Joep Athmer, Ben Hamer, Tim Kersley and Phillip Sanderson

Partnering: The Right Procurement Tool for Risky Contracts

Abstract

Partnering has been increasingly used both in the UK and internationally as a means to facilitate a proactive approach to problem solving as a project team rather than adopting a reactive, adversarial approach commonly associated with the more traditional forms of contract.

The Environment Agency, Halcrow Group Ltd and Van Oord UK Ltd are partners who have been active in promoting the use of partnering type procurement, design and construction since 1996. All partners participated in three distinct 'Frameworks' for the programme of flood defences in England and Wales. Namely, the National Environmental and Engineering Consultancy Agreement; the National Contractors' Framework; and, the Combined Beach Management Framework. These 'Frameworks' apply the principles of Partnering by using the tools available within the New Engineering Contract (NEC), comprising both the Professional Services Contract (PSC) and the Engineering and Construction Contract (ECC).

The authors, through their respective organisations, have been actively involved in promoting and practising a partnering philosophy to the procurement and construction of various flood and coastal schemes in the United Kingdom.

In this article, the historic events that have influenced the UK flood and coastal construction industry in adopting a partnering ethos are presented.

The mechanics of partnering procedures are discussed and risk management is examined in detail. Auditing, value for money and cash forecasting are analysed together with strict reporting and early warnings of potential and real problems ahead. How team members relate to each other and to the public and to other stakeholders is also described. Finally, some relevant examples of partnering projects successfully completed are presented.

Introduction

Despite the recent progress, partnering in the UK continues to mean different things to different people. The difference between "project" and "strategic" partnering is fundamental and could reflect the difference between a client's desire to partner on a short-term or long-term basis.

There are a number of purists who would argue that "project partnering" is a contradiction in terms: indeed, the 1991 National Economic Development Council (NEDC) Report adopts a definition of partnering, which requires that partnering be a "long-term commitment". A proactive partnering approach opposed to a reactive, sometimes adversarial approach certainly gives many clear advantages. These include better forward planning of resources, better cost control and value for money. Partnering should be voluntary and willing on all sides, based on joint ownership of common objectives and commitment.

Figure 1. Catastrophic flooding of the south of Holland in 1953 resulted in a long-lasting partnership between client, engineers and contractors to build effective flood defences.

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With more than 27 years experience, Joep Athmer has worked on projects ranging from large reclamations such as Chek Lap Kok, Hong Kong to offshore platform installations in the Beaufort Sea, Canada. He graduated in Civil Engineering from the College of Advanced Technology, Utrecht (1976) and in Business Administration from Breda (1989) both in The Netherlands, but has primarily lived and worked abroad. He is presently Managing Director of Van Oord UK and Ireland.

Ben Hamer

Graduated in Oceanography with Mathematics at Southampton University in 1989, Ben Hamer is a Chartered Engineer and a member of the Institution of Civil Engineers. Presently an Associate Director with Halcrow Group Ltd, he is responsible for delivery of coastal and estuarial engineering projects in England and Wales. Prior to joining Halcrow in 1995, Ben worked with HR Wallingford and in local government in Dorset, England.

Tim Kersley

Tim Kersley studied at the University of Plymouth and obtained BEng (Hons) and MICE (CEng). Tim has 14 years experience in Maritime Construction and Supply Chain Management. He has worked for 9 years, first as a Project Manager, then as Commercial Manager, and now as Operations Manager, all positions within the National Capital Programme Management Service for the Environment Agency.

Phillip Sanderson

Phillip Sanderson graduated from Portsmouth in 1980, was awarded the HSE Part 1 Offshore Air Diver Certificate in 1982 and became a Chartered Member of the Institution of Civil Engineers in 1985. He has been the Resident Structural Engineer at the Brighton Palace Pier, worked with Mobell Marine and with Geoffrey Osborne Ltd. He joined Dutch Marine Contractor Van Oord UK Ltd in 1988. Since April 2004 he has been a self employed Consulting Engineer.

The partnering approach to procurement of Flood and Coastal projects in the UK has been seen as generally successful and is becoming, although slowly, acceptable in other countries. It is seen as the establishment of long-term arrangements between the parties involved with competent individuals carrying out the execution as one team.

