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A modern contract: developments in the UK and China

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The form of contract plays a significant role in the governance of relationships between parties. Recent research in project procurement emphasises relationships and cultural/behavioural issues. Such relationships operate within a formal (contractual) framework as well as an informal (interpersonal/social) framework since no contract is entirely transactional or entirely relational in nature. Sir Michael Latham suggested a cultural/behavioural change is required in the construction industry such that project participants should embrace a 'modern contract'. This paper examines the 13 Latham requirements of a modern contract in the latest edition of the NEC. The requirements are categorised, under what are labelled here as pillars of a modern contract, namely 'fairness', 'roles and functions of project participants', and 'payment operating mechanisms'. Developments in contracting practices in the Chinese construction industry, with a cultural tradition grounded in Confucian values of cooperation and sharing, are then examined and juxtaposed against the UK construction industry's movement towards a modern contract rooted in relational contracting. The developments show that China has nurtured a change towards the more formal, contractual, system of rights and obligations in their 'modernisation' of construction procurement in sharp contrast to the UK movement towards greater collaboration and cooperation.

1. INTRODUCTION

Construction projects in many countries are largely procured using standard forms of contract prepared by various drafting bodies. The placing and management of contracts have been the subject of research over many years. Recent research emphasises relationships and cultural/behavioural issues in project teams. Such relationships operate within a formal (contractual) framework as well as an informal (interpersonal/social) framework. Many government reports concerning the UK construction industry over the last 70 years have focused on the management of contracts with various suggestions and comments calling for culture change away from adversarial relationships towards cohesive, integrated teams requiring collaboration between project team members (Murray and Langford, 2003). In other countries, such as China (where a tradition of collectivism and collaboration

dominates) and Japan (where participative management and partnering/alliancing flourish in their construction and manufacturing sectors), the importance of relationship management (within the formal, contractual system and the informal, social system) is paramount to the success of construction projects.

The mechanism of the contract can play a significant role in the formation of relationships within the context of contractual roles (formal system) and cultural/social norms (informal system). Three elements are proposed here as pillars of a contract that suit the modern world of construction (a modern contract): 'fairness', 'roles and functions of project participants' and 'payment operating mechanisms'. A theoretical foundation is first advanced in support of the three constructs as pillars of a modern contract. The NEC3 family of contracts (ICE, 2005) as an exemplary modern contract is then examined against these three pillars to ascertain conformance. Finally, developments in contracting practices within the Chinese construction industry are juxtaposed against those of the UK to show how the two industries have been moving in completely opposite directions along the transactional–relational continuum of contract systems. Given the growing influence of China in the global economy and the growing influence of Chinese contractors worldwide, this comparison is both relevant and timely.

2. THE THREE PILLARS OF A MODERN CONTRACT

Contracts are a common feature in construction projects. The construction contracting process is a typical manifestation of a principal–agent scenario in which the client (the principal) often engages the services of a contractor (the agent) to deliver a product or a service. Contracts are therefore used to outline duties and responsibilities, specify tasks to be performed, set out rules for determining compensation and laying down how actions of the parties may be monitored. Traditionally, contracting practices have taken a transactional approach characterised by discrete, economic exchange conducted in a formal manner and only engaging small segments of personal beings of the participants (Macneil, 1974). The consequences of such an approach have been adversarial attitudes prone to conflict as parties to such transactions adopt exclusively self-seeking postures as they see themselves engaged in zero-sum games (Walker and

Davis, 1999). In contrast to the traditional transactional approach to contracting, a relational approach to contracting has been advocated and promoted over the past decades embracing various collaborative working practices such as partnering, alliancing and supply chain management. Such approaches are characterised by 'long-term social exchange between parties, mutual trust, interpersonal attachment, commitment to specific partners, altruism and cooperative problem solving' (Duberley, 1997). Within the context of construction contracting practice, transactional and relational contracts differ in several respects; transactional dependence, nature of the procedures for work ordering, degree of documentation, resolution of contingency, length of trading agreement and nature of risk sharing (Macneil, 1974; Walker and Davis, 1999).

In reality, no contract is likely to be entirely transactional or entirely relational in nature (Florice and Lampel, 1998; Walker and Davis, 1999). Indeed, a study by Walker and Davis (1999) found broad agreement between clients and contractors on the need for contracts to contain both transactional and relational elements. Aspects of relational contracts that promote cooperation and communication among parties were preferred while transactional aspects of contracts that promote clear initial specification of the contract with its attendant duties, obligations and expectations were also preferred. A contingency approach may therefore often be necessary through which a typology of contractual types may emerge along the transactional-relational continuum.

