



Sustainable Development in the Construction Industry

Sustainable provisions in construction contracts

Introduction

1. During today's seminar, you will have heard wide-ranging discussions about what sustainability means and how sustainability and environmental concepts are being adopted within the construction industry. The purpose of this paper is not to enter into that debate but rather to consider whether it is possible to adopt those concepts within a contractual framework. Of course it is worth repeating at the outset the well-known definition of sustainability provided by the Brundtland Report:

“Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”

2. So how can that be reflected within construction contracts? Every project needs a clear set of contractual requirements and obligations so that all the participants know where they stand. Remember that a contract should set out:
 - (i) what each party must do;
 - (ii) what each party receives;
 - (iii) the time for performance;
 - (iv) (sometimes) consequences of failure; and fundamentally
 - (v) where risk is to fall.
3. Remember too that there are three basic stages to any construction project:
 - (i) design;
 - (ii) build; and
 - (iii) operation.
4. Construction projects and contracts are of course already subject to certain sustainability provisions. The Government has introduced a number of legislative provisions, (some of which are mandatory some of which are voluntary) which fall within the sustainability umbrella. This will continue as the Government is committed to improving resource efficiency and sustainability as part of its drive to address climate change. These provisions include:
 - (i) the Site Waste Management Plans Regulations 2008, SI 2008/0314;
 - (ii) Building Regulations - which were most recently amended on 9 September 2008 through the:

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- Energy Performance of Buildings (Certificates and Inspections) (England and Wales) (Amendment No.2) Regulations 2008, SI 2008/2363;
 - Housing and Regeneration Act 2008 section 317: Time Limit for Prosecutions of Breaches of Building Regulations and the Housing and Regeneration Act 2008 (Commencement No. 1 and Transitional Provision) Order 2008; and
 - The Building (Electronic Communications) Order 2008 (SI 2008/2334);
- (iii) Landfill Tax introduced in Finance Act 1996, Aggregates Levy introduced in Finance Act 2001, Climate Change Levy introduced in Finance Act 2000; and
- (iv) Code for Sustainable Homes 2008 (Department for Communities and Local Governments) - Voluntary.
5. To take the first of these - the Site Waste Management Plans Regulations the Government decided that something needed to be done, after an Environment Agency study¹ identified that:
- (i) over 50% of all landfill in the UK could comprise construction waste;
 - (ii) 10 million tonnes of new construction products are wasted every year, at a cost of over £1.5 billion; and therefore
 - (iii) a 1% reduction could mean annual savings of £15 million.
6. Accordingly, the Government has set a target to reduce waste disposed of to landfill from construction-related activities by 50% by 2012.² The Regulations aim to reduce the amount of waste and encourage the use of recycling. Any construction project with an estimated cost exceeding £300,000 must have a Site Waste Management Plan ("SWMP") in place before the construction works begin. The SWMP, which must be updated every six months,³ must set out the amount and type of waste that it is estimated will be, and is in fact, produced on a construction site and how it will be reused, recycled or otherwise disposed of. There are more onerous obligations on projects with a value of more than £500,000.
7. If drafting a construction contract, careful steps must be taken to set out who is responsible for complying with these regulations. Once construction work has commenced, it is the principal contractor's responsibility to update the plan and to ensure that all other contractors and workers on-site are aware of it and its location. However, the principal contractor does not necessarily mean the main contractor. It simply means the contractor identified as such in the plan.
8. This means that those drafting tenders and construction contracts must take the following into account:
- (i) The need to identify the client and principal contractor and the need for the contract to contain a declaration that the client and the principal contractor will take all reasonable steps to comply with the duty of care regime in the Environmental Protection Act 1990 and the Environmental Protection (Duty of Care) Regulations 1991 and that waste will be managed appropriately;
 - (ii) The need to identify who is responsible for drafting and updating the SWMP;

1. The Economic and Environmental Benefits of Resource Efficiency in Construction, March 2008

2. The increase in the standard rate of landfill tax on waste disposed to landfill to £32 per tonne in 2008/09 and the planned yearly increases of £8 per tonne until at least 2010/11 are part of this drive.