History of Partnering in Marine Contracts

Whilst the initiative in the UK for the New Engineering Contract (NEC) dates back to 1985, it was only subsequent to Sir Michael Latham's report "Constructing the Team" in 1994 and the publication of the second edition of the suite of NEC Contracts in 1995, that clients in both the public and private sectors really began adopting it.

Its utilisation was further encouraged after Sir John Egan's report "Rethinking Construction" in 1998, which amongst other things espoused the benefits of all parties involved in the delivery of a project acting in a "spirit of mutual trust and co-operation".

Contractors working in the field of marine civil engineering infrastructure have historic experience in supply chain partnerships. This has developed from "must-must" situations or events. "Only disasters make people change".

For example, in 1953 the massive storm and North Sea surge were catastrophic and 2000 people were lost as a result of floods in the Zealand, in the south of Holland. A law in the Dutch Parliament was passed to ensure the swift, efficient, raising of flood defences. Client, consulting engineers and contractors were encouraged to work together in partnership by the Government. "Join Hands" was the rallying cry and was effective in bringing together all parties to complete the advanced flood defence works that have served Holland so well since that time (Figure 1).

In 1997, the Water Industry in the UK was many years ahead of flood defence in the procurement of projects using partnering philosophy. For example, by combining three new outfalls at Cambois, Hendon and Horden, Northumbrian Water were able to save money by agreeing favourable terms for an efficient single mobilisation of expensive marine plant. After a detailed assessment process, which included a major focus on the attitudes and values both consultant and contractor exhibited towards partnering, a design and construct alliance was formed between all parties. Risks were identified early, and managed by those best-placed to mitigate their effects. Fundamental issues addressed were joint objectives, development of appropriate behaviours, and agreement to joint problem solving

processes. Early contractor involvement resulted in custom-made site investigation saving £350,000, and other value management techniques were used to assess suitability of design. The outfall pipe at Horden was pulled from offshore through a tunnel and pre-dredged trench so avoiding the need for an expensive cofferdam.

Van Oord UK Ltd ACZ had been successful on a number of large outfall schemes working with new forms of target based Conditions of Contract within a Partnering Framework. The ECC is particularly well-suited to partnering arrangements, as it seeks to minimise disputes, encourage good working relationships, and stimulate effective management. Timely communications, and the adoption of a forward-looking perspective, to identify and resolve potential problems before the financial and programme implications are actually encountered are the principal benefits of this contract form. A payment percentage for profit and overhead is agreed between the parties, and can then be applied to a transparent analysis of actual cost. This both reflects the client's awareness that contractors require appropriate profit margins to remain in business, and provides the client with the confidence of value for money that can only be secured by an understanding of cost build-ups. The success of this style of working led Van Oord UK Ltd to consider its application to flood and coastal projects.

The Environment Agency for England and Wales commenced a series of new procurement "pilot" projects in 1998. This work sought to explore a number of ways in which more productive "Partnering" relationships could be realised. The progress of the Pilots was actively monitored and measured enabling the Agency to identify a preferred option. This led to the launch of the Agency "New Procurement Strategy" in 2000. The strategy seeks to radically change the Agency relationship with its suppliers and is founded on the principle of alignment of Agency and supplier objectives. This adopts the ECC form of contract under pinning a suite of five-year framework agreements.

Halcrow has been involved in partnering style of contracts within the coastal defence industry since 1996, when they assisted the Agency in developing a novel procurement approach for the second stage of the Happisburgh to Winterton sea defence project in Norfolk, UK; the first stage had resulted in an arbitration case between employer and contractor. The partnering project for stage two of this nearshore reef and beach recharge project was based on the Institution of Civil Engineer's 6th Edition construction contract, and was supported by a "Partnering Charter" and a detailed Memorandum of Understanding setting out the results of negotiations between client (the Environment Agency) and contractor. Since that time, Halcrow has been involved in a large number of partnering contracts within the marine and other fields of civil engineering, preferring to form long-term (5 years and more) relationships with a number of key clients.