From the foregoing therefore, what constitutes a modern contract may therefore not be one that is entirely relational in nature. The view here is that there is a normative context in relation to contracting and that these norms define the boundaries for social behaviour – what is right, adequate, acceptable and just (Anvuur, 2008). Ten common contract behavioural patterns and norms were identified as necessary in providing the normative context in contracts: role integrity; reciprocity; implementation of planning; effectuation of consent; flexibility; contractual solidarity; restitution, reliance and expectation interests; creation and restraint of power; propriety of means; and harmonisation (Macneil, 1983). Building on the work of Macneil (1983) on creating a normative context in contracts, we propose three pillars as key to the development of a modern contract within the construction contracting practice context: 'fairness', 'roles and functions of project participants' and 'payment operating mechanisms'.

2.1. Fairness

The concept of fairness, which underpins the parties' trusting behaviours, is often complicated by project complexity, uncertainty, and inter-organisational communication which together can influence collaborative behaviour. Kadefors (2005) investigated the norms and strategies in project organisations, focusing on the perceived fairness in inter-organisational project relations and concluded that, 'an intuitive cost-based norm of fair pricing shapes interaction in construction projects, but that consequences vary between projects'. These include reduction in effectiveness of risk management which can subsequently lead to client distrust if

the cost-based norm favours contractors. The tendency then is to design procurement practices and communication methods to counteract perceived losses.

Gouldner (1960) has long argued that a norm of reciprocity is a vital stabilising factor that exists in human society, hence individuals who experience unfairness tend to react with strong emotions. The consequences of perceived injustice include loss of trust, loyalty, and motivation. To mitigate against such negative outcomes the literature on organisational management emphasises that decision-makers and decision processes need to be fair. The simplest norm for distribution of outcomes is equality – rewards to be distributed in proportion to investments, costs and merit (Kadefors, 2005). This leads to the principle of risk allocation. It is, however, complicated to distribute reward according to the principles of equity; often, it is simpler to use an equality norm (see Grandori and Neri, 1999 who agree that asymmetric allocation requires more justification, discussion, calculation and bargaining than more egalitarian ones). Equality-based solutions are easier to administer and justify although the concept of fairness is related to equitable treatment (rather than merely treated equally).

Interactional justice is also important in the operation of a construction contract because an individual's judgement of fairness does not depend on distributive justice alone but also on the processes in deciding outcomes (see Grandori and Neri, 1999). The implications of perceived fairness based on *norms* are discussed in further detail through case studies concluding that 'it is hard to develop shared perceptions of fairness' (Kadefors, 2005). Fairness can however manifest through the risk allocation profile adopted in the contract. Individuals tend to be risk averse when evaluating possible gains but risk seeking in mitigating losses. A sense of teamwork should therefore be promoted based on relational contracting which promotes a recognition of mutual benefits and win-win scenarios through collaborative working arrangement and better risk sharing mechanisms (Alsagoff and McDermott, 1994). The importance of social guidelines (Macaulay, 1963) is emphasised in relational contracting where the *norms* may take precedence over legal mechanisms offered by specific contracts. The risk allocation at the outset of a contract may give rise to opportunism which results in potential actions that may benefit one party at the expense of others (Lyons and Mehta, 1997), but according to Rahman and Kumaraswamy (2002) the risk of exploitative opportunism may be safeguarded by self-interested trust (forward looking in the expectation of continuing business) and socially oriented trust (backward looking, based on a history of working relationships). The attitudes of the contracting parties and the cooperative relationships among the project participants are important for the facilitation of joint risk management – a concept underpinned by relational contracting (Rahman and Kumaraswamy, 2002).

2.2. Clarity of roles and functions of project participants

Trusting and cooperative relationships are perceived as fundamental elements in relational contracting/partnering arrangements although Liu and Fellows (2009) find that there are no differences between trust levels in partnering and non-partnering projects. Partnering and framework arrangements

are underpinned by a strong need for relationship management among the stakeholders. Smyth (2008) cautions that stakeholder management theory needs to recognise responsibilities for ethical care (i.e. interests of internal and external stakeholders) which means that construction projects should transform from relational contracting to relationship management to benefit all the players not just the powerful ones.

Relationship building depends on role clarity and trusting behaviours. Jin and Ling (2005) conclude that: (a) relationships transform from shallow dependence to deep interdependence over time; (b) different relationships bring about distinct inherent risks; and (c) different trust-fostering tools counterbalance specific inherent risks. Trusting behaviours cannot be nurtured if participants doubt respective roles and responsibilities. The dynamics capabilities framework (Teece *et al.*, 1997) advocates that competitive advantage primarily depends on managerial and organisational processes. Managerial and organisational processes are categorised into: (a) coordination/integration; (b) learning; and (c) reconfiguration/transformation (see Green *et al.*, 2008). The clarity of *roles and functions* of the project participants in a contract helps to foster relationship building and, arguably, dispute resolution.