3. During the construction works, the SWMP must be kept at the site office or at site. It must then be retained by the principal contractor for two years after the completion.

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- (iii) The estimated project value;
 - (iv) What decisions have been made in relation to the nature of the project, its design, construction method or the materials to be used in order to reduce waste and/or recycle materials? Should targets be set? In other words, perhaps, what thought has been given to sustainability provisions?
 - (v) Identify the different types of waste that will be produced in the course of the project, estimate the quantities of each different waste to be produced, and describe what waste management action will be taken; and
 - (vi) Who is to be responsible for removing the waste? Who is to be responsible for the costs of removing the waste? Who takes the risk for delays caused by the removal of waste or the need to recycle materials?
9. There are inevitably penalties for non-compliance. The consequences of the failure to keep and/or update a SWMP include: fixed penalty notices, or on conviction in the Magistrates' Court a fine of up to £50,000. (On conviction in the Crown Court an unlimited fine can be imposed.) Potentially, as the breach of the Regulations is an environmental offence, directors and officers of the companies concerned may face individual liability.
10. Of course, most contracts contain fall-back provisions that parties must comply with local laws.
- (i) Clause 1.13 of the FIDIC Red Book notes that:
"The Contractor shall, in performing the Contract, comply with applicable Laws."
 - (ii) Clause 2.1 of the JCT Standard Form of Building Contract notes that:
"The Contractor shall carry out and complete the Works in a proper and workmanlike manner and in compliance with the Contract Documents, the Health and Safety Plan and the Statutory Requirements."
11. These clauses are saying that a contractor must comply with all applicable environmental laws and regulations in force at the time, in relation to the particular contract. Therefore to take the example of the Site Waste Management Plan Regulations, you could simply add a reference to the SWMP, in clause 2.12 of the JCT Form.

The design and tender stage

12. Equally, of course, the need to consider the requirements of the Site Waste Management Plans Regulations needs to be taken into account quite carefully during the planning and tender stage of the project. And it is here that sustainability provisions will come to the fore. Yes, every project must comply with the applicable local legislation, but just how far do you want to go?
13. Of course, there is no reason why the tender itself should not be part of the drive to sustainability. Why not consider e-tendering - an electronic tendering solution that facilitates the complete tendering process from the advertising of the requirement through to the placing of the contract. This includes the exchange of all relevant documents in electronic format. Some of the potential benefits⁴ certainly have a sustainable feel:

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- (i) Reduced tender cycle-time;
 - (ii) Fast and accurate pre-qualification and evaluation, which enables the automatic rejection of suppliers that fail to meet the tender specification;
 - (iii) Faster response to questions and points of clarification during the tender period;
 - (iv) Reduction in the labour-intensive tasks of receipt, recording and distribution of tender submissions;
 - (v) Reduction of the paper trail on tendering exercises, reducing costs to both councils and suppliers;
 - (vi) Improved audit trail increasing integrity and transparency of the tendering process;
 - (vii) Improved quality of tender specification and supplier response; and
 - (viii) Provision of quality management information.
14. The specification is a key document. For example, you could specify that timber comes from a sustainable source. And it does not matter where that project is. It can be anywhere from Waterloo in Manchester or Waterloo in Sierra Leone.
15. The Construction & Development Partnership (www.codep.co.uk) is about to commence construction of its first project, the Equiano Centre, a library and education centre in Freetown, Sierra Leone. The design, prepared by architects Willson Bell and engineers Ramboll Whitbybird, includes the following features, all of which demonstrate the sustainable approach which is a key feature of the project:
- (i) Location: the building is intended to form the final boundary to a new town square. This new public space will be framed by five important community institutions - the library, the court, the council house and the school and church - creating a central gathering place for Waterloo;
 - (ii) Concrete structure: the team chose concrete as the primary construction material as it is already widely used within Sierra Leone. This will enable the project to benefit from contractor familiarity with the material and provide better opportunities to improve construction techniques and quality;
 - (iii) Energy efficiency: the library has been designed to require low energy consumption during its design life. The key to this is provision of solar shading, maximising natural light and using the concrete structure to cool the building naturally;
 - (iv) Power: the lack of a reliable grid network means a local energy source is required for lighting and computers. Solar power will be utilised when power is required via a large photovoltaic array connected to a battery bank;
 - (v) Ease of construction: the whole design is aimed at being in line with current capabilities in Sierra Leone rather than importing unknown and unworkable technologies;
 - (vi) Water: will be supplied through a very large rainwater tank that allows for provision throughout the dry season;
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- (vii) Waste: toilet waste will flow into a reed bed filtering system;
- (viii) Finishes: are all simple and locally available to ensure easy and low cost maintenance.
16. Prohibitive cost is often put forward as a reason not to adopt sustainability concepts in a project. Here, it can be seen that one of the drivers in achieving a sustainable design is cost, both in the short-term construction and the long-term operation of the building.
17. Once you have decided how you want to proceed, the key is then ensuring that the sustainability provisions you want are incorporated into the design and specification. If they are so incorporated, then would you have any recourse against the designer? Under English law, it is possible. However, there may be some difficulties. If there are problems with the design, then the typical allegation made is a breach of a designer's duty of care. The standard test for this is well known and the threshold for a claim for professional negligence can be fairly high. The standard formulation was set out by Mr Justice McNair in *Bolam v Friern Hospital Management Committee*⁵ when he said:
- “Where you get a situation which involves the use of some special skill or competence, then the test whether there has been negligence or not is the standard of the ordinary skilled man exercising and professing to have that special skill. A man need not possess the highest expert skill at the risk of being found negligent it is sufficient that he exercise the ordinary skill of an ordinary competent man exercising that particular art.”
18. HHJ Seymour QC in the long-running case of the *Royal Brompton Hospital National Health Service Trust v Frederick Alexander Hammond and Others* case,⁶ said that it is necessary for a Claimant to prove the following in order to succeed in a claim for damages for professional negligence:
- (a) What, at the material time, were the standards of ordinarily competent members of the relevant profession in relation to whatever it is which it is alleged that the Defendant should have done, but failed to do, or did, but should not have done;
- (b) What it is that the Defendant actually failed to do, or did, as the case may be;
- (c) By a comparison of (i) and (ii) above, that the Defendant fell below the standards of the ordinarily competent member of his profession in respect of the matter or matters of complaint.”
19. A professional person's liability is not absolute. In sustainability terms (as with any contract), there are two questions that need to be asked:
- (i) What is the loss?
- (ii) What are the ordinary standards applicable when asked to incorporate sustainability provisions?
20. In practical and legal terms, the likely loss may be small. If your designer does not prove to have incorporated the sustainability provisions you required, then remember the principles from the *Ruxley*⁷ case. You may well not be entitled to the cost of remedial works to achieve what you had intended:
- (i) The question as to whether you will be allowed the cost of the remedial works claimed should be answered according to whether remedial cost would be so wholly disproportionate to its benefit as to make it unreasonable.

5. (1957) 1WLR 852

6. CILL March 2001

7. *Ruxley Electronics and Construction Ltd v Forsyth* - [1995] 3 All ER 268

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- (ii) If it is so disproportionate, you may be entitled to recover on the basis of diminution of value, if there has been any.
 - (iii) Damages are not limited to only diminution of value or reinstatement. The court in *Ruxley* recognised that there may be a middle figure to reflect loss of amenity or inconvenience through the claimant not having received what he wanted and what he contracted for.
21. And you will only be entitled to claim for damages if you can prove liability. Sustainability is a new concept. It is easy to see how a designer (or their insurers) will run a defence based on the fact that they were acting as an ordinary competent designer and that the sustainability concept was new and so they cannot be criticised for not achieving the clearly high-level or expert standards that were required.

