

ATTITUDES TO SUSTAINABLE CONSTRUCTION AND CONTRACTS: INTERNATIONAL PERSPECTIVES AND APPROACHES

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This paper explores attitudes to sustainable construction procurement and contracts in different countries. This work is concerned with the incorporation of so called "green construction" clauses within specific construction contracts. The paper looks at the featured countries noting similarities and differences in approach. The chosen countries are the UK, Sweden, USA and Australia respectively. This work shows that interest in green construction procurement and contracts is of international interest and is cross-cultural yet wide differences exist in perspective and approaches taken. Some countries have gone much further in introducing green contract conditions whilst others appear to remain unsure and hesitant.

Keywords: contracts, green building, sustainability, procurement.

INTRODUCTION

It has been acknowledged that the planet faces a major problem due to climate change and that the construction industry plays an important part in combating the cause and effects of climate change. Taking the UK as an example, Halliday (2008) states:

"The UK construction industry provided one tenth of the UK's GDP and employs 1.4 million people. It is responsible for over 25% of all industry-related pollution incidents. Construction and demolition waste represent 19% of UK waste. The energy used in constructing, occupying and operating building is responsible for 50% of the UK's greenhouse gas emissions". Clearly the construction industry can make an impact in protecting the environment.

This paper explores attitudes to sustainable construction procurement in different countries. The inspiration for this work arose from the growing international interest in "green procurement" generally and more specifically the use of "green construction" clauses with construction contracts.

The first part of the paper discusses the concept of attitude. "Attitude" is a contested term in research as there is no unanimous agreement amongst commentators. The conceptualization of attitude can be discussed through a multitude of voices. The second part of the paper poses the question "whose attitudes to green procurement and green contract clauses ought to be considered?" The answer to this question is not as simple as it may appear. On the face of it, the answer might be broadly expressed as

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those having an interest in the construction industry who might be referred to as “stakeholders”. The question of who is a stakeholder and who is not a stakeholder has not been settled in construction research. A perusal of the literature reveals different levels of stakeholders. This paper acknowledges that there are a potentially large number of stakeholders involved in construction but focuses on those directly involved in the construction process.

The questions posed by these contested issues have an impact on methodology which forms section 3. It can be argued that in construction-related research there should be no single research method. Not everyone would agree with this statement as there have been a number of opposing views put forward in journals and other publications. The final part explores the progress (or lack of it!) of green procurement and green contract clauses in four countries. The object of these explorations is not to produce generalizations or statements of principle but to stimulate interest, discussion and /or generate hypotheses within a community of practice (Lave and Wenger 1990).

ATTITUDES CONSIDERED

It is pertinent to reflect on the concept of “attitude”. This concept has proved problematic over the years. Pratkanis *et al.* (1989) proposed that

“An attitude is a mental and neural state of readiness, organized through experience, exerting a directive or dynamic influence upon the individual’s response to all objects and situations which to it is related”. (p72)

An important point of serious debate concerning the conceptualization of attitude is whether the mental and neural states of readiness have to be stable over a long period of time and have to be stored in the long term memory to qualify as an attitude, or whether the mental and neural states are fleeting and transient. Bohner and Wänke (2002) contrasted the “file-draw model” which treats attitudes as mental files which individuals consult for the evaluation of the object in question; with the idea of attitudes being “temporary constructions” which arise at the time an evaluative judgement is needed. Many studies have been carried out to investigate the conceptualization of attitude. However, as Bohner and Wänke (2002: 17) concluded, “Contemporary research acknowledges that an attitude may serve different functions for the same persons at different times”.

It is generally acknowledged that attitudes are important because they influence behaviour (Albarracin *et al.* 2005). However as Herek (1999: 326) said: “No consensus has emerged for a definitive catalogue of attitude functions”. Despite this obvious limitation it is important to adopt a pragmatic interpretation of “attitude”. The New Oxford English Dictionary defined attitude as: “Attitude: noun, a settled way of thinking or feeling about someone or something, typically one that is reflected in a person’s behaviour”. In the context of this paper this means that countries have a positive attitude if they have taken steps to introduce green procurement policies within their respective national boundaries. In this way, the adoption of green procurement, at the very least, represents some “settled way of thinking or feeling” in that the attitude of these countries are that they feel green procurement is important and they are moved towards doing something. However, it is fair to acknowledge that not all countries deal with green issues in the same way.

WHOSE PERSPECTIVE?

