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Construction contracting in theory and practice: A case study

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Despite the attention given over the last several years to the effectiveness of alternative contracting methods, problems of co-ordination and control still continue to plague the construction industry. The argument that is presented in this paper is that research in this area has tended to analyse the problem at one remove by essentially ignoring the reality *of construction project management and the factors that commonly influence* behaviour *on a construction project. In particular, little systematic attention has been directed towards how goal and power differentials can affect project outcomes. Evidence is presented from a case study of a management contract to demonstrate how the* motives *or aims that each party to the contract brings to the relationship and the* ability *they have to influence successfully the decisions and actions taken can have a substantial effect upon the course of events. The economic and contractual power of the respective parties and also internal organizational conditions are singled out for attention in this respect. The paper concludes that any assessment of the efficacy of various types of delivery system ought to take into account the factors that are likely to influence the operation of those systems in practice.*

Keywords: Management, contracting, project organization, organizational behaviour.

Introduction

For the best part of three decades, a solution has been sought to the seemingly intractable problem of integrating design and construction processes. Since early government reports (Emmerson, 1962; Banwell, 1964) and research at the Tavistock Institute (Higgin and Jessop, 1965; Crichton, 1966), problems associated with ensuring adequate flows of design information, incorporating design changes, modifying plans to suit actual conditions on site, etc., have been thoroughly documented.

The limitations of traditional contractual methods in dealing with these problems have received particular attention (e.g. Chartered Institute of Building, 1988). The recognition that traditional methods do not cope well with potential problems stemming from uncertainty and interdependencies in the design–construct process (Morris, 1973) has led to increasing interest in alternative methods – notably design–build packages and management contracting. The fact that such alternatives are now commonplace suggests that the search for a solution has not been without some reward. Contemporary construction clients are able to make more informed choices, based upon a well-established body of knowledge about the advantages and disadvantages of different contracting methods in relation to particular types of project (e.g. Harris and McCaffer, 1989, ch. 9).

Nevertheless, the picture is not an entirely rosy one. Construction projects continue to be

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highly susceptible to integration problems and project 'failure' is by no means a thing of the past. The continuing use of arbitration and the law courts to settle contractual disputes lends testimony to the persistence of the 'contractual divide'. Appeals from within the industry for all parties to work together jointly in pursuit of common goals, though highly laudable, may sound somewhat ironic to the average site agent or clerk of works caught in the contractual cross-fire of a difficult project. Why do these problems still persist? No doubt project complexity is part of the explanation. Yet the reader is probably familiar with many examples both of very successful complex projects and of very unsuccessful, yet seemingly more straightforward, projects. There is also plenty of evidence to suggest that the various types of 'delivery system' available can be used to good effect even on the most complex projects.

Part of the explanation may also lie in the manner in which project aims and management procedures are formulated in the first place. There is certainly evidence to suggest that the client's choice of aims and methods may be affected by criteria other than the technical requirements of the project (e.g. Friend *et al.*, 1974). Recent evidence suggests that clients still tend to stick to well-tried and trusted methods, rather than systematically match method to project (Bresnen *et al.*, 1990). Indeed, the strategic decisions made by clients as to how to organize and manage their projects have received increasing attention in recent years. However, despite the importance of this factor, it does not provide an entirely adequate explanation of the problems that are faced. Is there any guarantee that a 'correct' choice will produce the desired outcomes? Does making the 'wrong' choice mean that failure or major problems will inevitably occur?

The suggested answer to these questions is 'no'. The reason is that the contractual/managerial system that is selected provides only the structural framework within which actions are taken and decisions are reached. Consequently, choosing an 'appropriate' system may be a necessary condition for ensuring project performance, but it is not in itself sufficient. In order to understand how that system operates in practice, it is necessary to examine *behaviour* within that system. Furthermore, to understand the behaviour that occurs, it is necessary to look further than the print of a document that specifies formal duties, rights and obligations. Behaviour is also influenced by factors external to that framework, as well as by perceptions and interpretations of the framework itself. Consequently, if we are to understand the conditions under which certain types of system are more or less effective, we need to extend our analysis from the rather narrow focus upon variation in type of project and incorporate variables that encapsulate the reality of what actually affects behaviour on a construction project.

The reality of construction project management

Any site agent will tell you that, at the end of the day, 'every project is different' and that what happens on site all depends on 'personalities' and 'relationships'. This may be something of an exaggeration, yet it contains an important kernel of truth and has important implications. The problem is that, in the past, such factors have been regarded as essentially random occurrences based on a unique combination of personalities and relationships – the personality quirks of a particular architect or the recalcitrance of a particular subcontractor perhaps. Moreover, that the resultant problems divert energy and attention from the mutually desired norm of collective and co-ordinated effort directed towards common project objectives. Yet such factors are neither random occurrences nor aberrations to an

agreed-upon norm: they are endemic to the workings of any organizational system and should be part of any explanation that attempts to show how that particular system works in practice. At the end of the day, it is people who take actions and reach decisions within whatever structural framework. To ignore their motives, perceptions and reasoning as systematically influencing their actions and decisions is to ignore an essential ingredient of the project management process.