2.3. Payment operating mechanisms

Disputes are argued by some to be inevitable but should be avoided as they are time consuming, expensive and unpleasant. Even if a dispute cannot be avoided, it should be resolved as efficiently as possible. Payment terms and mechanisms are particular issues of concern and a great source of disputes in contracts (Gould *et al.*, 1999; Watts and Scrivener, 1992). The causes of payment problems have been identified as relating to hierarchical/contractual relationships, deficiency of the credit system, deficiency of the legal system and available remedies, sully/demand imbalance, unfair contract terms, loose implementation of existing laws and starting projects without sufficient funding arrangements (Wu *et al.*, 2008). Construction industry reports worldwide have advocated payment protection laws (Latham, 1993; NSWDC, 2004; WALRC, 1998). Examples of responses to payment protection include the Housing Grants, Construction and Regeneration Act 1996 and the 'Fair Payment Charter' (OGC, 2007) in the UK and the Security of Payment Act in Singapore which became law in 2005 which guarantees contractors payment for work done (BCA, 2005). Clear *payment operating mechanisms* that are readily understood would help to foster a collaborative climate in projects.

Hence, the three pillars underpin the requirements of a modern construction contract: 'fairness', 'roles and functions of project participants' and 'payment operating mechanisms'.

3. NEC3 – A MODERN CONTRACT?

A historical context on calls for the UK construction industry to develop contracting practices that align with the three pillars outlined above is important in placing the discussion on the NEC3 (ICE, 2005) as a modern contract in perspective (see Murray and Langford, 2003 for a more comprehensive review). Almost half a century ago, Emmerson (1962) pointed out the lack of cohesion between all parties to a construction

contract and mulled over 'the possibility of adopting a common form of contract for both civil and building engineering work'. Further suggestions were made that the standardisation should also apply to subcontracts (Emmerson, 1962).

Banwell (1964) subsequently argued that the most urgent problem with the construction industry was the 'necessity of thinking and acting as a whole'. Attitudes and procedures needed to change but such change was 'of no avail until those engaged in the industry themselves think and act together' (Banwell, 1964). The changes proposed included steps to 'agree a joint form for building and civil engineering conditions of contract' and a unification of subcontract terms and conditions (Banwell, 1964).

Concern was expressed at the proliferation of standard forms and endeavours were made 'to define what a modern construction contract ought to contain' with 13 requirements set out for a most effective form of contract – a Modern Contract (Latham, 1994). The first edition of the New Engineering Contract (ICE, 1993) is recognised as 'containing virtually all these assumptions of best practice' (Latham, 1994) although a further seven specific adjustments were recommended for full compliance.

Key drivers for change including integrated processes and teams were later identified (Egan, 1998). Substantial changes to the culture and structure of UK construction were thought to enable improvement in the relationships between companies. Egan (1998) acknowledged that collaboration is required from both the legal profession and contract writing bodies in order to prevent an adversarial approach. Reporting a few years later on progress, Egan (2002) alluded to the UK Office of Government Commerce's recommendation of the adoption of forms of contract that encourage project team integration.

The requirements for a modern construction contract (Latham, 1994) are intended to meet the expectations and needs of the contracting parties in modern construction procurement. The fundamental problem to be addressed is the long-established and well-documented adversarial relationships. The suggested solution is an attitudinal change towards a collaborative climate, fostering roles of clarity and fairness in upholding contractual obligations, especially prompt payment and dispute resolution through (primarily) managerial skills. NEC3 is the complete integrated set of the latest editions of the various NEC contracts. Although other standard forms of contract are still in use in the UK, NEC3 has taken into account (to various extents) the requirements of a modern contract in terms of 'fairness', 'roles and functions of project participants', and 'payment operating mechanisms'. Indeed, the three fundamental principles underpinning the drafting of the NEC contracts (i.e. clarity and simplicity; flexibility of use; and stimulus to good management) ensured consistency of the contract provisions with the requirements of a modern contract. The specific provisions within the NEC3 that meet the three pillars are examined in detailed below.

3.1. Fairness

The NEC3 provides a number of core clauses that address the issue of fairness (see Appendix). There were specific

alterations to the NEC3 to take account of four requirements relating to fairness, namely (a) duty of fair dealing with all parties, (b) teamwork to achieve win-win solutions, (c) risk allocation, and (d) trust funds.

The duty of fair dealing refers to 'A specific duty for all parties to deal fairly with each other, and with their subcontractors, specialists and suppliers, in an atmosphere of mutual co-operation' (Latham, 1994). Specific changes to include this duty are also recommended to clause 1 and to the subcontract (ICE, 1993). It was also recommended that none of the core clauses be amended by either party to the contract (Latham, 1994).

NEC2 ECC clause 10.1 (together with clause 10.1 of NEC2 Engineering and Construction Subcontract) has been amended to include an obligation to act 'in a spirit of mutual trust and co-operation' (ICE, 1995).

In the absence of a proposal to use an NEC form of contract with its subcontractors, the contractor is required to submit each of the proposed conditions of contract to the project manager for acceptance (see ECC clause 26.3; ICE, 2005). The project manager can use the absence of a statement that the parties to the subcontract shall 'act in a spirit of mutual trust and co-operation' as a reason for non-acceptance (ECC clause 26.3; ICE, 2005). Thus, it cannot be demonstrated that the NEC3 provides true compliance with the specific recommendation by Latham (1994) that subcontracting on an NEC form 'be a mandatory condition' in contracts.