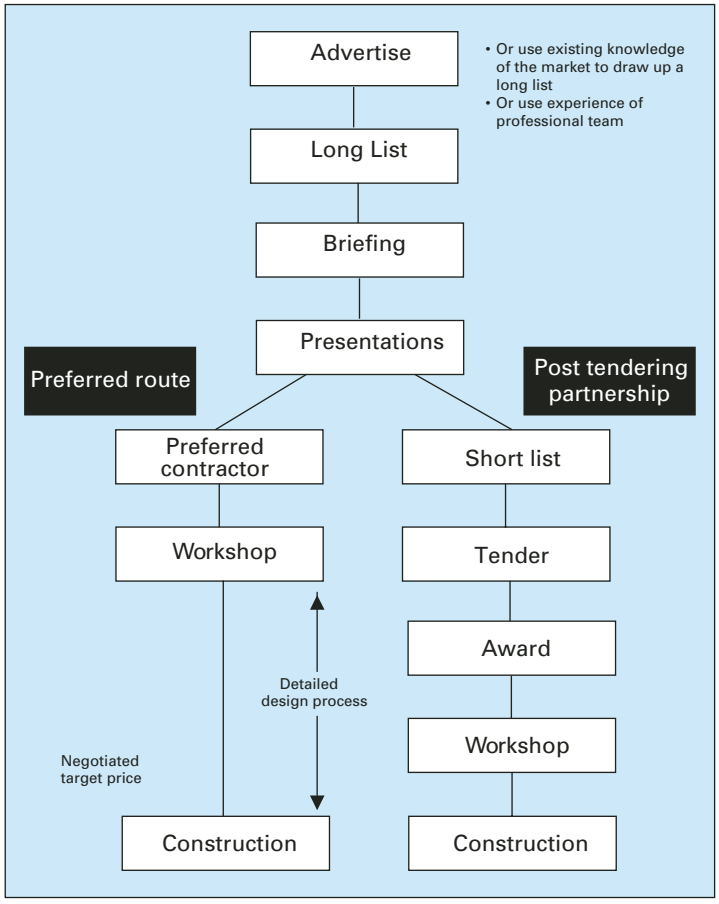


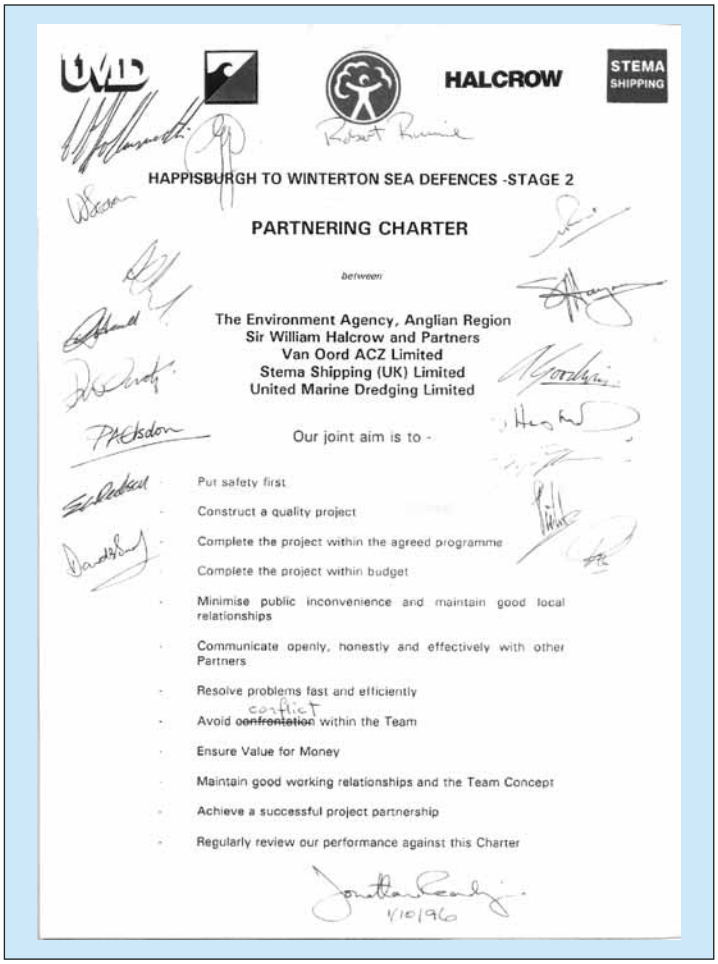
Figure 2. Flow chart for the Partnering Selection Process.