A pertinent question to be asked is “From whose perspective ought to green procurement and green contract clauses be considered?” The answer would appear to

be those having some connection with the construction industry that might be legitimately described as “stakeholders”. Stakeholders bring multiple voices and perspectives into the prominence. Atkin and Skitmore (2008) noted that stakeholders can be either internal or external. Internal stakeholders are those directly involved in decision processes whilst external stakeholders are those affected by an individual or organization’s activities in a significant way. Atkin and Skitmore (2008) cite several examples of external stakeholders such as neighbours, the local community, and general public and local authorities. The perspective of architects, surveyors, engineers, contractors and sub-contractors is very important when considering green procurement and green contract conditions because this affects their daily work. For example, where building owners require a particular project to meet specific environmental performance then the architects, surveyors, engineers, contractors and sub-contractors are responsible for delivering the owners’ requirements. However, to what extent does this responsibility translate into legal liability has not been settled. It can be argued that many features of green procurement are voluntary and therefore it is difficult to affix legal liability to voluntary practices. On the other hand, where environmental performance has been incorporated into contracts it is more difficult to argue against the imposition of liability should the performance standards not be met.

METHODOLOGY

The so-called “paradigm wars” have been debated extensively and passionately by researchers in many disciplines (Oakley 1999). Construction related subjects have not been immune to the “wars” or their aftermath; however, the purpose of this paper is not the place to (re-) ignite hostilities. Nevertheless, some discussion of methodological stance is appropriate in which to frame this work.

Seymour *et al.* (1997) argued that an “interpretive” approach was a suitable methodology for construction-related research. They argued that fundamental assumptions (in their view) of a rationalist paradigm, was invalid for construction related research as it was based upon the need to critique the use of causal relationships in findings. Causal relationships were said to dwell “exclusively on the tools of control” and subsequently ignore (to use Seymour *et al.*’s terminology) “everyday life”. They proposed an interpretive alternative based on Max Weber’s ideas on *Verstehen* which roughly translates as “meaningful understanding”.

Seymour *et al.* (1997) concluded that the researcher’s goal in construction-related research was to report how person’s worlds were constructed and implicitly rejected the notion of a single truth. They set out their position as shown in Table 1 and called for a debate on research methodology in construction related research.

Wing *et al.* (1998) contended that Seymour and Rooke’s argument was incorrect on the grounds that construction-related research “ought not to reject one paradigm at the expense of another.” They felt that as an emerging discipline construction related research might strive to include different methodologies and held that: “it is difficult to argue in favour of any single approach based purely on epistemological grounds as to what constitutes knowledge as this is still an unsolved philosophical issue” (p99).

Table 1: Verstehen Understandings in Social Research (related to construction)

1	The explication of inter-subjectively established meaning is the aims of social research
2	Such explication requires the researcher to refrain from constructing theoretical explanations (including causal ones, since these impose the researcher's meanings at the expense of those of the subjects of research)
3	Therefore the final test of the validity of an analysis is if it can be demonstrated that such an analysis is the analysis which is used by the subjects of the analysis in analysing their own situations.
4	There is a tension between these academic principles and the principle that research findings should be useful to practitioners and vice versa.
5	The tension described in 4 above can be managed on the basis that all findings are produced in specific purposes for specific purposes
6	The research should be capable of communicating a knowledge of how others in the (construction) process see that process in a way that is useful to practitioners
7	Research should enable practitioners to reflect upon their own practices in such a way to facilitate their attempts to improve those practices

Wing *et al.* (1998) suggested that interpretive methods could be used to inform and conceptualize problems which might subsequently be investigated by rationalistic investigation. However they contended that there was an "order of knowledge" which justified the need to generate hypotheses, which, in their view, were necessary to understand the real world. Whilst the responses to Seymour *et al.*'s call for a debate by Wing *et al.* (1998) might be considered conciliatory in nature, a more robust response came from Runeson (1997) who vehemently criticized interpretive methodology and said "positivist research methods are our best insurance against bad research" (p19). So the arguments raged on.

It is possible that the answer lies beyond construction-related subjects, perhaps from other scholars in different subject areas. Johnston (2003) described her experiences in developing a theoretical framework using multiple theories instead of a single theory in her work as an educational researcher. She said:

"In practical reflection ... theories are selected and utilized eclectically in terms of their perceived relevance for discerning and discriminating the practically significant features of the situation. Their selection and use is subordinated to the practitioner's quest to understand the problematics of their practice in a situation as a totality" (Johnston 2003: 370)

Denzin and Lincoln (1994), Ely *et al.* (1997) and Lincoln and Guba, (2000) have described interpretive frameworks as a bricolage with various components "borrowed and adapted to fit the needs of a particular research project" (Johnston 2003: 371).