There are no provisions preventing the parties from amending any of the core clauses. In essence, amending the contract should not be difficult to achieve as the parties remain (largely) free to negotiate the final contract terms.

To achieve win-win solutions through teamwork, Latham (1994) suggests that 'Firm duties, with shared financial motivation to pursue those objectives be set. These should involve a general presumption to achieve 'win-win' solutions to problems which may arise during the course of the project'. Specific recommendations were made for clause 16.3 to be strengthened to give effect to the principle of devising solutions in a spirit of partnership.

The introduction of a risk register (ECC clause 11.2; ICE, 2005), comprising a list of the risks set out in the contract data and those which have been notified during the currency of the contract as an early warning matter, assists the parties to share in problem solving. This register is reviewed at risk reduction meetings where, among others, the parties who attend cooperate in 'seeking solutions that will bring advantage to all those who will be affected' (ECC clause 16.3; ICE, 2005).

The risk allocation requirement emphasises 'A choice of allocation of risks, to be decided as appropriate to each project but then allocated to the party best able to manage, estimate and carry the risk.' (Latham, 1994). The allocation of general, legal and insurable risks to the employer are set out under six main categories (see clause 80.1; ICE, 2005), those risks not allocated to the employer being carried by the contractor (ICE, 2005).

Financial risks are allocated, as appropriate, by the use of the main option clauses and by compensation events. The contractor carries the financial risk of doing work he has priced under Options A and B with the employer carrying the financial risk for additional works instructed under those options. Where a target price is used under options C or D the financial risks, on or around the target set, can be shared, up to a point, using share arrangements.

Lastly, 'Providing for secure trust fund routes of payment' is a specific recommendation for the NEC contract which suggests secure trust funds should be included 'as a Core Clause ... into which the client deposits payments' with the perceived benefits of providing greater confidence for contractors and subcontractors (Latham, 1994).

A trust fund could be set up (see option clause V; ICE, 1995) with sample documentation included in the Guidance Notes (ICE, 1995). The trust fund option is however not included in NEC3 (ICE, 2005). Following implementation of the 'Fair Payment Charter' (OGC, 2007) a project bank account could be created to facilitate direct payment to other members of the project team (see option Z; ICE, 2008).

3.2. Roles and functions of project participants

The NEC3 addresses the roles and functions of project participants through: (a) integrated package of documents, (b) simple language and guidance notes, (c) role separation, and (d) speedy dispute resolution.

The integrated package of documents 'clearly defines the roles and duties of all involved, and which is suitable for all types of project and for any procurement route' (Latham, 1994). Different types of project and procurement routes are catered for. In addition to providing the works, the employer states which parts of the works the contractor is to design (see ECC clause 21.1; ICE, 2005). Further flexibility is introduced by selecting one of six main (pricing) options.

Latham (1994) also recommended alterations to the NEC to include a full matrix of consultants' and adjudicators' terms of appointment interlocked with the main contract. Latham (1994) further suggested that standard tender documents and bonds are desirable.

The NEC was amended soon after the Latham report to include: Professional Services Contract (ICE, 1995) for consultants; Engineering and Construction Subcontract (ICE, 1995) for subcontractors; and the Adjudicator's Contract (ICE, 1995) for an adjudicator (ICE, 2005). The NEC3 family also includes a short form of subcontract, term services contract and a framework agreement.

A sample form of tender and form of agreement are included in the Guidance Notes (ICE, 2005). Sample forms of bonds or guarantees are, however, not included.

The use of simple language and guidance notes can enhance role clarity, hence the NEC3 comprises 'Easily comprehensible language and with Guidance Notes attached' (Latham, 1994). Guidance notes and flowcharts are available for the majority of documents in the NEC3 family. One of

the original drafting aims of the NEC contract was that it should be in ordinary language thereby being a model of 'clarity and simplicity' (ICE, 1993) and therefore readily understood by those who are not used to formal contracts or whose first language is not English. The use of ordinary language was also envisaged to make it easier to translate into other languages (ICE, 2005). Some elements of NEC2 have been translated into Chinese with consideration given to do so with NEC3.

More specifically, the emphasis is on the 'Separation of the roles of contract administrator, project or lead manager and adjudicator. The project or lead manager should be clearly defined as client's representative.' (Latham, 1994). The roles of the project manager and the adjudicator are clearly separated. The project manager is appointed by the employer (ICE, 2005) and, being the principal point of contact with the contractor, is able to give instructions, acceptances and issue certificates. He also assesses amounts due for work done to date and compensation events (ICE, 2005). Eggleston (2006) notes that the project manager has no more than an implied requirement to act impartially and only as a certifier, citing the English case of *Costain Ltd and Others v. Bechtel Ltd* 2005.

