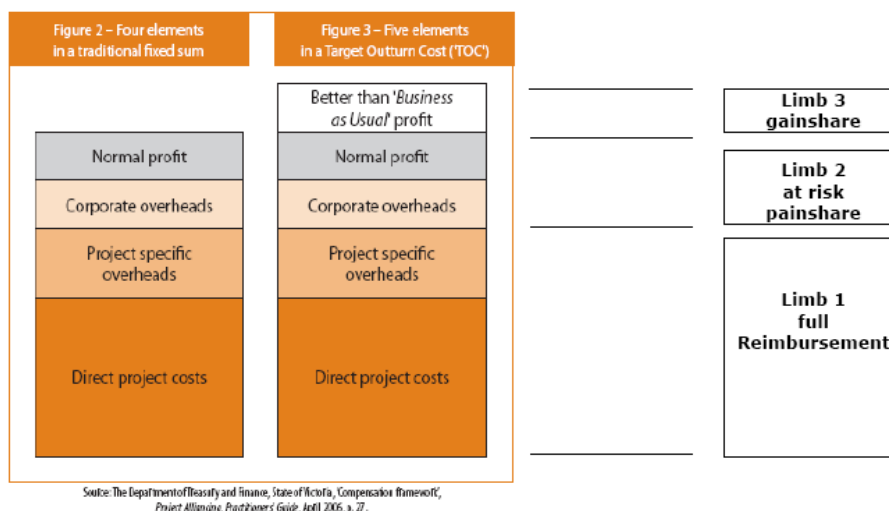
1. The absence of a fixed lump sum (the remuneration is primarily cost reimbursable);
2. The parties assume collective ownership of the risks associated with project delivery, i.e. sharing of all (or almost all) risk and responsibility;
3. A joint group with members from all the alliance participants (project alliance board or alliance leadership team) drive the leadership and management of the alliance;
4. The absence of individual or several liability, i.e. a 'no blame' culture;
5. The presence of a financial risk sharing mechanism (so-called gain/pain share mechanism);
6. The compensation framework is structured on an 'all win – all lose' basis. The developer will normally pay the non-owner participants their direct project costs

Alliancing

and overheads regardless of project outcome, although the non-owner participants' right to profit is linked directly to project performance against a set of pre-agreed indicators;

7. An inability for any party to bring legal proceedings against any other party, i.e. a no dispute regime (save for limited events such as wilful default or gross negligence).

The gain/pain share mechanism is the formula whereby all project participants have their financial remuneration linked to the performance of the project as a whole rather than their own performance as an organisation. The parties either all win or all lose. There cannot be a win-lose situation. This is illustrated below:



f. Benefits and limitations of alliancing

The benefits of using alliancing for a particular project include innovation, better technical and quality outcomes, improved performance, better value for money, timely delivery, outcomes that are generally better than business as usual and avoidance of disputes. Further benefits accrue to organisations and individuals, such as greater job satisfaction and motivation, increased profitability and the transfer of alliance behaviours to non-alliance projects.

However, despite these benefits, an alliance will not be suitable for all projects. The model requires significant commitment from management and staff in planning and implementing the alliance structure. Therefore, small projects which are already fully scoped and designed are unlikely to benefit as the commitment of resources required by the structure will be disproportionate to the work involved.

Additionally, alliancing will not be appropriate where the joint allocation of risk is unacceptable to the client. This could arise from cultural resistance, such as where parties are unwilling to adhere to open-book policies or where financiers require the certainty of a more traditional approach to risk allocation.

A further constraint on involvement in alliancing is the availability of personnel with the right attitudes and behaviours, including authority, insight, flexibility and confidence. However, as more alliances occur, more people will gain experience from participating in an alliance. It is also important that those participating in an alliance are able to make and secure decisions in a timely manner, which some observers consider to be a particular challenge for governments.

6. Schedule 1 – The NEC

a. The objectives of the NEC

The NEC has become increasingly popular since the first edition was published in 1993. The second edition, NEC2, was published in 1995, when it was renamed the Engineering and Construction Contract (ECC). The third (and current) edition, NEC3, was launched in July 2005. This schedule sets out an overview of the most recent version, namely the NEC3. The NEC3 is a suite of construction contracts designed to meet the needs of various project arrangements with the following objectives.

i. Flexibility

The base contract comprises nine core clauses. The Employer has a choice of one of six main payment options to accommodate the different contractual payment arrangements including priced contract, target contracts, cost reimbursable contracts and management contracts. Flexibility is further enhanced by the number of secondary options that may be used to improve the risk profiles of both the Employer and the Contractor.

In practice, the NEC3 has been commonly adopted on engineering and construction projects requiring civil, electrical, mechanical and building works. It is designed to accommodate projects requiring the full extent of design responsibility or subcontracting to none.

ii. Simplicity and Clarity

The NEC3 is written in plain English, using concise sentences and avoiding legal jargon. This may however cause some unease to users who have become used to traditional contracts.

The contract is organised in a user-friendly structure. The minimal use of cross referencing within clauses and clear numbering system provide easy access to clauses and assist users with gaining familiarity with its content.

Flowcharts of the procedures defining the process and sequence are widely adopted. This is designed to ensure that the procedures are clear and not conflicted and that the structure of the contract is further simplified.

One notable limitation of partnering is that the forms of contract referred to below are binding on the parties and contain principles and objectives set out in open-ended language, the legal effect of which is not yet certain. As this language is integral to the form, it is difficult to minimise the risks of unintended legal consequences. Parties must consider whether other features of these forms outweigh these risks.

iii. Stimulus for Good Project Management

The NEC3 is a procedurally-based contract containing clear actions required of the parties in given circumstances. It is founded on the principle that foresight and cooperative management of the interactions between the parties can successfully minimise the risks inherent in construction and engineering works. The parties are

Schedule 1 - The NEC

encouraged to jointly provide more robust control and achieve increased certainty of project cost outcome.

Good project management requires employers, designers, contractors and project managers to work collaboratively. The NEC3 achieves this by setting out a clear division of the functions and responsibilities of the parties to promote accountability and transparency in their working relationship.