Construction - building your project

22. Some contracts do contain provisions that may be considered to be “sustainability” provisions. Clause 4.18 of the FIDIC Red Book is entitled, “Protection of the Environment” and states:
- “The Contractor shall take all reasonable steps to protect the environment (both on and off the site) and to limit damage and nuisance to people resulting from pollution, noise and other results of his operations.
- The Contractor shall ensure that emissions, surface discharges and effluent from the Contractor’s activities shall not exceed the values indicated in the Specification, and shall not exceed the values prescribed by the Applicable Laws.”
23. This clause demonstrates the need to comply with local legislation and the specification as we have already discussed. It also raises the major problem that you are faced with when drafting contracts to incorporate sustainability provisions. What is a “reasonable step”? To what extent can a contractor “limit damage and nuisance”? Is there any remedy for a breach of these provisions, apart from termination?
24. As you may know, the JCT has decided to extend the sustainability provisions within its contracts.⁸ A JCT working group is currently preparing these sustainability provisions and the JCT intends to publish the provisions, together with detailed guidance notes, towards the end of 2008, with a view to incorporating these provisions within the JCT 2005 suite of contracts in the Spring of 2009. As the JCT are the first of the UK contract bodies to commit to the introduction of sustainability provisions, the results of their deliberations are awaited with interest.
25. Note the careful use, taken from the JCT Press Release, of the word “extend”. There are already a number of contractual provisions and requirements which are already part of the current JCT contractual framework. As noted above, most contracts already include provisions to comply with statute and statutory requirements. Further, the JCT is not starting from scratch when it considers how to incorporate sustainability provisions within its contracts.
26. The JCT Framework Agreement 2007 already includes a number of sustainability provisions. A framework agreement is an agreement which is reached between two parties to cover a long-term collaborative arrangement. Framework agreements are used, typically, where an employer has a long-term programme of work in mind and is looking to set up a process to govern the individual construction or supply packages that

8. JCT Press Release “The future is green” - 29 August 2008.

may be necessary during that framework term. Framework agreements allow an employer to instruct another party to carry out works or provide services, by reference to pre-agreed terms, over a (usually) pre-agreed period of time.

27. Clause 16 of the JCT 2007 Form, headed, “Sustainable Development and Environmental Considerations”, states the following:

“The Provider will assist the Employer and the other Project Participants in exploring ways in which the environmental performance and sustainability of the Tasks might be improved and environmental impact reduced. For instance, the selection of products and materials and/or the adoption of construction/engineering techniques and processes which result in or involve

- (a) reductions in waste;
- (b) reductions in energy consumption;
- (c) reductions in mains water consumption;
- (d) reductions in CO2 emissions;
- (e) reductions in materials from non-renewable sources;
- (f) reductions in commercial vehicle movements;
- (g) maintenance or optimisation of biodiversity;
- (h) maintenance or optimisation of ecologically valuable habitat; and
- (i) improvements in whole life performance.”

28. The JCT Framework Agreement Guide provides further details of this at paragraph 56 which states:

“In line with the UK strategy for more sustainable and environmentally sensitive construction, the Provider is encouraged to assist the Employer and the other Project Participants in exploring ways in which environmental performance and sustainability of Tasks might be improved and environmental impact reduced:

- (a) reductions in waste - not only reductions in the proportion and/or volume of materials wasted in the construction process but also the volume of extracted materials, demolition waste etc. which have to be removed from site during the construction process;
 - (b) reductions in energy consumption - not only the energy consumption of the completed works/facility but also energy used during the construction process;
 - (c) reduction in mains water consumption - again, not only the water consumption of the completed product/facility, but also water consumed during the construction process;
 - (d) reductions in CO2 emissions - a goal in itself as well as a measure of success in achieving other environmental objectives such as reductions in energy consumption, reductions in use of materials from non-renewable sources, reductions in vehicle movements; and improvements in whole life performance;
 - (e) reductions in materials from non-renewable sources - an essential requirement of sustainable construction;
 - (f) reductions in commercial vehicle movements - to and from the site of the Task;
 - (g) maintenance or optimism of biodiversity - for instance, if it is necessary
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to chop down an area of mixed woodland to construct part of the works the Parties should endeavour to replace such area with a similar mix of species, not just an area of homogeneous conifers;

- (h) maintenance or optimism of ecologically valuable habitat - a comparison of the area of ecologically valuable habitat within the total project site area at completion of the Task as compared with that at the start; and
- (i) improvements in whole life performance - looking beyond the immediate construction process to the long term use, operation, maintenance and replacement of the project and/or project components.”