Van Oord UK Ltd undertook their first NEC contract in 1998. In 2000 a significant part of their turnover in the UK was carried out under ECC Contracts and following from its success they strongly promoted the implementation of this Form of Contract to more clients. They have also been advising the Dutch Ministry of Public Works on the benefits of working with the ECC Form of Contract.

Partnering style contractual relationships are most valuable on high-risk construction projects such as those found on Coastal Flood Protection Schemes.

Successful Partnering Practice

By incorporating specialist constructors into a multi-disciplinary team and giving them the opportunity to put forward ideas for better ways of working, clients are finding that there are considerable benefits to be gained. The use of just a few contractors, designers and suppliers means the supply side gains knowledge



HALCROW

STEMA SHIPPING

HAPPISBURGH TO WINTERTON SEA DEFENCES -STAGE 2

PARTNERING CHARTER

between

The Environment Agency, Anglian Region
Sir William Halcrow and Partners
Van Oord ACZ Limited
Stema Shipping (UK) Limited
United Marine Dredging Limited

Our joint aim is to -

- Put safety first
- Construct a quality project
- Complete the project within the agreed programme
- Complete the project within budget
- Minimise public inconvenience and maintain good local relationships
- Communicate openly, honestly and effectively with other Partners
- Resolve problems fast and efficiently
- Avoid ~~confrontation~~ conflict within the Team
- Ensure Value for Money
- Maintain good working relationships and the Team Concept
- Achieve a successful project partnership
- Regularly review our performance against this Charter

4/10/96

Figure 3. Example of a Partnering Charter.

and experience of the client's business and is therefore in a much better position to produce "Best Value". Clients are trying to find partnering contractors with aligned objectives who can give confidence that they are able to provide a quality job, value for money and strict financial control without claims at the end. Lessons learnt add value into the next project (Figure 2).

The consultant will usually produce the conceptual design after consulting with the client and other stakeholders. From the outline design, an outline budget will be produced for approval by the client prior to establishing the method of procurement followed by the "Partnering Team".

The appointment of the client's Project Manager (PM: note that this is not the Project Manager as defined under the ECC, which is a separate role) at an early stage is very important, as is their consistency through the project's life cycle. The client should have such confidence in the ability of the PM that full authority is empowered to the PM. The PM should then select the members of the team on their technical, construction and financial skills together with their belief in the partnering philosophy. Can they work together as one team and consider themselves "one company"?

The PM retains responsibility for all programming, technical and financial issues throughout the duration of the project. Many specialists will require integration into the team and this process must be carefully monitored. A "bad apple" can destroy the good will generated by the rest of the team. People or companies that do not participate openly in the partnering process should be disengaged at the earliest opportunity.

Partnering Charter

The use of a "Partnering Charter" (see Figure 3) is appropriate where the aim is to engender a new approach or attitude to contracting without fundamentally altering the nature of the parties' legal and contractual relationships. The crucial factor is that both the client and contractor together with their advisors have agreed that they wish to work together in an open and non-adversarial way. They have identified aims and objectives and believe that such an arrangement can be mutually beneficial. The Professional Services Contract (PSC) can be used to formally bind the parties together during the pre-construction contract period. It enables the contractor to be paid for his services in the same manner as the consultant. Joint incentives can be incorporated in the process to ensure maximum value for money is promoted in the design and planning.

The ECC "Option C – Target Contract with Activity Schedule" (with a capped Gain / Pain Share) is an option favoured by many Employers and Contractors. In this scenario, the Contractor is paid "Actual Cost" plus a "Fee" and if this is less than the Target Cost; a share of the savings. The so-called "Contractor's (Gain) Share" is however normally capped to limit any unwarranted benefit accruing to the Contractor from a generously established / comfortable Target Cost. In the event that the Actual Cost plus Fee exceeds the Target Cost, then the Contractor is only paid an agreed percentage of the additional cost – the unpaid element being the Contractor's (Pain) Share.