The aim of this paper is therefore to throw some light on the manner in which variation in participants' attitudes and actions systematically affect construction project performance. Thus, a standard treatment of the relationship between project and contract type is augmented by an examination of the relationship between the major participating organizations. The intention is to provide an holistic interpretation of circumstances and events on one project based upon the participants' own perceptions and attitudes towards the way in which the project was organized and managed. As such, the analysis takes an action-based, interpretivist stance (Silverman, 1970).

Particular attention will be directed towards the ways in which the goals, expectations, norms and power brought by each participant to the contractual relationship may influence project outcomes. Anecdotal evidence apart, very little systematic research has been conducted on the impact of these factors upon project performance. Yet goals and power are critical to an understanding of management processes within any organized setting (Pfeffer, 1981). They determine both the motivation and the ability to achieve 'preferred outcomes' in any particular decision-making instance (Thompson, 1967). They are particularly relevant to processes that occur within the type of inter-organizational setting that characterizes construction contracting (Cherns and Bryant, 1984). Here, each party to the contract has at least some incentive to maximize their own gains at the expense of the other. Consequently, 'latent conflict' (Pondy, 1967) is inherent in the relationship.

Whether that conflict becomes 'overt' or not (Pondy, 1967) will, of course, depend on the strength of motivation and the ability to convert it into successful influence attempts. The motivation to exert influence is likely to depend on a number of factors, including the criticality of the project to the success of the organization and the likelihood of future work from the same source. The ability to exert influence will similarly depend on a number of factors: the scope available due to ambiguities in either the task remit or structural framework; the legitimate power (French and Raven, 1959) that can be exercised through the contract; the economic 'clout' of the organization; the capabilities, resources and back-up available to each participating operational unit (e.g. Kochan, 1975); and the attitudes, expectations and actions of the particular individuals concerned. These factors, *taken together*, will be analysed to demonstrate how the particular configuration of goals and power relationships on any particular project may combine to produce a particular set of outcomes.

The study

The following analysis makes use of data from a case study of a management contract, which was part of a study described in more detail elsewhere (Bresnen, 1986, 1990). The choice of a management contract to develop the analysis is purely a pragmatic one: the same form of analysis applies equally well to other types of contractual arrangement (Bresnen, 1990). Consequently, no attempt is being made to claim that the project is either typical or

representative. The aim instead is to draw analytical, rather than statistical, generalizations (Yin, 1984).

The project was studied on a longitudinal basis and a strong reliance was placed upon the use of qualitative research techniques. Data were collected from semi-structured interviews held with key participants from the main organizations involved, backed up by direct observation and analysis of contract documentation. Repeat visits and interviews were used to follow up issues and events as they arose and developed throughout the course of the project. A fuller description of the methodology used in the study can be found elsewhere (Bresnen, 1990, ch. 5). In the following description, the names of the participants have been changed to protect confidentiality.

The Product Development Laboratory (PDL)

The PDL project involved the construction of a three-storey, 5800 m^2 floorspace laboratory building for a company that specialized in the manufacture and retailing of pharmaceutical products. It was a one-off project, intended to replace inadequate existing research facilities. The client was a large, UK-based multinational corporation, whose considerable experience in building ranged from the construction of new plant, warehousing, offices and retail stores, to the maintenance and renovation of its existing industrial and retail stock. The PDL project was nevertheless large and one of the biggest current new building projects being undertaken by the client in the UK at the time. Based at the corporation's UK headquarters, the project was also somewhat prestigious: one respondent described it as the focus of attention within the firm at the time. Consequently, it was both an important investment and a prestigious project undertaken by a large and influential client.

The design team

To design and manage the work, the company employed its own architects and (structural) engineers, based in the company's Design Division. That division employed some 30 professional, technical and clerical staff. Its work usually consisted of small-scale, retail projects. Larger-scale, industrial projects such as the PDL had formerly been designed and managed by consultants, and this was the first such project to be handled in-house. It was also by far their largest single current project. During its course, up to about half the department's staff would be directly involved. According to senior architectural staff, the project was therefore of some importance – not only in the resources that were committed to it, but also as something of a 'test case' for the division handling similar future work. Two firms of private consultants were also employed to provide the M&E design services and the surveying services (the PQS). Both firms were local branches of larger, national practices; and both had considerable experience of working for the client company.