Lastly, the requirement for speedy dispute resolution was stated as 'While taking all possible steps to avoid conflict on site, providing for speedy dispute resolution if any conflict arises, by a pre-determined impartial adjudicator/referee/expert.' (Latham, 1994). Procedures to avoid conflict have been included by the introduction of early warning notices, a risk register and risk reduction meetings. Parties attend the risk reduction meetings with specific aims to avoid or reduce risks and to seek solutions to the advantage of all affected (ICE, 2005).

If any disputes arise, the contract provides a mechanism for independent adjudication. The adjudicator can be named in the contract data and has jurisdiction to resolve disputes (including any action of the project manager) with the timetable for a decision from the adjudicator normally within 4 weeks (ICE, 2005).

3.3. Payment operating mechanisms

Many disputes arise out of payment issues. Clear operating mechanisms for payment are therefore of paramount importance. The NEC3 addresses this by taking into account five of Latham's (1994) recommendations, namely (a) variations, (b) mechanisms for assessing interim payments, (c) payment period, (d) incentives, and (e) advanced mobilisation.

Variations often occur with a 'cost' consequence, so one should take 'all reasonable steps to avoid changes to pre-planned works information. But, where variations do occur, they should be priced in advance, with provision for independent adjudication if agreement cannot be reached.' (Latham, 1994). NEC3 envisages the works information to be as complete as possible. Nevertheless, changes to the works information are envisaged (see ECC clause 60.1; ICE, 2005). NEC3 also provides for quotations to be submitted and approved before implantation of any changes (see ECC clause 61.2; ICE, 2005). Any event giving rise to additional cost and/

or extension of time is identified as a compensation event (see ECC Section 6; ICE, 2005).

Latham (1994) recommended: 'Express provision for assessing interim payments by methods other than monthly valuation – milestones, activity schedules or payment schedules. Such arrangements must also be reflected in the related subcontract documentation. The eventual aim should be to phase out the traditional system of monthly measurement or re-measurement but meanwhile provision should still be made for it.'

NEC3 acknowledges various forms of interim payments. The process for interim payments is initiated by the project manager assessing the price for work done to date and other sums, namely the amount due at each assessment date with the period between assessments being governed by the 'assessment interval' (see ECC clause 50.1; ICE, 2005). Activity schedules under option A are to be used as a payment schedule. In addition, activities could be grouped together to invoke payment by milestones.

NEC3 addresses the importance of 'Clearly setting out the period within which interim payments must be made to all participants in the process, failing which they will have an automatic right to compensation, involving payment of interest at a sufficiently heavy rate to deter slow payment.' (Latham, 1994). The timetable for payments proceeds from the assessment process (see clause 50; ICE, 2005). Payment from the employer is expected to be within 3 weeks of the assessment date and, if late, attract compound interest at a pre-agreed rate (ICE, 2005).

A modern contract should also provide 'incentives for exceptional performance' (Latham, 1994). The use of target pricing under main options C and D (ICE, 2005) is designed to encourage good performance and, provided the pain/gain share is appropriate, could provide incentives for exceptional performance. Further incentives may be implemented by the use of key performance indicators (KPIs) whether as part of partnering option X12 (ICE, 2005) or by use of secondary option X20 and a pre-agreed incentive schedule (ICE, 2005). Bonuses can also be won for early completion of the works (see secondary option X6; ICE, 2005).

NEC3 allows the parties to make 'provision where appropriate for advance mobilisation payments (if necessary, bonded) to contractors and subcontractors, including in respect of offsite prefabricated materials provided by part of the construction team' (Latham, 1994). The employer can agree to make an advanced payment (for any purpose) which is then repaid in an agreed way from assessed amounts (see option X14; ICE, 2005).

Apart from the specific provisions within the NEC3 highlighted above which enabled it to meet the three pillars of a modern contract, the NEC3 structure as a family of contracts is one of its greatest strengths. This idea of a contract-suite provides flexibility in the use of the NEC3 and allows for choices of a contract type to be made, based on the dynamics of various contingency variables. The NEC3 family of contracts typically provides contracts along the

transactional–relational continuum of contracts with selection of which option to use based on specific project, client and external circumstances.

4. DEVELOPMENTS IN CONTRACT PRACTICES IN CHINA AND UK

Before the 1990s, China began to introduce a free market economy to the previously 'planned economy'. The formal relationships between the contracting parties in such a 'mixed economy' was still largely governed by the 'administration relationship'. The parties looked to their 'working relationship' and not to the contract. For the *Yifang* (construction enterprises/contractor), the motivation to become efficient and/or to turn a profit was hindered by the fact that losses were reimbursed by and profit was returned to the government or *Jiafang* (the project investor/employer).

The contract eventually signed by two Chinese parties could be only a few pages or even limited to a single page which was simply put aside or locked in a safe throughout and after execution. Over time, effected by further economic reform and open policy, the planned economy gave way to a market economy and the construction enterprises began to find themselves having to act as businesses with financial responsibility for themselves.