The first use of bricolage is attributed to Levi-Strauss who used the idea of bricolage to contrast the analytical methodology of Western science with what he referred to as the science of the concrete in primitive societies (Levi-Strauss 1968). A bricolage was used as a research framework when considering green procurement and green construction clauses. As Denzin and Lincoln (1994) observed:

"The product of the bricoleur's labour is a bricolage, a complex, dense, reflexive, collage like creation that represents the researcher's images, understandings and interpretations of the world or phenomenon under analysis. This bricolage will...connect the parts to the whole, stressing the meaningful relationships that operate in the situations of the social worlds studied." (p3)

Lincoln and Guba (2000: 167) argued that research presents a "blurring of paradigms" and that this provides opportunity for "... interweaving of viewpoints, for the

incorporation of multiple perspectives and for borrowing or bricolage, where borrowing seems useful, richness enhancing or theoretically heuristic"

This has much in common with Geertz's idea of blurred genres (Geertz 1983) and the researcher as a bricoleur presents an image of a "pieced together, close-knit textual product" (Denzin and Lincoln 1994: 3). Beach (2001) argued that representation in Art helped to communicate ideas. In this respect the idea of the use of the bricolage can be superimposed on a work by the artist Mondrian. Law (2004) noted the use of collage (based on the Mondrian representation of Art) "to connote the ad hoc" and saw that this had the capacity to:

"... embrace a wide variety of incompatible components. It also has the virtue of connoting active and evolving practices rather than passive and static structure" (Law, p117).

Thus what emerged was a bricolage where voices, experiences, actions and most importantly attitudes from four separate countries are considered as part of a collage. As Turkle and Papert (1992) noted 'Bricoleurs use a mastery of associations and interactions'".

FOUR LOCATIONS

UK

In 1990 The Building Research Establishment (BRE) introduced an assessment tool for buildings known as the Building Research Establishment Environmental Assessment Method (BREEAM). Whilst BREEAM represents a voluntary code it has been very influential in framing the mandatory Building Regulations. In 2008 BREEAM underwent a major overhaul in the face of criticism. The major changes introduced into the so called BREEAM 2008 were:

1. A two stage assessment process (involving Design and Post Construction)
2. The introduction of mandatory credits
3. A new category of "Outstanding" was introduced. Previously the highest assessment category was "Excellent".

From March 2008, the UK government introduced regulations for new dwelling known as the Code for Sustainable Homes. These and other measures (such as stricter compulsory Building Regulations to be introduced in October 2010), might be seen as evidence of the UK government's attitude to green issues affecting the construction industry.

The most important legislation passed by the UK government in recent years is the Climate Change Act 2008. This wide ranging legislation affects all aspects of life in the UK and does not merely affect the construction industry although it will have a large impact on it. The Climate Change Act 2008 is a statement of intent by the UK government which shows that the government is taking sustainability issues seriously.

In May 2009, the Joint Contracts Tribunal (JCT) the body responsible for production of the majority of construction contracts in the UK, published a document entitled "Building a Sustainable Future Together" (BSFT). The BSFT was issued as a "guidance note" and contained advice for the insertion of green contract clauses into JCT contracts. Almost one year later, reaction to BSFT has been muted. The guidance note has been welcomed by some as recognizing that the JCT has taken the initiative to bring sustainability to the construction agenda through publication. However, some commentators have expressed the view that the so-called "green clauses" are extremely easy to avoid and have doubted whether the provisions as currently drafted

are actually legally enforceable (Donohoe 2010). It is too early to say whether the publication of BSFT has involved a change of attitude among UK construction stakeholders. What can be said, however, is that leading firms of UK construction lawyers are not reporting an upsurge in their clients demanding clauses modelled on BSFT. Some lawyers have expressed the view that many private sector clients are cautiously waiting for the public sector to take the lead in this area.

Sweden

Varnäs *et al.* (2009) reported that in the Swedish construction industry apply environmental procurement preferences but that their effectiveness is hard to assess. Varnäs and her colleagues maintain that environmental preferences can be characterized as “basic environmental requirements” (sic) and that these are often in the context of substances and materials which are hazardous. The criterion for carrying out environment impact assessments does not always correspond to environmental aspects of a building. For example, energy use is not always included in the procurement of building contracts although it is “the most significant aspect for buildings”.