The project management team consisted of a representative from each consultancy, plus an internal team headed by an architectural project manager, to whom reported a full-time job architect. A senior engineer from the engineering section of the Design Division acted, in effect, as an internal consultant for the structural work; and a full-time, resident clerk of works was also seconded to the team from a separate works division within the company (see Fig. 1). The job architect visited the site on average twice a week, and senior staff about once

a fortnight. Formal contract progress meetings with the contractor and a user representative were held every 3 weeks.

There are two points to emphasize here about the nature of the design team. First, the Design Division was heavily dependent upon the client for its workload. Performance on the PDL project would have a significant bearing upon its future workload and even, perhaps, its long-term viability. Secondly, the design team was structurally fragmented. Not only were two independent and experienced consultants employed, but also certain key internal staff did not report formally and directly to the architectural project manager.

The design

The PDL project was to be designed and built to briefs supplied by the appropriate user departments, with some provision for multi-purpose use in the event of future changes in requirements. The custom-built nature of the work, coupled with the intensive laboratory and other services needed, made the design process a complex one. The main design and construction problem would be the integration of services and main structural work, all of which was to be constructed *in situ*. The M&E consultant was paid an extra fee to provide detailed co-ordination drawings for the services, in order to ease some of the anticipated problems.

The design was by no means complete by the time that work was due to begin on site. Twelve months had initially been allowed for the detailed design work, following the company's approval of the architects' outline proposals. However, following the appointment of the main contractor (see below), and with only a month to go before the planned start date, the company board cut the project budget by £250 000 (or 6% of total estimated cost). This precipitated a major rethink of the (architectural) design and put considerable pressure upon the Design Division to prepare drawings on time. Some significant overlap was already anticipated, particularly in establishing detailed services drawings. The potential difficulties were therefore compounded by the forced change in design direction required to accommodate the reduced budget.

The main contract

When the outline design proposals had been approved, the company board had decided to opt for a management contract, rather than a traditional (JCT) contract as originally intended. The reason for this was the belief that the 'tight' construction programme of 18 months could only be realistically met using this method. A contract was negotiated by the PQS with a firm called Hardcore Contractors, some 4 months prior to the proposed start date on site. It was generally agreed that the main (managing) contractor had not been appointed early enough for the full benefits of their input into the design to be realized. Nevertheless, following the cut in the budget, at least one major design change (namely, the replacement of a standard drainage system with a central undercroft to house the drains and services) was initiated by them and agreed with the architects.

The total estimated cost of the project was £4.5 million, which included a 5.5% management fee for the contractor. The period of completion was set at 78 weeks. The contract was based upon Hardcore's own terms and conditions for management contracting, and 3% of the total value was set aside as provisional sums for contingencies and additional work. All of the work was to be sub-let under standard nominated subcontractor terms and

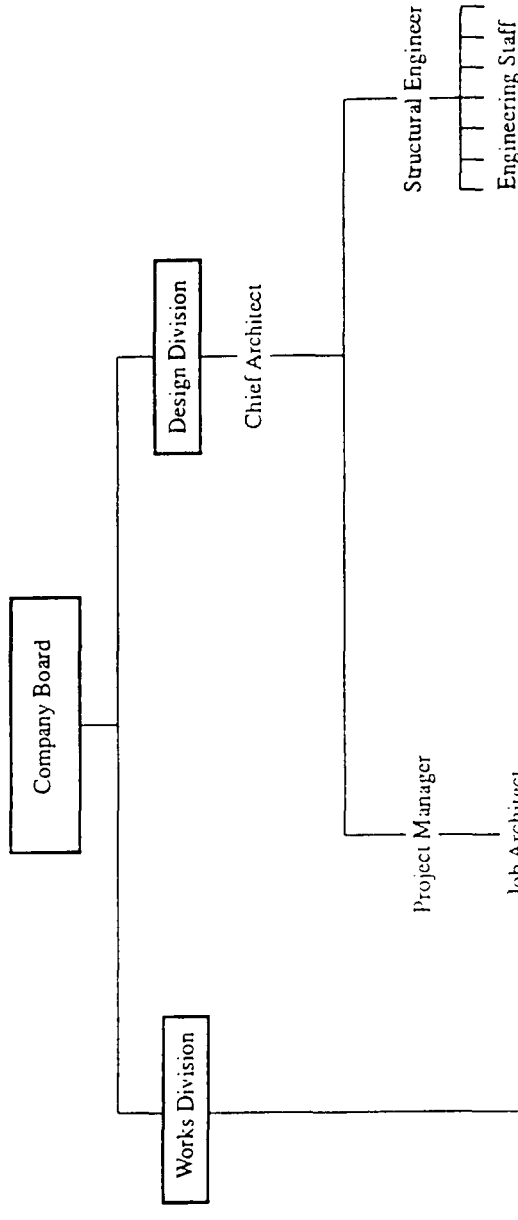

Fig. 1. The PDL project: Client's team.

conditions. The work was subdivided into 40 separate 'packages', the contents of which were to be decided upon by the PQS and Hardcore. They were to select six firms to tender for each package, and would conduct the tendering process, making recommendations to the client's team for their final approval. During tendering, considerable emphasis was placed upon the explanation of subcontractors' responsibilities (e.g. for their own attendances) under a management contract.