29. However, clause 16 of the JCT Framework Agreement again illustrates and reinforces perhaps the main difficulty when it comes to deciding how to incorporate sustainability provisions into a contract. The wording of the clause notes that the provider is to “assist” the employer in “exploring ways in which the environmental performance and sustainability” might be improved and the environmental impact reduced. How is that assistance to be measured? What might amount to a breach of that obligation? If there is a breach, will there be any loss?
30. Establishing the parameters of that assistance is actually something which the JCT Framework Agreement is set up to measure. Clause 21 refers to key performance indicators (“KPIs”) and provides that where KPIs are adopted, then a contractor’s contribution or assistance can be monitored and assessed by reference to the KPIs. The purpose of the KPI and the Framework Agreement is to enable an employer to:
- (i) Identify aspects of the provider’s (or contractor’s) performance which may have been overlooked;
 - (ii) Identify aspects of the employer’s performance which may have had an adverse effect upon the contractor’s performance;
 - (iii) Identifying any aspects of the contractor’s (and employer’s) performance which could be improved;
 - (iv) Assessing whether the current KPIs amount to a fair, reasonable and appropriate indication of the contractor’s contribution to progress.
31. Thus, it would be possible to set up sustainability KPIs and monitor the performance of the contractor. Actual targets could be set. The likely result of poor performance (or poor assessment) under the Framework Agreement, is that the contractor will not receive further work under the particular framework arrangements.
32. So that is a possible way forward for the JCT. However, framework agreements hold a particular place within the construction industry. Would the framework agreement approach work under the JCT Standard Building Contract? The easiest way to look at this question is probably in reverse. Can you ascertain the consequences of a breach of sustainability provisions within a standard form of contract? The *Ruxley* principles discussed above, suggest that there would be certain problems.
33. Peter Hibberd, the secretary-general of the JCT, said this:
- “Is there a remedy for failure to meet the requirements of such a provision? Would these be legal or commercial remedies, or both - and will the provision only be aspirational?”⁹
34. It is difficult to see the point of including aspirational provisions in any contract. There really is little point in agreeing that your agreement is to be non-binding unless you are prepared to accept that you have no redress
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if things go wrong.

35. Perhaps the area to focus on is completion. Under Condition 2.30 of the JCT Standard Building Contract, the architect/contract administrator will certify that the works are practically complete. It would be fair to say that most people treat practical completion as meaning the stage at which the works are reasonably ready for their intended use, even though there may be an outstanding “snagging” or “punch” list.
36. Under English law, that is not what the authorities suggest. They seem to suggest the works must be free from patent defects. In *HW Neville(Sunblest) Limited v William Press & Son Limited*, HHJ Newey QC said:

“I think that the word ‘practically’ in Clause 15(1) gave the Architect a discretion to certify that William Press had fulfilled its obligation under Clause 21(1) where very minor de minimis works had not been carried out, but if there were any patent defects in what William Press had done the Architect could not have given a certificate of practical completion.”
37. In the earlier House of Lords’ judgment in *City of Westminster v Jarvis*, Viscount Dilhorne had said:

“The Contract does not define what is meant by ‘practically completed’. One would normally say that a task was practically completed when it was almost but not entirely finished; but ‘Practical Completion’ suggests that that is not the intended meaning and that what is meant is the completion of all the Construction work that had to be done.”
38. An alternative is the Taking-Over Certificate, for example under clause 10.1(a) of the FIDIC Red Book, the engineer will:

“issue the Taking-Over Certificate to the Contractor, stating the date on which the Works or Section were completed in accordance with the Contract, except for any minor outstanding work and defects which will not substantially affect the use of the Works or Section for their intended purpose (either until or whilst this work is completed and these defects are remedied).”
39. Under the Society of Construction Law Delay and Disruption Protocol, “Substantial Completion” is bracketed with Practical Completion and both are defined as the completion of all the construction work that has to be done, subject only to very minor items of work left incomplete.
40. It may therefore be possible to build sustainability provisions into the definition of practical completion - a project is not complete unless certain sustainability standards have been achieved. These provisions would of course need to be clearly defined. For example, the contract might require that a building achieve an “excellent rating” under the BREAM rating standard. The risk of liquidated or delay damages would be a powerful driver to ensuring compliance on the part of the contractor.
41. Of course, the contractor might have their own views about amendments that may be required to the contract. If the incorporation of sustainability provisions is a key aim of the project, the contractor might require the addition of a new relevant event under clause 2.29 of the JCT Standard Building Contract to account for the risks of such provisions. Clause 2.29.12 already deals with the risks of a change in the law, and thus the introduction of new environmental regulatory provisions. The nature of the amendment would depend on the requirements sought. If certain sustainable products are specified, who is responsible for their procurement? What if there is only a limited supply? What if particular products are in short supply and so cost substantially more? Well this is not

something unique to sustainability provisions.

42. These are familiar problems under any contract. Currently, the problems caused by the massive increase in prices of commodities such as steel are widespread. What if the contractor is suffering because he is working to a fixed price? In such circumstances, contractors often say that the developer is better placed to manage the risk since he can pass on the increased capital expenditure to the end user; whereas with respect to building materials, the contractor practically has nowhere to go to. There is no difference between steel and sustainable timber. It is up to the parties to agree where the risk lies.

The operations stage

43. In long-term D-B-O (Design Build Operate) contracts, the implementation of sustainability provisions is relatively easy to set out by listing the standards (perhaps for emissions or recycling) that the operator is expected to achieve. The difficulty lies with where the risk may be, if standards and or legislation change during the operation period. Typically, these projects run for upwards of 20 years. The contract will set out where the risk lies, if there is a change in government legislation.

44. The position is a little different with construction contracts. Designers may well have entered into collateral warranties. These, typically, provide that the design shall not use any deleterious materials. Contractors often make similar warranties in their contracts. A typical warranty might read:

“The Consultant warrants and undertakes to the Beneficiary that it has and will continue to use reasonable skill and care to ensure that it shall not specify for use any material:

- (a) which is deleterious or capable of becoming deleterious when used in a particular situation or in combination with any other material or materials;
- (b) any substance referred to as being hazardous to health and safety in Ove Arup 1997 Report: ‘Good Practice in the Selection of Construction Materials’ as may be revised or reissued from time to time;
- (c) or any other substance not in accordance with British Standards (where applicable) or an equivalent of no less a standard of codes of practice and good building practice as set out in any United Kingdom or any other European publication of a recognised body or institution.”

45. This is what might be termed a negative obligation. In sustainability terms, it would be quite possible to turn this round into a positive statement:

“The consultant warrants and undertakes to the employer that it has and will continue to use reasonable skill and care that it shall endeavour at all times to specify for use materials from the BRE Green Guide to Specification.”

46. If that is considered to be too widespread an obligation, then it may be possible to restrict the requirement to, say, sustainable timber.

Conclusions

47. The key to enforcing any contractual obligation is clarity, understanding what is required and what the penalty for failing to comply with what has been specified might be.
48. The JCT seems to be deciding between aspirational clauses and specific obligations. Aspirational clauses sound good, but in reality mean nothing. The key to incorporating sustainability provisions into your contract lies
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with getting your specification right. Make sure you have incorporated with that specification, what you want to achieve. Again, do not treat sustainability any differently to any other requirement you may have. When it comes to enforcing that specification, there are two options, which are perhaps best used in concert. First, monitor the performance of the contractor through the use of Key Performance Indicators, which must of course be agreed in advance. Second, make sure that the achievement of practical completion is linked to the achievement of the sustainable goals you want incorporated into your project. Once again, in this regard, sustainability provisions are no different to any other.

49. And perhaps that is the key to the incorporation of sustainability provisions into your contract. Do not treat them differently from anything else.

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30 September 2008