Varnäs *et al.* (2009) maintain that among the reasons for construction clients to limit environmental preferences in contracts are the fear of introducing limitations, high costs or time-consuming bureaucracy and lack of knowledge. It was observed that the procurement of construction contracts differs from procurement of products and that as far as the Swedish experience is concerned there are limited opportunity to judge whether or not tenderers for construction projects fulfil environmental requirements. It was found that where environmental evaluation criteria were applied, they seldom affected the outcome of the evaluation. To conclude, the attitude of stakeholders in the Swedish construction industry are supportive of green procurement to a large extent but there are some difficulties and uncertainties to be resolved before green tendering or contract clauses can be addressed.

USA

In the USA it has been reported that contractors require a complex set of documents to manage construction projects (Dingwell 2010). Both the American Institute of Architects (AIA) and the Association of General Contractors (AGC) publish what are referred to as “form contracts” to help members address the “risks of green certification”. These risks are not exhaustive but are thought to include the use of new materials, design techniques, the performance of the building and the ability to achieve third party certification.

The issue of third party certification is seen to be of growing importance in the USA with various countries producing certification systems such as the Building Research Establishment Environmental Assessment Management (BREEAM) tool in the UK and Green Star in Australia. In the USA the major certification system would appear to be the rating scheme promoted by the United States Green Building Council known as Leadership in Energy and Environmental Design (LEED).

The AIA publishes AIA B214-2007 which sets out the duties and responsibilities of architects where their client requires LEED certification on a project. The AGC publishes a series of documents which relate to the employer / contractor relationship. These are called “ConsensusDocs”. One of the most relevant documents is entitled “ConsensusDoc 310 Green Building Addendum” which identifies direct stakeholders involved in the monitoring, co-ordination and management of the construction project. A most important feature of ConsensusDoc is the compulsory engagement of a Green

Building Facilitator (GBF) who assists the architect in incorporating green features in the design. Dingwell (2010) states “Notably it is the GBF who bears the liability if the green building goals are not achieved”.

The impact of green procurement and green contract clauses in the context of the US experience has led to the word “leedigation” being used by some American lawyers. The first “leedigation case” involved Shaw Development Properties v Southern Builders (2008). In this case the developer entered into an agreement with the State of Maryland whereby the developer would be entitled to \$635,000 in tax breaks provided the proposed building met LEED certification at the Silver level. The developer (Shaw) sued the contractor (Southern) for loss of tax breaks from the State of Maryland when the building failed to obtain the required certificate. Unfortunately this case was settled out of court so we do not have a law report to study, however it gives an indication of the attitude of stakeholders and how they might act if green contract clauses are legally enforceable.

On the plus side major cities in the USA have introduced compulsory green building regulations and codes. Many States have introduced substantial tax breaks and other incentives to encourage sustainability in building. There does not seem to be quite the same level of “economic encouragement” in the UK or Sweden. However, on the negative side, there is an increased likelihood of disputes and litigation (or even “leedigation”) where green procurement or green construction clauses are used.

Australia

A landmark framework agreement was made between the Governments of Australia and New Zealand to regulate business with the premise that the “framework should be integrated into business as usual procurement practice” (Australasian Procurement and Construction Council 2007). The framework included six major principles which encouraged (amongst other things) strategies to avoid unnecessary consumption, the use of products and services which have lower environmental impacts than competing products, support for businesses that demonstrate innovation and sustainability, and support suppliers to government who behave ethically etc. Whilst such terms as “sustainability” and “ethically” are not defined, the framework gives gentle encouragement rather than the imposition of mandatory rules. There is neither mention of how “sustainability” etc. is to be measured nor any mention of the consequences if the framework principles are broken.

Despite the voluntary nature of the framework, it has been reported in Australia that “building owners and operators are increasingly demanding that buildings be green. Whilst the catalyst for this may have been climate change and a desire to embrace ecologically sustainable development, its proliferation is more likely to have been driven by anticipated commercial returns” (Wood 2007).

There are several environmental rating tools used in Australia including BREEAM and LEED developed in UK and USA respectively. However, two of the most widely used rating systems are Green Star operated by the Green Building Council of Australia (GBCA) and the National Australian Built Environment Rating System (NABERS) which is operated by the New South Wales Department of Environment and Climate Change and was previously called The Australian Building Greenhouse Rating scheme (Mason Sier Turnbull 2009). The Green Star scheme gives a “one time” rating provided the project is registered before completion. Certification varies from four stars (best practice), five stars (Australian Excellence) and six stars (World Leadership). Buildings which score below four stars are not certified.