In the face of 'globalisation' and pressures to adopt international practices, the formalisation of contractual relationships in the Chinese construction market began in the 1980s. Various versions of the model (standard form) construction contract were prepared, for example in 1991, 1999, 2003 and 2007. The 2003 version was prepared as a result of further regulatory change including the introduction of the Contract Law in 1999 and the Bidding Law in 2000. The 2007 version was introduced subsequent to a meeting of the drafting committee held in July 2005 in Beijing coordinated by the China National Association of Engineering Consultants (CNAEC). Although no formal notes were prepared from the meeting, it was agreed to adopt the FIDIC (International Federation of Consulting Engineers: http://www1.fidic.org/bookshop/default_contracts.asp) 1999 contract as the basic reference framework. As a result of the combined efforts of the individuals and organisations on the drafting committee, a new model construction contract ('the 2007 version') drawing on Fidic 1999 was released officially in the joint names of ministries, commission and administrations involved. Both structure and content changed with the 2007 version comprising three parts: general contract conditions; particular contract conditions; and the appendices. Within the general conditions were a number of clauses largely following the format of the Fidic 1999 contract clauses.

Ironically, while the UK construction industry has been emphasising 'cooperative relationships' over formal constraints of contractual rights (e.g. to whom does the blame lie), the Chinese construction industry has been moving from an unspoken set of behavioural (cooperative) rules which govern individuals' actions in a hierarchically complex manner to a more explicit set of formal rules as spelled out in FIDIC. To paraphrase Hewitt and Bovaird (1996) in their earlier reference to contracting practices in public and private

sectors: 'It ... almost appears that the two [industries] have passed each other in the night, one [China] seeking the 'old testament' paradise of salvation by market competition, the other [UK] seeking the 'new testament' Holy Grail of salvation by collaboration, with the irony that each is seeking desperately what the other has only recently given up.'

Arguably, people's behaviours do not change in an instant (especially not social and cultural norms) and, thus, the Chinese can be expected to continually operate in their collectivistic manner within a more formal contractual setting (such as Fidic). In fact, Herbig and Martin (1998) report that 'the Chinese generally insist that a "friendly negotiations clause" be put into the contract which obligates the parties to make a good faith effort to resolve any differences before they enter formal arbitration'. Whereas Fidic provides a framework that the Chinese could appreciate (since the cooperative values and implied rules for behaviours are already embedded in Chinese society), the NEC3 may not be able to demonstrate immediate (appealing) advantages over the traditional contracts (since the Chinese may not see the need to emphasise relationships). Furthermore, Fidic has been well tried and tested within the Chinese construction industry with many reported successes (He, 2004; Lu and Wang, 2004), thus, its increasing adoption is a consequence of its track record. NEC has no such comparable record as yet and the Chinese government will be reluctant to issue any guidelines on its adoption until there is proven record of success.

Although the Chinese may seem to embrace traditional contracts, their approach is still different from the western approach to traditional contracts. The differences manifest in how Chinese managers emphasise the 'context' rather than the 'content' when they negotiate formal contracts. As Pitta *et al.* (1999) point out 'if a sticky detail comes up, Chinese managers feel that communication and relationships will solve it'. There is less concern about meeting contract conditions, since the contract is viewed as a symbol of the relationships among partners. It is reported for example how 'some Chinese managers were irate to learn that their American partners had no intention of modifying an agreement after signing' (Pitta *et al.*, 1999).

However, the flexibility provided in the NEC3 family through its many options and contract forms may lead to its increased use in international contracts. It is likely that oriental societies such as China will gladly engage in the use of NEC3 in the future as it encompasses a cooperative rationale consistent with their culture while also still containing some transactional contracting features that appeal to such societies (i.e. the idea of a transactional–relational continuum embedded in NEC3).

5. CONCLUSIONS

This paper reviewed the latest edition of the Engineering and Construction Contract (ICE, 2005) against the Latham requirements for a modern contract. It is evident that the NEC family is almost fully compliant with the principles of Latham's modern contract interpreted here as comprising three pillars: fairness, roles and functions of project participants, and payment operating mechanisms (Barnes, 1996; Latham, 1994). The aim in future research is to further

the debate of whether the NEC3 family, with its compliance with these principles, could be of use in developing relationships and furthering project management performance. This is particularly relevant in the light of the variety of problems resulting from the limitations of traditional project delivery systems in construction including the inappropriate allocation of risk and reward under those systems.

In recent years, researchers and practitioners have drawn on international lessons in construction procurement, subsequently pointing out the relevance of partnering and cooperation. Preliminary studies have suggested that relational contracting (the NEC3 family being one of the standard forms used in this field of contracting) could be effective provided appropriate countermeasures are adopted to eliminate obstacles to such form of contracting. Nevertheless, further research is required to analyse the legal and cultural framework of the construction markets in oriental and western societies in order to identify: (a) whether Latham's requirements for a modern contract as

outlined here are appropriate, in particular, for multinational projects; and (b) any shortfalls in NEC3, with recommendations for amendments, to promote relational contracting principles.