Hardcore Contractors was a large, national contractor that specialized in management contracting. It had undertaken work on this basis since it was first established, although the full switch to management methods had only occurred within the previous decade. The firm employed some 2500 staff in total and had an annual turnover of approximately £150 million. It had a good deal of experience of managing large-scale, one-off, complex projects and the PDL project was only a comparatively small proportion of the company's turnover at the time. However, it was the first contract with that client and senior managers reported that it was therefore important in helping enable the firm to secure future retail and industrial project work from them. Consequently, for the main contractor too, the project had a strategic importance over and above its direct contribution to turnover and profitability.

The contractor

To manage the work, Hardcore appointed a full-time, resident site team, headed by a site agent who reported to a visiting contracts manager (see Fig. 2). One of the general foremen and the site engineer were transferred to other projects as the main structural work was completed. The rest of the staff were involved for the full duration of the project, although none had been involved directly in the pre-site planning process. A gang of eight general labourers was also employed directly to provide general services on site, as well as some subcontractor attendances. As noted earlier, all the direct work was subcontracted.

Two quantity surveyors were employed: one full-time on site, the other seconded part-time from the contractor's head office. Both would work very closely with the PQS. The contracts manager described the relationship between the site agent and senior surveyor as one of 'balanced authority', with himself forming the 'cross-over point' between the two sides of the team. However, he also pointed out that his own involvement was much more at a contractual level and that the assignment of a surveyor from head office created a slight difference in 'status' between the two sides. Finally, a services manager was employed to co-ordinate the design and installation of the M&E services. He would work in close conjunction with the M&E consultant and the relevant specialist subcontractors.

The concentration of senior and experienced staff on site both reflected the nature of a management contract and also meant that the degree of head office involvement was minimal. The head office performed no role in resourcing the work on site, as it was all subcontracted. Consequently, the site organization was virtually self-contained, the sole links with head office being through the visiting contracts manager and senior surveyor. The main functions of the site team were to plan, co-ordinate and control subcontracted work, and to provide a channel of communication for the large volume of design information and other documentation transmitted between the design team and subcontractors. These activities involved variously each member of the contractor's team, depending on the level at which discussions and decisions were needed and the type of work involved (main structure or services). In essence, the key function undertaken by Hardcore on this project was that of project co-ordinator.