The NABERS system is similar in many ways to Green Star but applies only to offices and hotels. It is a voluntary scheme however it is possible to enter into a “commitment agreement” whereby water consumption, energy consumption and other matters can be reviewed after completion and the review is valid for 12 months and thereafter there is an annual inspection scheme to renew the rating.

There are no standard green construction clauses at present in Australia. Indeed, it is by no means settled who is responsible for achieving the Green Star or NABERS rating. According to MST lawyers it would appear that risks of achieving certification lie with stakeholders and, if appropriate, the risks of maintaining a rating also ought to be shared between stakeholders. However, the extent or distribution of the share of the risk is not settled, e.g. if there are four internal stakeholders does each take a 25% share of the risk? If not, how ought the share of risk to be allocated? Generally lawyers are cautious and advise such as the points stated below are not untypical. Below is an extract from a lawyer’s website concerning “green building”:

Generic provisions as to the achievement of one type of rating or another simply ask for trouble, rather there needs to be a precise description. All parties need to be on notice of the commitments in respect of Green Star or NABERS as the case may be and their obligations need to be contractually stipulated back to back with the relevant ratings process. (Mason Sier Turnbull 2009)

As Wood (2007) eloquently stated:

“Project participants and contracting parties [i.e. internal stakeholders] need to be careful in their contractual arrangements to agree penalties for failure to achieve a specified rating. Careful consideration should be given to what factors could influence the ability to achieve a specified rating. If a party agrees to a penalty for failure to achieve the specified rating, there should be appropriate carve outs if the failure arises due to a matter beyond that parties control”.

To summarize, it would be fair to say that that the attitude of stakeholders in Australia appears that whilst there has been an acceptance of green procurement where desired by developer and a use of rating systems for certain developments, there is still some uncertainty regarding contract conditions and liability.

DISCUSSION

DeLeuze and Guatani (1987) spoke about social scientific theories as being assemblages of theoretical presuppositions, empirical data, research practices, interpretive judgements, voices and social strategies. The assemblage used in this paper has taken the form of a bricolage with due deference paid to the interpretive turn. Within the bricolage there are components from four countries and treatment of green procurement and green construction contract clauses. When framing any discussion one must guard against so-called “ascertainment bias” which is “bias arising from treating known cases as statistically representative of all cases” (Gomm 2008: 197). Despite this caveat, there are certain features that emerge from the bricolage and might form the basis of interesting further work:

1. In all of the four countries there is a great interest in green procurement systems and contract arrangements. To carry out construction works in a way which minimizes harm to the environment is considered to be desirable.

2. Countries are using green rating tools. However the rating tools are many and varied. There is no single agreed global rating system and it is often difficult to make comparisons. There is a perception that some of the rating systems are being used for commercial reasons rather than environmental reasons.
3. There are concerns that green construction contract clauses will lead to litigation. This has happened already in the US.
4. The imposition of sanctions and the apportionment of liability are tricky legal issues for stakeholders and their lawyers to deal with. It is by no means certain that standard contract conditions are the appropriate way to deal with such issues, although two countries (US and UK) have gone further than others.

CONCLUSION

This paper has presented a bricolage based on materials gleaned from four countries to explore green procurement and green construction contract clauses as seen in different locations. The paper has looked at attitudes to green procurement and green contract clauses in four countries. The attitude displayed in the USA would appear to be the strictest in that there are green assessment tools directly linked to contract conditions which have already led to legal action. In the UK the attitude to green procurement and contract conditions seems less stringent than the USA. In the UK, although there are green assessment tools and mandatory building regulations and model green contract conditions, the latter are merely guidelines and do not appear to contain any legally enforceable sanctions should the green contract conditions be broke. In the case of Australia and Sweden there appears to be an attitude of "wait and see". Whilst both Australia and Sweden understand the importance of green procurement, Australia has developed her own green assessment tools but has not yet introduced green contract conditions into building contracts. In Sweden there appears to be a debate as to whether to adopt green assessment tools developed in other countries or produce their own. However, building regulations and codes in Sweden provide evidence of a very serious attitude taken towards environmental issues, for example the development of the eco-suburb in Hammarby Sjöstad in Stockholm (Freudenthal, 2010). Similarities and differences in the four countries' approaches to green procurement and green construction contract clauses have been noted. It is hoped that this work will act as a springboard for further collaboration and the generation of meaningful research not only in the countries featured, but in others.

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