REFERENCES

- Alsagoff SA and McDermott P (1994) Relational contracting: a prognosis for the UK construction industry? In *Proceedings of CIB W92, Procurement Systems. East Meets West*, (Rowlinson S (ed.)). Department of Surveying, The University of Hong Kong, Hong Kong, CIB Publication No. 175, pp. 11–19.
- Anvuur AM (2008) *Cooperation in Construction Projects: Concepts, Antecedents and Strategies*. PhD thesis, Department of Civil Engineering, The University of Hong Kong, Hong Kong.
- Banwell H (1964) *The Placing and Management of Contracts for Building and Civil Engineering Work*. Her Majesty's Stationery Office, London, UK.
- Barnes M (1996) The new engineering contract – an update. *International Construction Law Review* 13(1): 89–96.

APPENDIX: REQUIREMENTS FOR A MODERN CONTRACT

	Requirements	Core clauses/options
Fairness	Duty of fair dealing with all parties	I 10.1 26.3
	Teamwork to achieve win–win solutions	16.3 11.2
	Risk allocation	80.1
	Trust funds	Contract data part I NEC2 ECC option clause V NEC option Z
Roles and functions of project participants	Integrated package of documents	21.1 2 Options A to F NEC2 PSC NEC2 ECS NEC2 AC NEC3 ECSC NEC3 ECC
	Simple language and guidance notes	NEC3 guidance notes and flowcharts
	Role separation	14.4
	Speedy dispute resolution	Adjudication table at option W1 16.3 Main option clause W1 (outside UK) Main option clause W2 (within UK)
Payment operating mechanisms	Variations	60.1 (8) 61.2 62.1 60 to 65
	Mechanisms for assessing interim payments	50.1 Option A payment schedule
	Payment period	51 50
	Incentives	Contract data part I Target pricing options C and D Option X12 KPIs Option X20 pre-agreed incentive schedule Option X6
	Advanced mobilisation	Option X14

AC, adjudicators' contract; ECC, engineering and construction contract; ECS, engineering and construction subcontract; ECSC, engineering and construction short contract; KPIs, key performance indicators; NEC, New Engineering and Construction Contract 1st edition; NEC2, New Engineering and Construction Contract 2nd edition; NEC3, New Engineering and Construction Contract 3rd edition; PSC, professional services contract; TSC, term service contract