Inevitably, uncertainty and risk are inherently found in any construction or engineering project. To this end, the NEC seeks to reduce the likelihood of those risks occurring and limit their subsequent impact by clearly and simply allocating risks and implementing risk reduction procedures. Early warning procedures are in place to ensure that any problem is identified early and resolved between the parties in a collaborative fashion as soon as possible.

b. The NEC3 family of contracts

1. The Engineering and Construction Contract (ECC)
2. The Engineering and Construction Subcontract (ECS)
3. The Engineering and Construction Short Contract (ECSC)
4. The Engineering and Construction Short Subcontract (ECSS)
5. The Professional Services Contract (PSC)
6. Term Service Contract (TSC)
7. Framework Contract
8. Adjudicator's Contract

With the exception of the Adjudicator's Contract, all other NEC contracts are drafted for use in a multiparty partnering arrangement utilising the provisions of Option X12 Partnering (see below).

c. Project organisation

The Engineering and Construction Contract (ECC):

The ECC is a contract between the Employer and the Contractor. It can be used whether the Contractor has full design responsibility, some design responsibility or no design responsibility.

Unlike traditional contracts, the ECC has no equivalent role to that of the Architect or Engineer. The ECC sets out the roles and responsibilities of the Employer, Project Manager, Supervisor, Contractor, Subcontractor and Adjudicator.

The Engineering and Construction Subcontract (ECS):

The ECS, ECSS or PSC may be used by the Contractor for his subcontracts. Use of the same text in the main contract and subcontract provides some back-to-back protection for main contractors using one of the NEC3 family. There is nothing to prevent a subcontract using a different Option from that used in the main contract. An obvious example of this is where the main contract uses a cost reimbursable or target Option (C, D or E) whilst the subcontract uses a priced Option (A or B).

The ECC includes (among others) the Employer, Project Manager and Supervisor. However, the ECS equivalents have been combined into one (the Contractor). All Options except for F (management contract) can be used in the subcontract. In

Schedule 1 - The NEC

preparing the subcontract, the Contractor must be precise in detailing the documentation which comprises the Sub-contract Works Information.

Professional Services Contract (PSC):

The PSC may be used by the Employer for Consultants providing professional services, as well as for the appointment of the Project Manager or Supervisor under an NEC3 contract. However, its use is not limited to projects where other NEC3 contracts are being used; it can be used where no construction works are to take place or where other forms of contract for construction are being used. When the PSC is used by a contractor (for instance, to appoint a designer as a subcontractor in a design and construct contract) the contractor has the role of Employer in the PSC. In this case, the PSC can be used as a subcontract with appropriate amendments. The most critical document to be provided is the Scope. This contains the detailed requirements of the Employer and is frequently referred to in the PSC.

i. The employer

The Employer normally appoints a Project Manager and a Supervisor. The roles of Project Manager and Supervisor are independent of each other.

ii. The Project Manager

The Project Manager essentially manages the contract for the Employer with the intention of achieving the Employer's business objectives for the completed project.

The Employer usually appoints the Project Manager at the feasibility study stages of a project. His duties include acting on behalf of the Employer and providing advice on the procurement of design, estimates of costs and time, merits of alternative schemes and an appropriate contract strategy for the project.

Considerable authority is placed in the hands of the Project Manager under the ECC. He has authority to change the works, instruct the Contractor and generally apply his managerial and engineering judgment. His role is defined in the contract in terms of the actions and decisions he is to take. He must act reasonably and will be subject to the scrutiny of the Adjudicator if the Contractor considers that he acted outside the contract.

As the Employer's designer is not referred to in the ECC, the Employer should ensure that the Project Manager's brief includes management of the designer's activities.

iii. The Supervisor

Essentially, the Supervisor's role is to check that the works are constructed in accordance with the contract. His role is defined in the ECC in terms of his actions and decisions. He is also concerned with identifying and rectifying Defects and issuing the Defects Certificate to signify the end of the obligations of the parties.

iv. The Adjudicator

All disputes must first be referred to the Adjudicator for his decision before they are referred to the tribunal.

The Adjudicator is appointed jointly by the Employer and the Contractor using the NEC3 Adjudicator's Contract. His role is to settle any disputes that arise between the

Schedule 1 - The NEC

parties quickly and efficiently. The Adjudicator is independent to both the Employer and the Contractor and is required to give a decision on the dispute within stated time limits. The Adjudicator's decision is binding upon the parties. However either party may refer the matter to the tribunal within the time limits stated in the contract if the decision is not accepted by either party.

The Adjudicator's fee is shared equally by the parties unless otherwise agreed.

v. *Contract Strategy*

Generally, the Employer chooses the most appropriate contract strategy for the project. The following factors should be considered in deciding the type of contract to use from within the NEC3 family of contracts:

1. Which party will be responsible for design?
2. What is the duration/timeframe for the project?
3. How important is performance of the completed works?
4. Which party is in the best position to manage a particular risk?
5. How many parties are involved in the project and how will the respective contracts be coordinated to achieve the same project objectives?
6. Is certainty of price important to the Employer?

The advantage of using the ECC is that whatever strategies are adopted by different contracts within a project, the majority of the procedures, which are based upon the core clauses, will be common to all contracts. This flexibility allows the procurement process to be commercial, practical and consistent with the Employer's objectives.

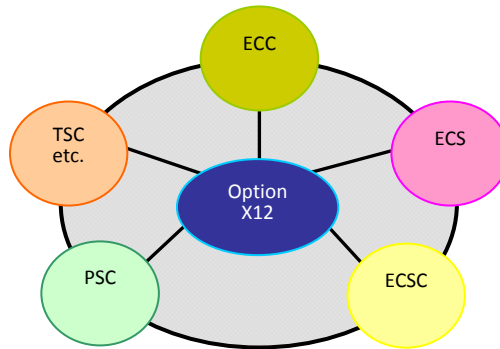
The ECC contains six main types of payment options to be adopted depending on the risk allocation between the Employer and the Contractor. With the core clauses and a comprehensive range of secondary options clauses, each contract can be tailored from a set of standard clauses with minimal or no change to the standard documents or the standardised procedures. Furthermore, the clear and transparent procedures contained in the ECC can be actively used as a management tool and decisions regarding design liability and risk can be managed and allocated to the party most able to respond to it.