Two realistic examples are as follows:

The Contractor's share percentages and the share ranges are:

Less than 80%	0%
From 80% to 100%	50%
From 100% to 105%	100%
Greater than 105%	0%

The Contractor's share percentages and the share ranges are:

Less than 80%	0%
From 80% to 90%	20%
From 90% to 110%	50%
Greater than 100%	100%

Other options are available from the family of the NEC. Option D is often used for Flood and Coastal Projects in a similar manner to Option C although it has a bill of Quantities instead of Activity Schedule. Clients who maintain an ongoing relationship with their trusted contractor using an "open-book" accounting procedure may use Option E for Emergency Works. The contractor is paid for "The Price for Work Done to Date" for all the three options mentioned above on the basis of "Actual Cost paid plus Fee".

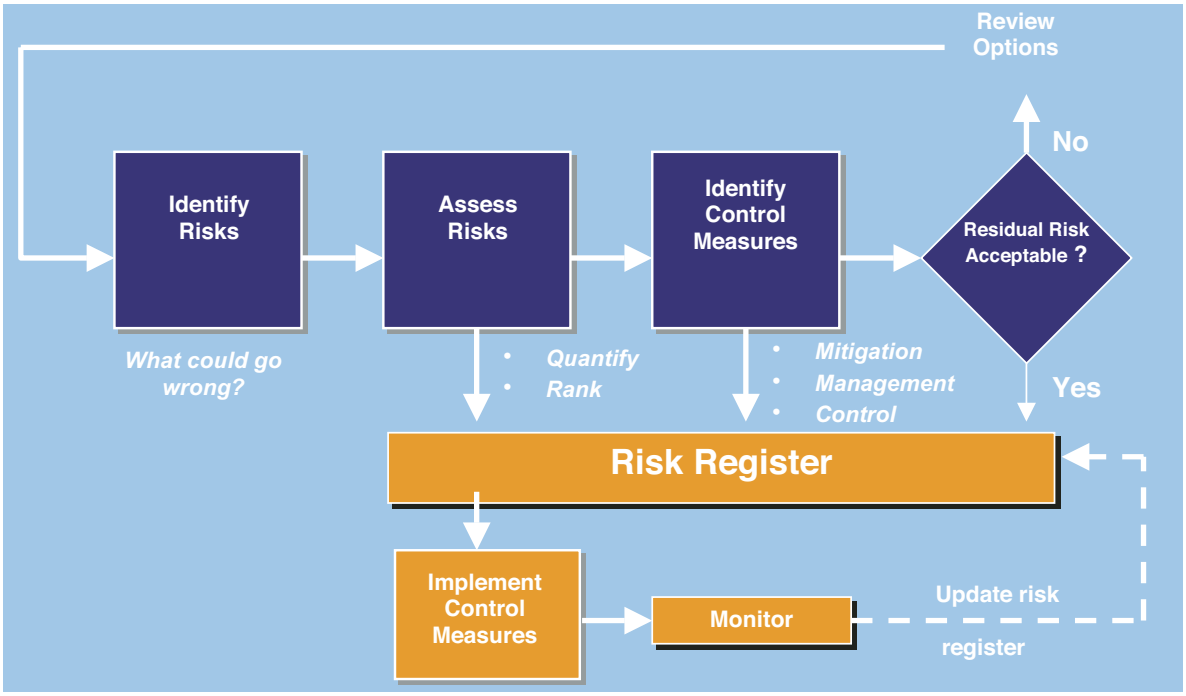
The traditional method has always been, and is often, to let a consultant make a design, ask for the client's approval and then go out to competitive tender. The tender submissions returned are normally based on the client's design and information made available. The tender sum always includes a certain percentage for risk and a number of clarifications, or qualifications, are often included, making it difficult to compare tenders directly. Depending on the negotiations and Contract Conditions agreed both Client and Contractor have a different goal; while the Client wants "as much as possible" for minimum cost, the Contractor looks for the opposite. On top of that both run expensive technical, time and financial risks. Value Engineering (VE), when used correctly, should ensure the client gets best value for his money. The whole team feeds into the design process prior to any construction being undertaken. VE is used to ensure that the designer and contractor engage with other specialists from a very early stage in the process to ensure that the final design is buildable using the most efficient techniques and cost effective resources in a most environmentally friendly manner.