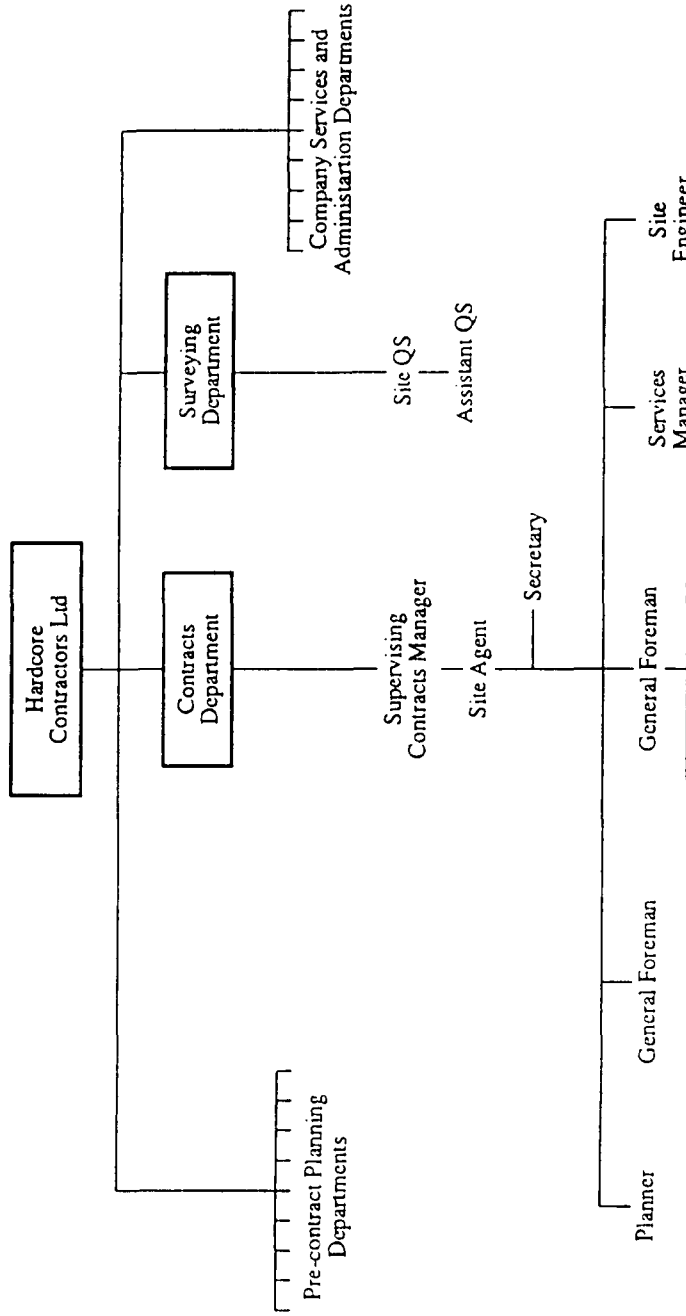

Fig. 2. Hardcore Contractors Ltd: The PDL site team.

Although all of the staff had worked for the company for some time, it was only the contracts manager and services manager who had any prior experience of management contracting as such. When interviewed, the site agent and general foreman contrasted their less direct involvement in managing the work on site with the greater control they usually had on traditional contracts. The services manager and site engineer likened their roles to those of the client's resident site staff on 'normal' projects. This lack of direct control over, and involvement in, the work were cited as factors which on balance made management contracting less 'satisfying' for the production staff.

The client's clerk of works, who similarly had no previous experience of management contracting, also found it less satisfying because the work was 'fragmented' and it was more difficult for the team 'to gel'. In contrast, the surveyors expressed greater satisfaction in working more closely with fellow professionals in conditions where the contractor's role was contractually 'neutral' as opposed to 'adversarial'. The client's consultants and architects also felt (in retrospect) that the lack of direct involvement with the subcontractors, due to the managing contractor acting as a 'buffer', was a distinct advantage. They were not 'bogged down' or 'drawn into' direct dealings with the subcontractors: such dealings were conducted 'behind the scenes' by the main contractor.

Before continuing, there are two main points to note here about the nature of the management team. First, the contractor's team was well integrated and empowered with sufficient authority to take decisions locally and conduct negotiations directly. The team was staffed with surveyors and a contracts manager of senior status who effectively controlled the project team and who could take decisions without referring back to head office. Secondly, although many of the contractor's staff had no direct experience of management contracting as such, for the designers it was very much a novelty and a departure from normal practice.

Performance

The site was first visited 6 months into the construction period, at which point work was in progress in erecting the main frame, laying the drainage system and installing the services. The contract was running an estimated two and a half weeks behind programme. This was, however, an improvement: it was reported that earlier delays to the main frame construction had threatened to put back the completion date by a month. Visits to the site continued throughout its course, up to and including the final week.

Progress remained steady until the middle of the contract period, when a number of problems in the internal structural and finishing work extended the expected delay to 1 month. The close interdependence of the finishing trades' work on site, coupled with the already tight programme, meant that the main contractor had to replan the work to meet the completion date, and to contain the 'knock-on' effects of any delays. This they managed to do and, allowing for bad weather, the target completion date was eventually met. It was reported by the client's team that the project had also been kept within budget.

Both teams expressed their satisfaction at the eventual outcomes in terms of time, cost and quality objectives – especially given the reduced budget, tight programme and late involvement of the management contractor. Moreover, all those interviewed reported that there had been a high level of 'teamwork'. However, this had not always been the case. Early on, the architects had found it difficult to adjust to a management contract. The project manager, for instance, said that he had found it 'very difficult to change the habit of years working on JCT jobs', where the designer and contractor are 'adversaries'. According to the

clerk of works, 'early on . . . a lot of friction was caused and working relationships weren't very good . . . partly because the [in-house designers] weren't used to management [contracting] and felt they should be pushing the job more'. The problem had indeed been reported by the contractor's team at that early stage. According to the contracts manager, 'the architects don't really understand the implications of the management team concept . . . we have good relationships with [the consultants], but our relationships with the designers haven't developed so well'. The site agent had commented that 'there's far less communication than there should be . . . no one tells each other what's going on'. These early teamwork and communications problems were corroborated by members of the client's team. At an early stage too, the clerk of works noted that the job architect tended to issue site orders and to liaise directly with the main contractor: '[Hardcore] got caught in the crossfire . . . they didn't use me to the full extent they should have'.