There are many procurement routes available including traditional, design and build, prime contracting, management contracts and Private Finance Initiative (PFI)/Public Private Partnership (PPP). The NEC3 is designed to be flexible enough to work in most of the currently available procurement routes. The use of target cost contracts has increased as the uses of partnering arrangements are being encouraged.

Schedule 1 - The NEC

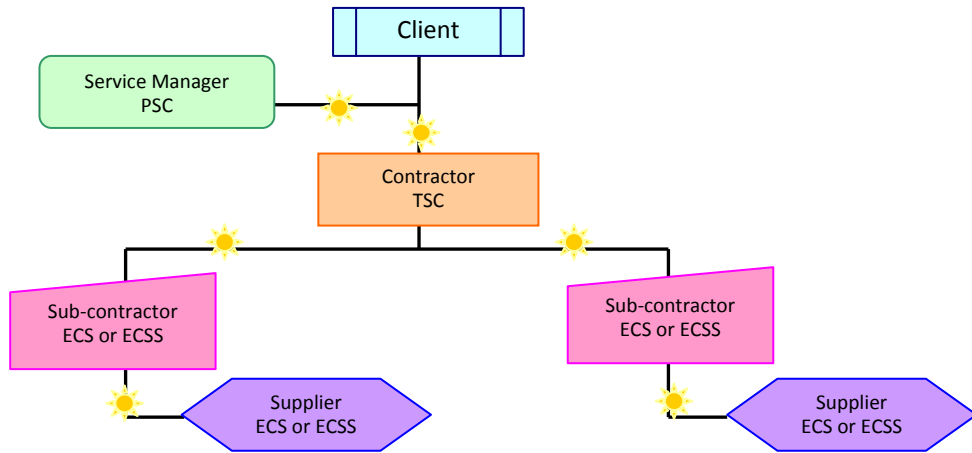
As will be explained below, Option X12 Partnering connects the various biparty contracts and is intended to be used:

1. For partnering for any number of projects and services;
2. Internationally;
3. For projects and services of any technical composition;
4. As far down the supply chain as required.



Typical Option X12 Partnering relationship

The following diagram shows, by use of a sun to signify Option X12 Partnering, that key partners in any NEC3 contractual relationship can be drawn out to create the multiparty partnering arrangement.



Example of use of Option X12 Partnering

A partnering contract between two parties is only achieved by using a standard NEC3 contract (a bi-party contract). Option X12 should be adopted as a secondary option common in the contracts of the parties to the project. The parties who have this Option included in their contracts are intended to make up the project partnering team. However Option X12 does not create a multiparty contract.

By entering into a contract that includes Option X12, the parties are undertaking responsibilities additional to those in the basic NEC3 contract. They must work

Schedule 1 - The NEC

together to achieve the objectives of the client and other partners in a spirit of mutual trust and cooperation, reinforcing this core clause.

A KPI is an aspect of performance for which a target is stated in the schedule of partners. If one partner lets the other down for a particular target by poor performance, they all lose their bonus for that target.

Option X12 does not include direct remedies for any non-contracting partner to recover losses suffered through the failure of the other. This Option does not create a legal partnership between partners who are not one of the parties to the contract.

The final sanction against any partner who fails to act as stated in the Option X12 is for the partner who employed them not to invite them to partner again.

d. NEC – nuts and bolts

For the purposes of this section, the terms described herein are those used under the ECC. In considering the ECS or PSC, readers may broadly substitute references to the Contractor with Subcontractor or Consultant as necessary.

i. Core Clauses – Key Features

There are nine core clauses that are common to all contracts within the NEC3 suite. The requirement to act in a spirit of mutual trust and cooperation between the Employer, Contractor, Project Manager and Supervisor is expressly provided for under part 1. Other core clauses concern:

1. The duty to give early warning of matters that may trigger consequences for cost, time and quality;
2. The scope of the Contractor's duties including providing and designing works in accordance with the Works Information, cooperating with others and complying with instructions;
3. The requirement to complete to deadline and to certify works;
4. The obligation and procedures with respect to testing, inspection and defect correction;
5. Assessment and payment procedures;
6. Time bar effect should the Contractor fail to serve notice of a compensation event within the time allotted, and conversely deemed acceptance of a compensation event if the Project Manager fails to reply on the Contractor's notice;
7. Vesting of title of plant and materials;
8. The requirement to effect insurances and the giving of indemnities by each party;
9. Termination rights and procedures.

ii. Main Options

The ECC provides for the following six types of payment options. An option must be chosen for each contract:

1. Option A – Priced contract with activity schedule
2. Option B – Priced contract with bill of quantities
3. Option C – Target contract with activity schedule
4. Option D – Target contract with bill of quantities
5. Option E – Cost reimbursable contract

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6. Option F – Management contract

Each option allocates different financial risk considerations and incentives between the Employer and the Contractor.

Under Options A and B, the Contractor is paid at tendered prices (or rates with Option B) for the completed works. He bears all the risks except for the Employer's risks stated in the contract and the financial and time effects of compensation events. At the other end of the spectrum, Options E and F are two types of reimbursable contract in which the financial risk is largely borne by the Employer. The Contractor is paid the Defined Cost as defined in the chosen main option. Lastly, the target contracts in Options C and D allow the financial risks to be apportioned as agreed between the Employer and the Contractor.

The main options can be conveniently split into three categories:

1. Priced contracts
2. Target Cost contracts
3. Cost-reimbursable contracts

e. Priced contracts

Priced contracts are used when the Employer is in a position to provide the Contractor with a definitive description of the works. The design does not necessarily have to be completed at the tender stage.

i. Option A (with activity schedule)

An activity schedule identifies the list of activities required in completing the Works. The Contractor is responsible for preparing an activity schedule and the quantities required for each activity. The lump sum priced by the Contractor for each activity is the Price to be paid by the Employer when that activity is completed. The total of the tendered lump sums for each activity is the Contractor's Price for the whole of the Works. As such, the Contractor is motivated to progress the activities and must ensure that the price for each activity includes all necessary costs.

ii. Option B (with bills of quantities)

A bill of quantities sets out each item of material or work required for construction as well as the type and estimated quantity of each item. It is prepared by or for the Employer, applying the standard methods of measurement. The Contractor prices the items having regard to the tender documents and matters which are at the Contractor's risk. The Contractor will be paid for works done on the basis of actual measurement of those items with quantities. As such, the Contractor has an interest to keep within the tender price and minimise costs during construction.