Following a number of estimating and target setting meetings, a "Target Price" should be agreed that is not amended until after the Contract has been signed. "Compensation Events" are events that, if they occur, and do not arise from the Contractor's fault, entitle the Contractor to be compensated for any effect the event has on the "Prices" and "Completion Date". There always will be a need to integrate suppliers and sub-contractors into projects. Frequently their involvement is a result of their specialist capabilities and knowledge of particular fields of construction or product manufacture. Regular weekly meetings with sub-contractors provide opportunities to communicate on all matters. Regular weekly meetings with sub-contractors provide opportunities to communicate on all matters. The Project Team should endeavour to involve the employees of each specialist sub-contractor as part of the Team as early as possible, share their problems and assist in a resolution.

The Management of Risk

The process of risk assessment is the responsibility of the client Project Manager but should be carried out as a Project Team activity. Project budget estimates and target prices should be developed to include for risks (financial and programme). A clear, well-documented differentiation should be made between the client's budget and the contract target. If budgets are set at or close to the contractor's target price, then there is no room for change management, and it is not surprising that compensation events under such circumstances can quickly become points of contention. By agreeing

Figure 4. An overview of the process of risk management.



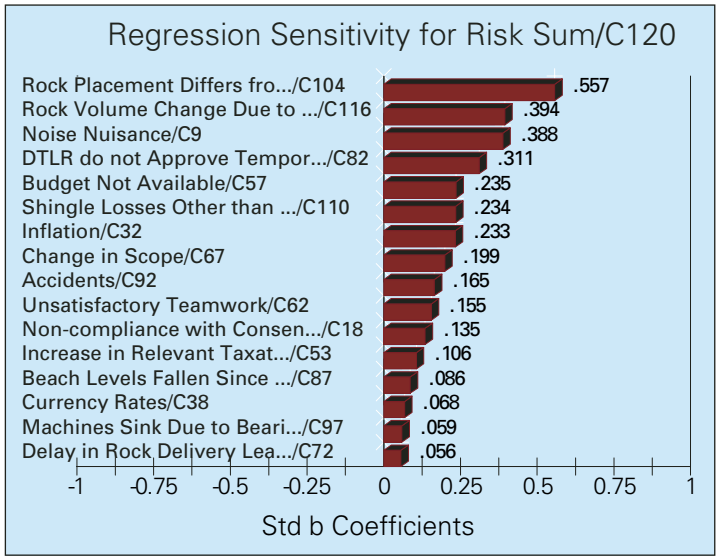


Figure 5. Tornado graph for focusing on dominant hazards.

risks that fall within the target price (i.e. those that would not form compensation events should they arise), and those that lie outside the target but within the client's budget, the full project team have transparent and common understanding of the project constraints and can react to events accordingly.

Risk assessment and management will assist the delivery of sound projects to quality, time, environmental targets and cost. The risk management process should assist in the development of original thought and encourage innovation.

Whilst it is increasingly common, good practice to hold risk workshops in which all parties work together to identify risks on a "Risk Register", it is all too often the case that these registers are then not used effectively as a basis for proactive management of risk. Figure 4 provides an overview of the process of risk management. Frequent areas of weakness include consideration of what is an acceptable level of residual risk (sometimes referred to as "risk appetite"), and the implementation of timely control measures.

Having considered the hazards to the project, consideration is given to how best to mitigate the risk. This may be to directly avoid the risk, to transfer it to another party (often to the contractor by way of the construction contract), to accept it, or to reduce it by taking some action (for example by commissioning site investigation studies in the absence of adequate data).

After this initial screening process, some form of risk quantification or prioritisation should be undertaken, ideally linked to programmed project activities, i.e. there needs to be information available to the project team on which are the key risks at any given time. In this case, rather than reviewing all risks at every progress meeting, which can make the process unfocused and laborious, appropriate consideration of the principal hazards can be given.

The risk management process then requires iteration back to the consideration of mitigation measures, given the information developed on the relative importance of specific hazards. The use of tornado graphs, for example, is very powerful in helping to keep focus on management of dominant hazards. The example provided demonstrates that the density of rock placement has the greatest potential for cost increases, and by applying management effort to the mitigation of this risk (and the next 2-3 hazards on the graph) would have a major impact on the project's success.

By reviewing the risk register and the quantification of key risks at project milestones, risk management becomes a much more valuable mechanism for project delivery than is frequently the case today.