Consequently, the early stages of the project had given rise to some difficulties associated with learning how a management contracting system operated. The design team, in particular, approached the project informed by expectations based on experience on traditional types of contract. However, with time, the potential this had for generating a 'vicious circle' of disagreement and conflict subsided and gave way to a 'virtuous circle' of mutual adjustment. This was so much so that the participants could, at the end of the day, speak of the high level of teamwork that had occurred. The aim of the next section is to examine the dynamics of this process and to seek an explanation for how this change occurred.

The PDL project: A case analysis

What was perhaps surprising about this project was that performance levels were finally achieved, given the initial constraints on objectives and early problems in its management. The critical problem in the early stages was the inadequate flow of design information. Delays in the production and transmission of drawings (due to pressure on the design team) were held to be the main causes of the delay to the main frame construction. In addition, the architectural design was felt to be lacking in detail and a good many alterations and variations occurred as the work on site progressed. Problems were reported in picking up snags in the design at a sufficiently early stage and in responding to subcontractors' requests for information. According to the PQS, 'for the purposes of measurement the drawings were adequate . . . [but] I don't think they were full enough [for construction]'. Furthermore, according to the site agent, the architectural design was not only 'vague', but also distinctive in 'style' from that normally produced by the architects. The problem then was that subcontractors would 'see it as a normal job and won't bother to work through seven or eight drawings just to get one detail'. The novel design, coupled with the subcontractors' tendencies to approach the job in a normal way and expect the main contractor to pick up any snags, compounded the problems stemming from late, insufficiently detailed and often-changeable design information. These problems co-existed with, and were the focus of, the early problems of adjusting to an unfamiliar contractual arrangement. At that stage, the contractor's staff was having to correct drawings 'out of necessity' (site agent); 'fend off' subcontractors until design details were produced (general foreman); cope with the architect's tendency not to take on board the contractor's 'recommendations' (surveyor); and

attempt to co-ordinate the design process with the architect tending to discuss and agree changes directly with the subcontractors concerned.

Further problems occurred due to the tight financial control exercised by the client. Indeed, the problems experienced midway through the contract were attributed partly to the risk taken in selecting the lowest price bidders for the finishing trades packages. According to the clerk of works, 'the problem is in trying to get value for money when the money you're paying [is less than] what you'd need to get the value you expect'. Due to the cut in budget, any modifications to the design had to be looked at with a view to making savings. All the participants felt that this had introduced a certain rigidity in dealings among the team and, particularly, with the subcontractors. This was contrasted with the more flexible approach considered desirable under a management form of contract.

Faced with these problems, the contractor's staff felt that they were caught in the middle – sympathetic towards the subcontractors' claims, but committed to the client as they were part of the management team. They felt that, as a consequence, relationships with the subcontractors on the job were 'soured' (site agent). Problems in obtaining drawings, information and recompense for delays tended to make the subcontractors respond to any subsequent problems that arose in a much more uncompromising way. There was little 'give-and-take' left in the relationship. A similar picture was painted by some of the subcontractors who were involved. The contracts director of a local cladding firm, for instance, was highly critical of both the designer's and main contractor's responses to several problems that had occurred in the design, programming and fixing of the cladding work: 'when the job was first delayed [due to the main frame problem] . . . we could have thrown the book at them, but we didn't . . . . After that, every time we put a foot wrong the architect threw the book at us without mercy . . . [The main contractor] didn't do anything to back us up.' He contrasted this experience with previous experience on a 'normal' job where 'it's the contractor's responsibility to look after the subcontractors'; and also on other management contracts, which had gone much more smoothly. He expressed the view that the architects had given the main contractor 'the run-around', and that the latter had responded by 'hiding away from problems' and engaging in 'double-dealing'.

Interestingly, members of the design team did not share the view that the main contractor was compromised. The project manager, for instance, referred to their initial lack of 'trust' of the main contractor, based on their perception that the latter was 'defending' the subcontractors too much. Referring to the early problems that occurred in the main frame construction, he felt that the contractor should have been 'clobbering' the subcontractor more. Even towards the end of the project, the clerk of works felt that Hardcore's main aim of meeting the programme completion date had tended to produce a 'bias' towards subcontractors and a reluctance to push them too hard: 'I'm not suggesting . . . [the contractor] . . . has skimped, but it has caused problems [in quality control].' What this commentary suggests is the somewhat unenviable position of the main contractor at the juncture of two sets of conflicting expectations of their role and allegiance, neither of which they ever fully managed to fulfil.