f. Target cost contracts

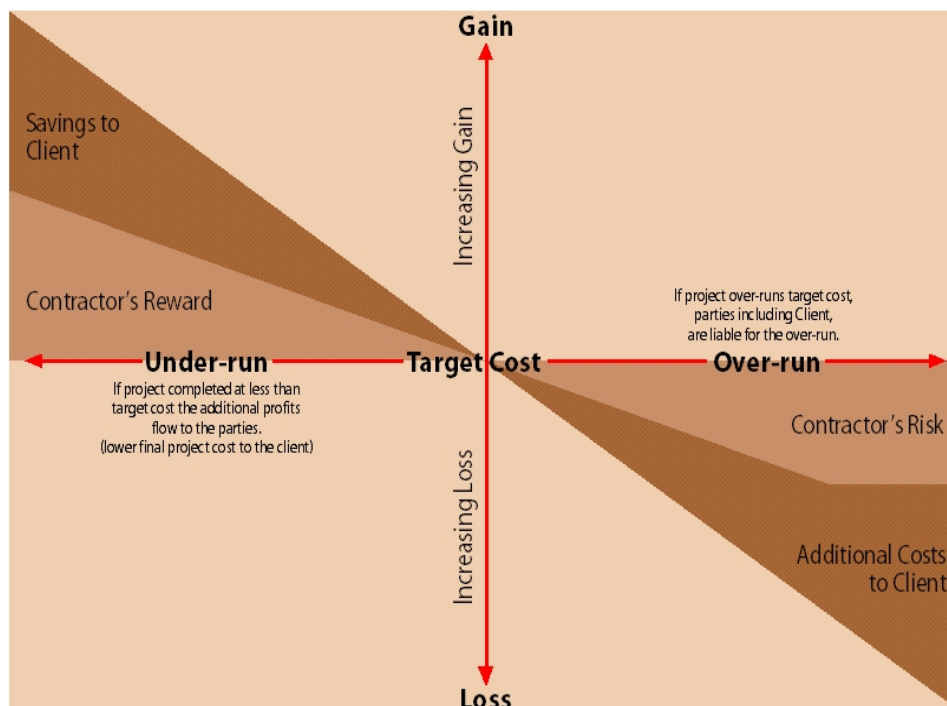
i. Option C (with activity schedule) and Option D (with bill of quantities)

Target cost contracts are appropriate where the scope of Works is sufficiently, but not fully, developed for the Contractor to be able to price the Works.

The Contractor tenders a target price based on either the activity schedule or the bill of quantities. The target price includes the Contractor's estimate of Defined Cost plus a Fee for his overheads and profits (Price for Work Done to Date). During the

Schedule 1 - The NEC

course of construction, the Contractor is paid the Price for Work Done to Date rather than by reference to the activity schedule or the bill of quantities. The financial risk of any total cost exceeding or falling below the target price will be shared between the Employer and the Contractor as agreed between them. Shared financial incentive encourages cooperation and minimises costs.



However, this form of contract requires greater involvement by the Employer in the day-to-day management of the project and unfamiliar administrative procedures may lead to higher administrative costs and a drain on accounting resources. As such, this option is more appropriate for parties who have previous experience using other NEC3 main options or parties who have readily available technical and managerial expertise.

Generally speaking, Option C is less likely to be appropriate for low value and low risk projects. However, the Hong Kong Government has selected Option C for its first pilot project by the DSD as a dedication to gaining wider experience of the NEC3 despite the low risk nature of the project.

g. Cost reimbursable contracts

i. Option E (Cost reimbursable contract)

The Contractor is paid the Defined Cost plus his tendered Fee for his off-site overheads and profit. He carries minimal risk and is subject only to limited constraints sufficient to motivate efficient work.

This form of contract is suitable where time or quality is an overriding priority or where the scope of works is not sufficiently defined but an early start to construction is required. There is little incentive for the Contractor to minimise costs during construction.

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ii. Option F (Management contract)

The Employer carries the risk of increases in cost in a management contract. This option is suitable for contracts with a high number of specialist contractors. Works subcontractors are paid on prime cost and the Contractor tenders preliminaries and a fee percentage.

iii. Secondary Options

After the main option is decided upon, any of the secondary options that are available for the chosen main option may be selected to further refine the contract strategy.

The secondary options are set out as follows:

1. Option X1 – Price adjustment for inflation (used only with Options A, B, C and D)
2. Option X2 – Changes in the law
3. Option X3 – Multiple currencies (used only with Options A and B)
4. Option X4 – Parent company guarantee
5. Option X5 – Sectional Completion
6. Option X6 – Bonus for early Completion
7. Option X7 – Delay damages
8. Option X12 – Partnering
9. Option X13 – Performance bond
10. Option X14 – Advanced payment to Contractor
11. Option X15 – Limitation of the Contractor's liability for his design to reasonable skill and care
12. Option X16 – Retention (not used with Option F)
13. Option X17 – Low performance damages
14. Option X18 – Limitation of liability
15. Option X20 – Key Performance Indicators (not used with Option X12)
16. Option Z – Additional conditions of contract

iv. Other Sections of the NEC3

In addition to the Core Clauses, Main Options and Secondary Options, the NEC3 family also contains dispute resolution Option clauses (Options W1 or W2), a Schedule of Cost Components and the Contract Data formats.

The Contract Data documents identify items such as completion dates, interest rates and price adjustment indices to be used. Also contained is the Works Information (i.e. specification and drawings).

Another document included in an NEC3 contract is the Site Information document. The successful tenderer's tender programme may also be incorporated as the Accepted Programme.