Individual Characters

Putting to one side the technical, academic and professional qualifications, the key to a successful partnership is ensuring the "Right People" are involved. These people must not have contractual hang-ups, but must be enthusiastic and willing to make the success of any partnership. Where possible, it is not appropriate to have staff engaged in long-term partnering agreements with Client A at the same time that he/she is working in a more traditional, adversarial manner with Client B. Staff have characteristics and abilities that align to one method of working or another, and should be utilised accordingly.

Partnering will only work if all members of the team are willing to work in an open, honest, and trusting relationship. Co-operation and collaborative working are a must. The client has to be prepared to accept a realistic return for the contractor. There should be two design engineers on site, one from the client and one from the contractor. Advice with regard to modifications and "Changes" given to the Project Manager should be acted on without delay.

It is vital that competencies of different people compliment each other and that recognition exists of "needing each other". The management of the client and contractor should hold weekly meetings to discuss any issues affecting progress and cost. Obviously the key staff are selected not only on their technical skills but also more importantly on competence. A Team Player must;

– Not subscribe to adversarial attitudes.
– Be able to build relationships across functional boundaries.

- Look to assist and develop other members of the team.
- Want all partners to win.
- Listen to others, and take their views seriously.
- Understand that everyone has a positive contribution to make.
- Use language that is evocative (draws together) rather than provocative (alienates).
- Have people skills like 'Team Player'.
- Motivate and be able to bring out the best in others (leader).
- Be open and willing to share.
- Possess listening skills.
- Be honest.
- Search for better solutions and ways to do things.

Construction Experience

A few schemes are described below that demonstrate the advantages of partnering.

The Happisburgh to Winterton and Lincshore Flood Defence Schemes, East Coast, UK

In 1996, the Happisburgh to Winterton reef and recharge project was tendered as an ICE 6th contract although, during post-tender clarifications, further discussion on the allocation and pricing of risks was initiated (Figure 6). This early dialogue between the Environment Agency and the contractor identified a mutual desire to find a better way of working together. This led to agreement on an element of risk sharing and the adoption of a non-contractual "Partnering Charter". During the subsequent years 1998 to 2004 a number of further phases of the scheme were both competitively tendered and negotiated under formal partnering contract conditions using the ECC Options C and D. Option E was used for the Emergency Works Contract that required a rapid response to a serious flood risk (Figure 7).

Figure 6. By agreement some reefs were re-located to avoid additional costs.

Figure 7. During Emergency Works rocks were excavated and re-used.

Figure 8. Early involvment of specalist sub-contractors improves final results.

Figure 9. An important aspect of the Hythe to Folkestone coast protection scheme was the continuous public involvement.

Seaview Coast Protection Scheme, Isle of Wight, South Coast, UK

The Seaview CP Contract was originally tendered using traditional methods. It was recognised by the Client (Isle of Wight Council) that a number of uncertainties and risks could cause contractual difficulties. Further soil investigation was undertaken followed by the pile design. Land access and ownership negotiations were still ongoing. Critical time scales on weather, access for visiting holidaymakers, environmental restrictions and unforeseen service diversions were a good feeding ground for disputes, claims, litigation and lawyers during traditional contracting.

Negotiations were then commenced with the marine contractor. Through a negotiated route with full transparency of design criteria, expected cost and risk analysis the Contract was restated as a "Risk Sharing" ECC Contract with the emphasis on Partnering. "Option C – Target Contract with Activity Schedule" (with a capped Gain / Pain Share) was used. The outcome was completed on time and to budget, and without contractual dispute (Figure 8).

Hythe to Folkestone Coast Protection Scheme, Southeast England.

This DEFRA funded scheme, which forms part of the Folkestone to Rye Coastal Defence Strategy Study, used about 300,000 tonnes of rock to build a large headland and a number of other rock structures on the foreshore below the Folkestone's Coastal Park. Approximately 4000,000 cubic metres of shingle will be used to "top-up" the existing beaches. Improvements were also completed to the existing concrete seawalls at Sandgate and Hythe along a length of 7 km.

The Contract was Tendered using the ECC Option C Form with Activity Schedule and was innovative in respect to a number of meetings and workshops organised by Shepway District Council with tendering companies before, during and after the tender date. Finalists were asked to make presentations to demonstrate best value in their approach to the work prior to selection and award (Figure 9).