Given this dilemma, a number of coping strategies were adopted. First, subcontractors' errors or omissions gave the main contractor scope for negotiations to minimize claims submitted against the client. The 'wheeling and dealing' that went on, and from which the designers expressed satisfaction at being distanced, protected both the main contractor's interests (in getting the work completed on time) and the interests of the design team (who would otherwise face claims for late and inadequate information). Naturally, such

negotiations occurred largely at the expense of the subcontractors. Secondly, if negotiations proved unsuccessful, Hardcore resorted to expediting the work themselves. This in fact did occur on the cladding package, when the subcontractor threatened to stop work and submit a claim because the design had been incorrectly detailed and some extra work was required. The early problem with the main frame was also solved by the main contractor and PQS paying the subcontractor extra to accelerate their work and bring it back on programme. It was felt that the subcontractor 'had a case' (PQS) for pushing a claim due to late information. To avoid a claim and further delay, the main contractor and PQS themselves funded this extra payment.

A further tactic of some interest occurred in the run-up to completion. At that stage, the target date could only have been met if the time available to the clerk of works for 'snagging' and to the M&E consultant for 'commissioning' were both reduced. In effect, that is what happened, and both felt that they were being 'squeezed in' at the end. According to the M&E consultant, the architects did not support their case because of the threat to the completion date. The main contractor's expressed concern was with 'protecting' the subcontractors against pressure from the professional staff in order to stave off further claims and delays. In effect, the contractor and architect tacitly colluded in order not to delay final completion.

The M&E consultant generalized from this last event to explain how he felt relationships had developed in the latter half of the construction period. Both main parties were in 'weak positions' with respect to the client. The designers had little experience of this type of work and had been 'shoved through the tunnel'. The project had been the 'focus of attention' within the company and the designers could not afford to be seen to make too many mistakes. He felt that, in normal circumstances, the contractor 'would have had a field day'. However, their allegiance to the professional team, coupled with the incentive of future work from an important client, had led to a situation in which the two main parties had eventually 'collaborated'. This 'unique set of circumstances' had meant that working relationships 'developed well, despite the earlier problems'. In other words, the key to understanding the outcome on the PDL project was the mutual dependence between the two main parties involved in its management.

Discussion

If one were to try to predict at the beginning the final outcome on the above project, the phrase 'completely successful' would not be one that automatically springs to mind. It was a large-scale, one-off project, where the work involved was complex and highly diverse. There was a considerable design–construct overlap, a very tight programme, complex inter-dependencies between structural and services work and uncertainties in design caused by the late cut in budget. Management contracting may have been the best way to achieve the objectives in such circumstances, but the contractor was only brought in late, and few of those involved were familiar with how the system worked in practice. Moreover, there was little initial trust between members of the management team and also quite clear differences in expectation about how the project should be managed. However, the project was successful, and the reason why it was so can be found in the particular circumstances surrounding the project. If circumstances had been different, then probably so too would have been the eventual outcome. This is not to suggest that the skills and capabilities of those involved should be underestimated. Rather, that only an holistic view of circumstances on

that project yields a fully satisfactory explanation of the direction that the course of events took.

Returning to the analytical framework introduced at the beginning of this paper, it was suggested that attention would be given to the factors that influenced each party's motivation and ability to pursue and achieve their preferred outcomes. As regards motivation, for both main parties the project was one of some strategic importance. For the main contractor, it was important as a means of obtaining future industrial and retail contracts from a major private sector client. There was every possibility that success on this project would predispose the client to negotiate only with Hardcore in the future. For the designers, the project was important in retaining and strengthening an in-house capability to undertake major industrial projects as well as its usual workload of retail projects.

The crucial point here is that both main parties *had* to ensure that the project was both successful and seen to run smoothly. However, these aims were jeopardized by the late cut in budget which put an additional strain on already tight objectives. In effect, a 'win–lose situation' was created in which those objectives could not now be reconciled without one party losing out. With nothing to gain from 'contractual battles', the contractor's main aim would be to ensure that the job ran as smoothly as possible and met the completion date. But they could only do this by controlling the design team (and minimizing design changes) on the one hand, and controlling the subcontractors on the other. For the designers, the opportunity to create a distinctive and high-quality building that demonstrated their capabilities was under threat due to the need to find cost savings. Moreover, it was a highly 'visible' project internally, and this added to the stresses caused by its complexity and tight objectives. The designers therefore also had to make sure that the work was controlled effectively in order that their design standards were maintained and met.

What factors contributed towards the ability or inability of each party to achieve their aims? A good part of the explanation can be found in the contractual and economic power they could harness to influence others. For the main contractor, controlling the subcontractors was less of a problem: most of them were comparatively small local firms dependent on the client for work. If a potential claim situation threatened, then a variety of coping strategies were also available to avoid the dispute coming to the attention of the client. These would cost the contractor, but the ultimate pay-off would be worth it. The design team was a different matter, because the contractor had no direct economic power that could be used to influence their actions. Acting 'contractually' was not really an option, as it would likely inflame an already aggravated situation and thus prove counterproductive to the contractor's main aims. The only real option was to manipulate in some way the designers' dependence on the client.