7. Schedule 2 – Practical Examples of the Application of Partnering in Hong Kong

The following examples have been provided to the Task Force:

1. Commercial/office developments
 - Chater House [#] – Case Study 1
 - Cambridge House, Taikoo Place ^{*}
 - One Peking Road ^{*}
 - Three Pacific Place ^{*}
2. Hong Kong Housing Authority
 - Residential Development in the Tuen Mun Area ^{*}
 - Choi Yuen Estate Shopping Centre (situated within a public housing estate adjacent to the Sheung Shui KCR Station) ^{*} - Case Study 2
 - Completion Contract for the Construction of Fanling Area 36 Phase 2 – Case Study 3
3. Airport Projects
 - North Satellite Concourse
 - East Hall Extension, Terminal Building [#]
 - Central Concourse Modification Works – Case Study 4
 - Tradeport Logistics Centre (HK International Airport's first dedicated logistics facility ^{*})
4. Infrastructure projects
 - Route 8 - Traffic Control and Surveillance System (TCSS) – Case Study 5
 - Improvement works to Castle Peak Road between Ka Loon Tsuen and Siu Lam ^{*} - Case Study 6
5. MTRCL Projects
 - Tsim Sha Tsui Station Extension
 - Tseung Kwan O Extension [#]
 - Lok Ma Chau Viaduct (LCC 202) (KCRC) ^{*}
 - Lok Ma Chau Terminus (KCRC) ^{*}
 - Contract 552A (Four Tracking Project – Signalling)
 - Contract 601 (Hang Hau Station and Tunnels)
 - Contract 654 (Platform Screen Doors)
6. The Orchards, Quarry Bay ^{*}
7. Conversion of Lei Yue Mun Fort into a museum
8. TKO Technology Park ^{*}
9. Two International Finance Centre ^{*}
10. Mandarin Oriental
11. CLP Cable Tunnels

[#] For further information, refer to the Partnering Guidelines for construction projects in Hong Kong published by APM HK.

^{*} For further information, refer to the Demonstration Projects website:
<http://www.hkci.org/projects.aspx>

8. Case Study 1: Chater House

Discipline: Building in Private Sector

Form of Partnering: Guaranteed Maximum Price

a. Project background

Chater House is a 30 level commercial building of international Grade A standard located in the heart of Hong Kong's Central Business District. The site of Chater House was formerly occupied by Hongkong Land's Swire House.

Design, development and construction of the project spanned from 1996 to mid-2002. The construction phase was undertaken under three contracts comprising demolition of the existing building, construction of the foundation and construction of the above-ground superstructure elements.

b. Partnering set-up

Set against a backdrop of declining standards in local construction, adversarial client/contractor relationships and indifference towards progressive thinking, the Client set out to create an environment that encouraged the development of new ideas, new ways of working and new technologies, with a vision to achieving the elusive win-win outcome.

Hongkong Land recognised the opportunities and challenges set by its first major development in Hong Kong's Central Business District in the last 15 years. They knew and understood their market and their customers. Traditional core values of excellent quality, on-time delivery and strict budget management still held true, but these attributes needed to be augmented by improved product focus and better alignment with tenant requirements. Moreover, the building needed to maintain its competitiveness throughout its life cycle, adapting to the changing requirements of the tenants for highly specified spaces.

Hongkong Land wished to follow a procurement route that complimented the Partnering Strategy. Traditional forms of building contract were reviewed and discounted as being poorly suited to the open and transparent working relationship being fostered by Hongkong Land. Referring to a number of research documents such as Choices in Building Procurement and Contract Selection and the Latham Report, Hongkong Land followed a direction of cooperative contracting that would achieve the following objectives:

1. To achieve a competitive price;
2. To retain control over the design and construction processes;
3. The procurement route must be fast-track;
4. To maximise Value for Money;
5. To achieve a level of quality in line with the rest of Hongkong Land's portfolio and its expectations for the new building;
6. A transfer of risk and a sharing of reward with the Main Contractor.

A hybrid contract based on the standard negotiated form but capped in price and with a fixed completion date had been used successfully on the Client's two previous developments: 1063 King's Road, Quarry Bay (Hong Kong) and One Raffles Link (Singapore).

Case Study 1: Chater House

Negotiations were pursued at the tender stage with the Client's preferred contractor, based around the following documents:

1. Guaranteed Maximum Price (GMP) Methodology
2. Standard Form of Contract (HKICS)
3. Design Documentation
4. Builders Bill of Quantities

During the construction phase, the Client retained control over the design process and in so doing circumvented any natural tendency by the Contractor to adopt a lowest-cost approach (as opposed to a value-for-money approach) to maximise his share of potential cost savings.

All remaining nominated and domestic subcontract works packages were competitively tendered; the former principally led by the Client's consultant team, the latter by the Main Contractor. The process of subcontract procurement was considered to be a success with the Client achieving his expectations in terms of quality and performance while the Main Contractor had the opportunity to take part in a selection procedure that would ideally result in the appointment of a subcontractor whose method of working most closely matched his own and the resolution of interface omissions between packages.

Crucial to the GMP was the establishment of an adjudication process as well as a committee comprising the Client, Main Contractor and Quantity Surveyor, who would report on cost variations and agree on whether the variation was a design development or a scope change, which would adjust the value of the GMP.

For a successful GMP, there must be a genuine willingness to achieve cooperation or partnering between the parties. A definite change in mindset is required, as well as the ability to see the overall picture and a flexibility and willingness to entertain the viewpoints of all parties. Of equal importance is the impartiality of the Quantity Surveyor within the Adjudication Committee to recommend the classification of variations as design development or scope change.

c. Project outcome

Hongkong Land was keen to support its GMP methodology with a formalised understanding between itself and the Main Contractor to maximise the potential of the working relationship and to achieve common goals.

Hongkong Land was encouraged by previous experience on Partnering Contracts used by the MTRCL and the Housing Authority and adopted Partnering as a complimentary strategy to its GMP strategy. The formalising of shared objectives that both the Client and Main Contractor considered to be critical to the success of the project had established a common basis of understanding between the two principal stakeholders.

The team conducted self-assessments on various criteria of the partnering performance throughout the superstructure contract. Except for the criteria of paperwork generation, the other three criteria of (i) achievement of high quality, (ii) utilising and enhancing relationships and (iii) job satisfaction achieved high scores. The final Partnering Workshop concluded that the partnering approach had been successfully implemented on the Chater House project.

9. Case Study 2: Choi Yuen (Shopping Centre) Phase 2

Discipline: Building in Public Sector

Form of Partnering: Non-contractual partnering

a. Project background

Choi Yuen Phase 2 required a complete renovation of an existing 22 year old, 11,157 m² shopping centre at the Choi Yuen Estate and 3,833 m² of new commercial floor area on top of the building. The contract period was 16 months and the project was completed on 22 June 2002.