- BCA (Building and Construction Authority) (2005) Building and Construction Industry Security of Payment Act, Chapter 30B. Singapore Government, Singapore. See <http://www.bca.gov.sg> for further details (accessed 29/09/2010).
- Costain Ltd and Others v. Bechtel Ltd* [2005] TCLR 6 and [2005] BLM Vol. 22, No. 8 p. 1 TCC.
- Duberley J (1997) Factors impacting upon the nature of contractual relationships. *ESRC Research Programme: An Organisational Behaviour Approach to Local Government Contracting*. Sheffield Hallam University, Sheffield, UK, working paper.
- Egan J (1998) *Rethinking Construction*, Report of the Construction Task Force to the Deputy Prime Minister, John Prescott, on the scope of improving the quality and efficiency of UK construction. Department of Environment, Transport and the Regions, London, UK.
- Egan J (2002) *Accelerating Change, A Report by the Strategic Forum for Construction*. Rethinking Construction, London, UK.
- Eggleston B (2006) *The NEC3 Engineering and Construction Contract – a Commentary*. Blackwell Science, Oxford, UK.
- Emmerson H (1962) *Survey of Problems before the Construction Industries*. Her Majesty's Stationery Office, London, UK.
- Florice S and Lampel J (1998) Innovative contractual structures for inter-organisational systems. *International Journal of Technology Management* 16(1/2/3): 193–207.
- Gould N, Capper P, Dixon G and Cohen M (1999) *Dispute Resolution in the Construction Industry*. Thomas Telford, London, UK.
- Gouldner AW (1960) The norm of reciprocity. *American Sociological Review* 25(2): 161–178.
- Grandori A and Neri M (1999) The fairness properties of interfirm networks. In *Interfirm Networks: Organization and Industrial Competitiveness* (Grandori A (ed.)). Routledge, London, UK, pp. 41–66.
- Green SD, Larsen GD and Kao CC (2008) Competitive strategy revisited: contested concepts and dynamic capabilities. *Construction Management and Economics* 26(1): 63–78.
- He B (2004) FIDIC new conditions of contract and their applying prospects for the construction industry in China. *Journal of Harbin Institute of Technology* 11(3): 323–327.
- Herbig P and Martin D (1998) Negotiating with Chinese: a cultural perspective. *Cross Cultural Management* 5(3): 40–54.
- Hewitt F and Bovaird T (1996) Trends in purchasing patterns: a comparison between public and private sectors. Paper presented to *International Research Symposium on Public Services Management*, Aston Business School, Aston University.
- ICE (Institution of Civil Engineers) (1993) *The New Engineering Contract 1st Edition*, published as a series of documents (including the New Engineering Contract, Main Options A to F, The New Engineering Subcontract, Guidance Notes and Flow Charts). Thomas Telford, London, UK.
- ICE (1995) *The New Engineering Contract 2nd Edition*, published as series of documents (including the Engineering and Construction Contract, Main Options A to F, The Engineering and Construction Subcontract, Professional Services Contract, Adjudicator's Contract, Guidance Notes and Flow Charts). Thomas Telford, London, UK.
- ICE (2005) *The NEC 3rd Edition*, published as a family of standard contracts (including the NEC3 Engineering and Construction Contract, NEC3 Options A to F, NEC3 Engineering and Construction Subcontract, NEC3 Engineering and Construction Short Subcontract, NEC3 Professional Services Contract, NEC3 Engineering and Construction Short Contract, NEC3 Adjudicator's Contract, NEC3 Term Service Contract, NEC3 Framework Contract, Guidance Notes and Flow Charts). Thomas Telford, London, UK.
- ICE (2008) *NEC3 OGC Fair Payment Practices Project Bank Account*. Thomas Telford, London, UK. Also http://www.neccontract.co.uk/documents/OGC_v3%201.pdf (accessed 16/06/2008).
- Jin XH and Ling FYY (2005) Model for fostering trust and building relationships in China's construction industry. *Journal of Construction Engineering and Management*, ASCE 131(11): 1224–1232.
- Kadefors A (2005) Fairness in interorganizational project relations: norms and strategies. *Construction Management and Economics* 23(8): 871–878.
- Latham M (1993) *Joint Government/Industry Review of Procurement and Contractual Arrangements in the United Kingdom Construction Industry – Interim Report: Trust and Money*. Her Majesty's Stationery Office, London, UK.
- Latham M (1994) *Constructing the Team, Final Report of the Joint Government/Industry Review of Procurement and Contractual Arrangements in the United Kingdom Construction Industry*. Her Majesty's Stationery Office, London, UK.
- Liu AMM and Fellows R (2009) Cooperative relationships in partnering projects in Hong Kong. In *Joint Ventures in Construction* (Kobayashi K, Rashid KA, Ofori G and Ogunlana S (eds)). Thomas Telford, London, UK, pp. 53–61.
- Lu Y and Wang SQ (2004) Project management in China. *Southeast Asia Construction* Sept/Oct: 158–163.
- Lyons B and Mehta J (1997) Contracts, opportunism and trust: self-interest and social orientation. *Cambridge Journal of Economics* 21(2): 239–257.
- Macaulay S (1963) Contractual relations in business: a preliminary study. *American Sociological Review* 28(1): 57–66.
- Macneil IR (1974) The many futures of contracts. *Southern California Law Review* 47(3): 691–816.
- Macneil IR (1983) Values in contracts: internal and external. *Northwestern University Law Review* 78(2): 340–418.
- Murray M and Langford DA (2003) *Construction Reports 1994–98*. Blackwell Science, Oxford, UK.
- NSWDC (New South Wales Department of Commerce) (2004) *Review Report of Payment Problems*. NSWDC, Sydney, New South Wales, Australia.
- OGC (Office of Government Commerce in the United Kingdom) (2007) *Construction Procurement – Guide to Best Fair Payment Practices*. OGC, London, UK.
- Pitta DA, Fung HG and Isberg S (1999) Ethical issues across cultures: managing the differing perspectives of China and the USA. *Journal of Consumer Marketing* 16(3): 240–256.
- Rahman MM and Kumaraswamy MM (2002) Joint risk management through transactionally efficient relational contracting. *Construction Management and Economics* 20(1): 45–54.
- Smyth H (2008) The credibility gap in stakeholder management: ethics and evidence of relationship management. *Construction Management and Economics* 26(6): 633–643.

- Teece DJ, Pisano G and Shuen A (1997) Dynamic capabilities and strategic management. *Strategic Management Journal* 18(7): 509–533.
- Walker B and Davis H (1999) Perspectives on contractual relationships and the move to best value in local authorities. *Local Government Studies* 25(2): 16–37.
- WALRC (The Law Reform Commission of Western Australia) (1998) *WALRC Final Report on Financial Protection in the Building and Construction Industry*. WALRC, Perth, Western Australia.
- Watts V and Scrivener J (1992) Review of Australian building disputes settled by litigation. In *Construction Conflict: Management and Resolution* (Fenn P and Gameson R (eds)). Chapman Hall, London, UK, pp. 209–219.
- Wu J, Kumaraswamy M and Soo G (2008) Payment problems and regulatory responses in the construction industry: mainland China perspective. *Journal of Professional Issues in Engineering Education and Practice* 134(4): 399–407.

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