The designers, who were unfamiliar with the management team concept, found initially that the contractor was reluctant to 'come down hard' on the subcontractors. Their natural first response was therefore to 'bypass' the seemingly ineffectual contractor and deal directly with those undertaking the work. However, although they had the will and ability to do so, they found that it created significant co-ordination problems. In effect, the management contract constrained their ability to act contractually without the main contractor's support. It was only with time that the realization dawned that such tactics were counterproductive and that the contractor could be relied upon to do that job for them.

A further point concerning the type of contract is the manner in which uncertainties about its operation allowed some scope for the parties to pursue their aims. This was noticeable in the early tactics adopted by the design team. It was also noticeable how, later on, the

contractor could use any subcontractors' misunderstandings of their obligations under a management form of contract to 'go by the book' when it suited them. Had the structure been entirely clear to all concerned, then it is less likely that the contractor would have been able to switch from being 'flexible' to being 'rigid' when it suited them. The irony, however, is that such tactics promoted more formal dealings with the subcontractors than was intended under a management form of contract. It is hardly surprising that the subcontractors, who stood to bear the brunt of the pressure stemming from tight objectives, should protect themselves by responding more contractually once they had experienced problems. Faced with a management team with whom they were at odds, it was the best they could hope to do to protect their own interests.

Several key internal organizational factors also helped make each party's task more or less difficult. The managing contractor's team was self-contained and staffed with managers of sufficiently senior status to take important decisions and conduct local negotiations. The status differential between production and commercial staff that favoured the latter helped the contractor marshall their resources to conduct negotiations and removed any source of potential internal wrangling. Additionally, the services manager played a crucial 'linking-pin' role (Likert, 1961) in integrating the services side of the contract. In other words, the contractor's team had sufficient power and was sufficiently integrated and united to enable its case to be effectively put.

The design team, on the other hand, was much less united and cohesive. It is significant that many of the earlier-reported communication problems referred as much to the internal relationship between architects and engineer as they did to relationships within the team as a whole. Moreover, the early 'bypassing' of the clerk of works added to this picture of internal disunity and discord. Such a 'divided front' could easily have been exploited by a contractor willing and able to seek a contractual gain. For a 'neutral' main contractor, it at least supplied a fall-back position in the event of a major crisis developing; and it stopped the designers from using the full weight of their power due to their contractual position. The contractor could also depend on 'allies' within the client's team – notably, the PQS, whose orientation to the project was similar to theirs. Implicit coalitions could be formed to influence particular decisions by effectively 'detaching' members of the team. Thus, even during the early difficult period, behind-the-scenes deals were struck with the PQS and main frame contractor.

Finally, it is important not to understate the importance of the attitudes, expectations and actions of the particular individuals concerned. Had it not been for the very different norms and expectations brought to the relationship by the individuals concerned, then early events might well have followed a very different course. Moreover, the manner in which circumstances changed over the later stages of the project had a lot to do with the willingness and ability of the key participants to change their approach and seek common ground through a process of mutual adjustment.

Conclusion

What has hopefully been demonstrated in the above analysis and discussion is that broader organizational and inter-organizational factors can be crucial conditioning influences on the course of events on any particular project. These factors combine with the type of project and contract to affect, in a particular way, each party's motives and their ability to achieve their

aims on the project. The whole process is, of course, subject also to the dynamics of learning and adjustment as the relationship is established and develops over time.

This variety and complexity should not, however, detract from the main implication of the argument – namely, that not only are such factors critical, they can also be systematically charted as the basis for prediction of future likely outcomes. In other words, every project may be different, but the conditions which cause this variation are not. It is not solely with the benefit of hindsight that important conclusions can be drawn. For example, the organization which is able to use dependent suppliers, present a united front and clearly specify contractual terms and conditions is more likely to be at an advantage when it comes to controlling work on a large-scale, complex project. Finally, the focus on management contracting should not obscure the relevance to other situations: if conditions on a complex project are 'right' for one party, then a more traditional type of contract can be just as effective in helping that party achieve their goals, despite what the textbooks say.

These factors can – and sometimes do – form part of the selection criteria used by clients and contractors. Moreover, it is quite rational that they do, given their potential impact upon project performance. Clients and contractors have understood for some considerable time that the attitudes and actions of their prospective contractual partners can have a substantial impact upon their own fortunes. Indeed, the key to understanding under what conditions certain types of contractual framework are likely to be more or less effective may as much lie in the assessment of others' aims, motives, strengths and weaknesses as in their previous work experience, capital gearing, staff resources and so on. If developing guidelines on 'good practice' is the aim at the end of the day, then there is clearly a need to refine our understanding of the conditions under which good practice is likely to occur.

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