The construction of Choi Yuen Phase 2 was carried out in the heart of an existing housing estate community comprising over 5,000 households. The existing shopping mall had to remain in operation throughout the renovations with minimal disturbance to users and pedestrians, minimum environmental nuisance to the community and most importantly, maximum safety for project workers and residents. The old mall also created technical considerations for the project team, such as the age of the building, loading limitations for new structures and uncertainty in the as-found situation.

b. Partnering set-up

Given the challenges, both the Housing Department and the Contractor quickly adopted the partnering approach in order to involve all potential stakeholders including the technical team, contractual parties, end users and members of the community.

The Main Contractor co-hosted a Partnering Workshop together with the Housing Department, which was attended by representatives from shop owners, tenants, the Estate Management Office and members of the District Council.

The workshop aimed to obtain support and cooperation from the local community. It acknowledged the problem of diversity and the need to improve better communication with all stakeholders. A mechanism was developed to overcome the adversarial approach, to balance community needs and maintain regular progress of the works. Tools such as the monitoring of customer satisfaction and dispute resolution mechanisms were applied. Very often, timely decisions could be made to respond to potential problems or conflicts found in the process.

c. Project Outcome

The workshop successfully connected stakeholders in a partnering relationship, allowing them to establish a Partnering Charter and from that basis to develop a fully cooperative working environment. Routine customer surveys and dispute resolution mechanisms revealed high rankings with regards to overall project satisfaction and the meeting of goals. Partnering overcame diversity problems arising from different project stakeholders. The construction works considered the needs of shop owners, tenants, Estate Management Office representatives and the proper operation of a functioning shopping centre without loss of convenience or safety concerns to residents of the estate.

The construction process was not easy. The Partnering approach resolved three situations as demonstrated below:

Case Study 2: Choi Yuen (Shopping Centre) Phase 2

1. With good communication between stakeholders and shop owners and tenants, works situated in front of all shop fronts was arranged without objection. Works were scheduled on non-busy days with a close monitoring on progress. Access to shop fronts was maintained without loss of business;
2. Structural steelwork for shops was carried out with minimum disturbance. Engineering requirements were streamlined with flexibility and cooperation between the consultant, employer and independent laboratory. Use of mechanical means was adopted for work within tight spaces and to achieve speedier completion;
3. Mass underground utilities were discovered across the proposed location for the foundation work. The solution was quickly agreed upon through hand-digging trial pits, followed by the timely submission and approval of an engineering solution by the employer/consultant. The partnering process successfully reduced response time and enabled the timely completion of the foundation works.

The use of partnering achieved the early completion of a large shop (1,000 m²) five months in advance, which enabled early letting.

The project hoarding was used to promote community involvement, awareness and ownership in improving the immediate environment. Through the 'Let's Paint the Environmentally Friendly Hoarding Campaign', 130 paintings prepared by students from six primary schools in the Sheung Shui district were posted along the hoarding for public viewing and promotion. The event turned a dull metal hoarding into a meaningful and beautiful piece of community work.

The partnering approach encouraged innovative methods to achieve enhanced goals. Structural steelworks were prefabricated off-site to reduce noise and air pollution at the construction site as well as to neighbouring tenants. Double external screening protection was used during the installation of the mosaic tiles, reducing dust contamination. Overall, there was zero environmental conflict throughout the project.

The construction site was part of the Choi Yuen Shopping Centre and situated in the heart of the Choi Yuen Estate. Safety was a concern for shoppers, pedestrians, residents and workers alike as improvement works were carried out in close proximity to these groups. Through the partnering approach and incentive award scheme, the Contractor achieved a zero incident rate for 14 months and zero safety conviction, for which he received two awards from the Labour Department and the Occupational Health and Safety Council.

10. Case Study 3: Completion Contract for the Construction of Fanling Area 36 Phase 2

Discipline: Building in Public Sector

Form of Partnering: Non-contractual partnering

a. Project background

Fanling Area 36 Phase 2 was a completion contract which comprised the construction of two standard New Harmony 1 domestic blocks with 1,598 flats, one open car park providing 112 private parking spaces and two kindergartens consisting of 12 classrooms. The project commenced on 17 May 2006.

The project was a re-entered contract by the Housing Authority (HA) on 17 February 2006 due to the default of the previous main contractor. The project team had to ensure that all the loose ends left by the previous contractor were properly dealt with to the satisfaction of all the parties concerned, including the previous nominated subcontractors (NSCs), domestic subcontractors (DSCs) and suppliers under the previous building contract as well as all newly awarded subcontracts.

b. Innovative arrangements and measures

As a public body, the HA was mindful of the potential social unrest that might arise from the unpaid subcontractors and workers. The HA's main objective was to minimise loss to society within the contractual and legal frameworks and to ensure the continuity of works.

In consultation with various stakeholders, namely the Hong Kong Construction Association (HKCA), Hong Kong Federation of Electrical and Mechanical Contractors (HKFEMC) and Hong Kong Construction Sub-Contractors Association (HKCSCA), the HA devised a number of arrangements and measures to achieve its objectives:

1. Shortlist of tenderers with good performance records as candidates for the position of Main Contractor;
2. Renomination of the original NSCs;
3. Re-employment of at least 80% of the original DSCs;
4. Establishment of new measures for the protection of wages.

c. Partnering set-up

The Housing Department project team consisted of in-house professionals and site staff from various disciplines. The project team and the Contractor's construction team participated together in a partnering workshop on 8 August 2006 where objectives and potential obstacles with regards to the works were identified. The performance criteria of 'Co-operation/Trust/Respect, Harmony, Quality, Safety, Environmental, Programme and Problem Solving' were agreed upon and fully implemented as key result areas to which all parties were committed, on top of the primary goal of achieving the timely completion of the project.

This project was also one of the earliest contracts containing the provision of Dispute Resolution Advisor (DRAd). The DRAd attended monthly site meetings giving advice on contractual issues so that potential disputes could be resolved at an early stage.

Case Study 3: Completion Contract for the Construction of Fanling Area 36 Phase 2

d. Project Outcome

The project was completed on 29 February 2008 – seven days in advance of the extended contract completion date. With the concerted effort of the contract team, mutual trust was developed to achieve the objectives set out in the partnering workshop, and goals were reviewed at regular intervals at monthly site meetings. With a cooperative spirit developed through open communication, there were no claims arising from disputes and a record of zero site accidents.