A "Partnering Workshop" was also held at a location adjacent to the site that, with the assistance of a facilitator, produced the Partnering Charter. The site offices were established as a shared team facility with public access to the reception area for easy consultation with site management. Early in the contract a series of public meetings were held at locations along the 7 km frontage to gain the views and knowledge of the public. Public exhibitions were held and regular newsletters published and available at numerous locations. Very early in the project was found that the most economic method of transport for staff working on the long frontage was the use of mountain bikes. These were used in preference to the 4x4 standard site vehicle.

Lessons Learnt

The following list gives an overview of the lessons learnt by all parties:

- The use of the NEC Professional Services Contract (P.S.C.) by the client to procure the services of a contractor at an early stage will result in an efficient design giving best value.
- Design and Construct Contracts (D&C) can be used as an alternative to PSC and ECC especially for clients using contractors with that capability.
- Partnering will overall not only give savings and it often "adds value" to a scheme by innovative changes on site.
- Good news should be translated into a higher scheme value, longer lifetime, less maintenance, and so on.
- As on the Folkestone site, the team to report to the Project Board, which meets strictly every 6 weeks; commitment from the top from decision-makers.
- Overhead costs, depending on company profit; should be at least 5-10% for "staying alive".
- Pain/gain gives contractors a real possibility to make some extra money by working hard and doing clever things.
- Partnering is only tested truly if things go wrong for the Client or Contractor and reimbursements are in place. (Contractor to reduce income or Client to pay extra costs in situations where genuine unforeseen events occur.)
- Use contractor's experience also "up front" to arrange licences, talk to environmentalists, and make other contacts.

The Future of Partnering Style Contracts for Flood and Coastal Projects in England and Wales

The National Contractors Framework is the sole agreement with Contractors established under the "Agency New Procurement Strategy". The frameworks have enabled strategic relationships to be established with contractors and have a "life" of five years (the longest possible under current EU law). This permits the principles of partnering to be adapted across a programme of works with *one* supplier rather than having to establish relationships on a project by project basis. The relationship is managed through the use of Key Performance Indicators and includes a cross supplier management group where best practice can be identified and shared. The Management group also focusses its efforts on ensuring the "incentivisation arrangements" within the contracts adequately align objectives.

Since the commencement of the frameworks, relationships have been steadily improving. The development of truly integrated teams (Agency / Contractors / Consultants / Cost Consultants and such) are now starting to be realised. The teams are focussing strongly on improved Health and Safety and Environmental performance as well as challenging each other's contributions to enable the Agency to deliver to its ambitious efficiency programme. Amongst the elements are:

- Early agreement on procurement policy for projects. Consultants to take practical advice from Contractor on materials available for integration into practical design.
- Communication is paramount. Stick to decisions on site and report rumours to the Site Team for investigation. Be open and transparent. Pick up the phone.
- Introduce self-certification with the Supervisor taking the role of auditing the quality system of the designer and the contractor.
- Improved Health and Safety as well as Environmental enhancement should be high on agenda for each scheme. What can we build in?
- On completion evaluate each Scheme with the Project Team and involve Stakeholders. Hold a lessons learnt one day workshop and agree who will take action on each improvement and use the output as start for next scheme.

Conclusion

Partnering should create a win-win situation whereby the contractor is allowed to make a reasonable return and the client gets a scheme, with Value Added, within budget and on time. Transparency of budget and programme constraints helps to converge the objectives of all parties. Effective management of risk is conducive to building common team objectives, and maintaining focus on what is important at any given time.

Strong positive and negative incentives are appropriate in long-term relationships, but when applied in short-term relationships can result in a "boom or bust" result, with associated strength of reaction through contractual lines.

If both the Client (with or without assistance from a Consultant) and Contractor are *really* trusting each other and willing to openly share their experience then Partnering is the ideal construction procurement tool for high risk projects. Historically both sides find it difficult to suddenly share and avoid confrontation. Paramount is the role of the Project Manager and the Contractor's Construction Manager. They have to be dedicated team players, willing to give and take, challenging and active in finding better solutions. Since Partnering does not develop overnight, the true Value Added of Partnering comes from long-term relationships.