A Labour Relations Officer (LRO) was introduced into the project after the contract was awarded to monitor wages on site. With the active support of the Contractor, enhanced measures for the payment of wages and monitoring were implemented.

e. Summary

The HA's complete involvement was critical in ensuring the effective implementation of the Completion Contract. The entire process was conducted with the concerted effort of all parties, which was instrumental in building trust and mutual understanding.

Fanling Area 36 Phase 2 is an excellent example of partnering and equitable risk-sharing in construction contracting and a good demonstration of how trust can promote cooperation during a crisis. These outcomes could not have been possible without the combined ability of the parties to appreciate the benefits derived from a pain share/gain share ideology.



香港房屋委員會
Hong Kong Housing Authority

中國建築工程(香港)有限公司
China State Construction
Engineering (Hong Kong) Ltd



粉嶺 36 區第二期建築工程

(合約編號：20060017)

夥伴合作約章

此約章為我們團隊的承諾：我們會本著緊密合作、和諧共事及即時共同解決困難的精神，成功完成粉嶺 36 區第二期建築工程合約。

憑著互相尊重和信任，我們決心達成以下的目標及為此感到驕傲：優質的工程、安全及有環保意識的地盤、準時完工、滿意的顧客服務及各方多贏的局面。



2006年8月8日
 此伙伴合作約章並非法律文件，各與會人士乃本著彼此的信任及友好而立此約章。所有工程細則仍需合乎此工程的合約文件。

11. Case Study 4: Central Concourse Expansion at the HK International Airport

Discipline: Building in Public Sector

Form of Partnering: Non-contractual partnering

a. Project background

This project was designed to provide an airline lounge and office accommodations at the arrivals level along the central concourse of the main terminal building. The main challenges were the need to expand the building by approximately 3 m in width along a 700 m length above existing apron level tenant accommodations, as well as working amidst a busy operational environment.

b. Partnering set-up

The contract was awarded to the Main Contractor in December 2007 under the Hong Kong AA's normal form of Building Contract, which adopts non-contractual partnering. Under this type of contract, the Employer is committed to managing the project on a partnering basis with a view to establishing a cooperative working relationship, maintaining aligned objectives, improving decision making processes, engaging in joint problem solving and seeking continuous improvement with shared gains.

An independent partnering consultant was appointed and a start-up workshop was held soon after the contract was awarded. This included representatives of the Employer and the Contractor. Care was taken to include all stakeholders of the AA and not just the Projects Department. Similarly, the Main Contractor included its major subcontractor at the workshop.

The workshop gave all stakeholders the opportunity to present their aspirations for the project and to understand the main objectives and concerns of the other parties. A partnering charter was produced which set out the key common goals for the project.

A number of key aspects of the project were identified at the workshop:

1. To ensure that the project is as inconspicuous as possible within the building
2. To seek opportunities to improve construction phasing
3. To incorporate tenant requirements into the programme
4. Minimise change

c. Project outcome

The project was completed on time and within budget. There was more change than was desirable mainly due to design issues. However, because the AA and the Contractor took a positive attitude to managing the changes that were necessary, no major consequences arose. A joint problem solving approach was adopted to overcome technical issues in a manner which sought the best outcome for all parties. Inside the building the use of a high quality hoarding and its regular maintenance rendered the works "invisible" to the public, and there were no complaints of any adverse impact on operations. One of the main challenges for the Contractor was with the external works, where they were only allowed to affect a limited length of the facade at any one time due to its impact on the main apron road and the tenants who occupied the accommodation

Case Study 4: Central Concourse Expansion at the HK International Airport

under which the extension to the building was being constructed. By working together and involving the AA's operations staff, it was possible to release double the original length of work front which greatly eased the difficulty of the programme and contributed in a major way to completion on schedule. This is an example of a situation that saw the AA staff and the Contractor operating as a team to the benefit of the project as a whole.

The AA and the Contractor also worked closely together with the ramp handlers and tenants occupying the space below the main works area to optimise the extent of hoarding necessary for the work. They managed to substantially reduce the extent originally envisaged.

d. Summary

This was a difficult project to execute in an operational environment. With a cooperative attitude from all parties from the outset, which was maintained throughout the project, a successful outcome was achieved. Effective communication between the AA, the Contractor and those affected by the works also played a major part in this result.



**P384 Central Concourse Modification Works
PARTNERING CHARTER**

Project P384 will be a success. We are personally and collectively committed to utilising partnering to deliver the project based upon a foundation of mutual trust and respect with the following key common goals:-

- Achieve a safe environment - Zero fatalities – Accident Frequency Rate <7
- Ensure a safe environment for passengers and airport business partners
- To complete the works on or before the key dates / milestones
- Communicate effective "win-win" solutions
- Meet financial objectives of all parties
- Satisfy the required quality standards and minimize defects
- Satisfy business partners needs
- Develop long term relationships
- Minimize disruption to airport operations



4 March 2008

12. Case Study 5: Route 8 Traffic Control and Surveillance System (TCSS)

Discipline: E&M in the Public Sector (Infrastructure)

Form of Partnering: Non-contractual partnering

a. Project background

The Route 8 TCSS is essential to the operation of Route 8 between Tsing Yi and Shatin – the Tsing Sha Control Area (TSCA). The scope of the TCSS Contract includes design, supply, installation, testing, commissioning of central facilities, central software, field equipment and communication facilities for the TSCA TCSS, and provides interfacing facilities with the existing Tsing Ma Control Area TCSS. The main challenges revolved around the large number of works interfaces within the construction sites consisting of eight concurrent civil engineering contracts along Route 8, timely access to the TCSS works and programme, and the laying of the optical fibres that form the trunk communication network of the entire TCSS in particular.

b. Partnering set-up

The TCSS contract did not stipulate any requirement for partnering, and as such, no partnering set-up had been considered during the early stages of the contract after it commenced on 12 October 2004. As the works progressed, HyD, the Engineer and the Contractor were proactive in resolving programme issues arising from site access problems. Foreseeing continuous interfacing issues ahead, which could have had major implications to the works progress and programme, HyD instigated informal partnering meetings with the Contractor in early 2006.

The informal partnering approach was first adopted in early 2006 to resolve the crisis which occurred during stage one of the works, where all specified access dates to the civil engineering contract sites were forecast to be delayed due to unforeseen circumstances. Facing such a crisis, the management of HyD, the Contractor and Consultants agreed to adopt the informal non-contractual partnering approach to jointly consider mitigation measures to minimise the implications of the access delays. The main objectives were to identify the most appropriate work sequence and arrangements based on site situation. The right level of resources was also identified to minimise risk and cost.

c. Project outcome

With regards to the site access problems, the Contractor was cooperative and identified areas and civil provisions where the TCSS works could proceed in phases on small portions of the site. The HyD and Consultants were also involved in the coordination of site arrangements under the various civil engineering contracts. By adopting a pragmatic approach rather than adhering rigidly to the access conditions stipulated in the contract, the impact of the site access problems was substantially reduced. By redefining the work sequence, an early road opening date was secured and the right level of resources was determined to minimise cost.

Case Study 5: Route 8 Traffic Control and Surveillance System (TCSS)

d. Summary

As the TCSS Contract did not specify partnering, it had not gone through any of the formal partnering procedures. It was coincidental that the three parties involved in this contract had past experience with partnering, and the right decision was made to adopt partnering in dealing with the crisis. More importantly, all three parties possessed a positive and cooperative attitude in tackling the problems encountered to the best of their abilities. It would have been preferable had the contract specified partnering so that the parties would have gone through the formal partnering procedures under the proper guidance and assistance of a facilitator. However, notwithstanding this, the project outcome was still positive.

13. Case Study 6: Design & Build of Improvement to Castle Peak Road

Discipline: Civil in Public Sector (Infrastructure)

Form of Partnering: Non-contractual partnering

a. Project background

The contract concerned the design and building of improvements to Castle Peak Road between Ka Loon Tsuen and Siu Lam. The employer was the HyD. The project included a new dual two-lane viaduct over the sea to provide a direct link from Tai Lam Kok to Siu Lam roundabout. The existing Castle Peak Road was to be reconstructed to serve as a local distributor after the viaduct was opened to traffic. The existing Castle Peak Road from Tai Lam Kok to Ka Loon Tsuen was to be widened into a dual two-lane carriageway.

The contract was awarded to the Main Contractor in March 2004.

b. Non-contractual partnering

The stakeholders realised the challenges the project presented in terms of its complexity, public concerns and the rearrangement of the existing heavy traffic flow during construction. In expectation of a successful outcome, the stakeholders decided to adopt non-contractual partnering to manage the project.

An independent partnering consultant was jointly appointed to facilitate the start-up partnering workshop on 25 June 2004.

To start the workshop, the facilitators introduced the principles of partnering and why they could improve the outcome of a project. Participants were encouraged to express their concerns, their objectives and perceived barriers.

Business exercises were organised to simulate some of the underlying shortcomings of traditional business practices and how they could be overcome with improved communication and cooperation.

During the final stages of the workshop, a set of common objectives were agreed upon and set into a partnering charter. Every participant signified in the charter their commitment to achieving the objectives set out.

The mutual objectives were:

1. Set a good example for D&B projects;
2. Timely completion;
3. Safety target to be achieved;
4. Environmentally friendly outcomes;
5. Good working relationships;
6. Gain experience, develop staff;
7. Maximise shared gains; and
8. Complete within budget.

Case Study 6: Design & Build of Improvement to Castle Peak Road

c. Project outcome

The project was completed two weeks ahead of schedule and within budget. The consultants had afforded maximum feasibility for the designer to develop engineering solutions best suited to the contractor's construction expertise, e.g. the new road alignment, minimising movement joints and maximising the use of precast elements. It generated win-win benefits for both the employer and contractor and led to the satisfactory completion of the project.

Both safety and environmental targets were met. The contractor won several prestigious awards including the Green Construction Contractor Gold Award from the 2005 Hong Kong Eco-Business Awards, the Merit Award from the Considerate Contractor Site Awards as well as the Bronze Award from the Outstanding Waste Management Performance Grand Awards.

Since the completion of the project, traffic flow along Castle Peak Road has significantly improved as an alternative route now diverts the congestion from Tuen Mun Road.

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Key Characteristics of Non-Contractual Partnering, Contractual Partnering and Alliancing

	Non-contractual Partnering	Contractual Partnering	Alliancing
Application	<p>Traditional Contract:</p> <ul style="list-style-type: none"> Usually begins after the contract is awarded <p>Alternative procurement methods:</p> <ul style="list-style-type: none"> GMP Contract, Target Cost Contract Complicated projects require the early involvement of the Contractor in the design and procurement process Management Contracting Contracts, Construction Management Contracts 	<ul style="list-style-type: none"> Large, complex and high-value projects that require close cooperation between the parties Projects that involve multidisciplinary aspects, have major programme constraints or risks, do not have the scope/design fully developed at the time of tender and which anticipate major technical risks 	<ul style="list-style-type: none"> Large and complex projects where the specific output requirements are less defined Projects that benefit from innovation Risks that are difficult to define, explore or understand, face significant time constraints or involve a high level of technical or execution risks and interface issues Projects in which technical solutions or scope are not sufficiently understood at commencement Timing deadlines and parallel activity processes can be followed rather than sequential programming Project costs are above a certain threshold Best technical solution is not apparent prior to the involvement of construction team Not applicable for: <ul style="list-style-type: none"> Small projects which are fully scoped and designed Projects where the joint allocation of risk is unacceptable to the client
Means of Dispute Resolution	Follow traditional contract means e.g. mediation, arbitration, litigation	Adjudication provision, in the case of NEC3, resolving disputes as they arise	Introducing a 'no blame, no dispute' culture, where disputes are resolved WITHIN the alliance

<p>Contracting Method</p>	<ul style="list-style-type: none"> i) Separate non-contractually binding partnering charter; and ii) Cultural and behavioural change 	<ul style="list-style-type: none"> i) Amending traditional contracts to be more partnering-friendly; or ii) Full standard form partnering contracts, e.g. NEC3, JCT Constructing Excellence, PPC 2000 	<p>Formation of a virtual organisation in which no real distinction exists between the design team, construction team and contract administrators</p>
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