



DESIGN LIABILITY, DEFECTIVE BUILDINGS AND REMEDIES AT LAW 2007

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Summary: The aim of this paper is to consider and analyse the subject of design risk, responsibility for design, redress when it goes wrong and the courts' approach to the assessment of damages.

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Building it wrong

- 1 Construction is a fascinating subject and even more so when one looks at what can go wrong. As design is an iterative process design failings are amongst the most colourful. Design usually involves refinement or changes as a result of further discussion and consideration given by the designer, other team members, the client, contractor, or others.¹ It also gets more detailed as project time passes starting as an outline concept and finishing as fully detailed proposals. A design element may involve more than one party such as specialist contractors whose detailed design may necessitate returning to the scheme designers for changes to the basic design assumptions and design developed on major projects for as long as 5 to 10 years before being plonked in the lap of a design and build contractor.
- 2 For near time immemorial the law and the builder have had a close if not always happy union. This is illustrated by the fact that close to four millennia ago parts of the world had standards and rules that guided the circumstances in which the harshest punishment was to be administered to the bad builder or designer.
- 3 If we go back to the study of Babylonian law², King Hammurabi who ruled from 1792 to 1750 BC was a remarkable king and lawgiver. His celebrated codified law went inter alia thus:

¹ *Building Contract Dictionary*, 3rd Edition, Blackwell Science: "A rather vague term denoting a scheme or plan of action. In the construction industry, it may be applied to the work of the architect in formulating the function, structure and appearance of a building or to a structural engineer in determining the sizes of structural members"

² In what would now be Iraq.

*The judge who blunders in a law case is to be expelled from his judgeship forever, and heavily fined. The witness who testifies falsely is to be slain. If a man builds a house badly, and it falls and kills the owner, the builder is to be slain. If the owner's son was killed, then the builder's son is slain.*³

- 4 They were tough times of the “eye for a brick” variety if designer or constructor was at fault. These grim retaliatory punishments take no note of excuses or explanations, but only of the fact with one striking exception. An accused person was allowed to cast himself into “the river”, the Euphrates. Apparently the art of swimming was unknown; for if the current bore him to the shore alive he was declared innocent, if he drowned he was guilty. So we learn that faith in the justice of the ruling gods was already firmly, though somewhat childishly, established in the minds of men.
- 5 Nothing is really new Shakespeare⁴ summed up what can go awry with the building process over 400 years ago in *Henry IV*: Lord Bardolph:

*Like one that draws the model of a house
Beyond his power to build it; who, half through,
Gives o'er and leaves his part-created cost
A naked subject to the weeping clouds
And waste for churlish winter's tyranny.*

- 6 To put this in temporal context, it was not until 1891 that the first edition of *Hudson* appeared, not until 1931 that the RIBA produced its first standard form and 1955 that the first edition of *Keating* populated ourselves.⁵

Design risk the choice of contract and procurement strategy

- 7 Contracts by their nature are intended to precisely allocate and assign the balance of risk, responsibility and reward. When drafting contracts, addressing who carries what risk, when and where is an essential consideration in choosing contract strategies.⁶ It is all part of the wonderful world of freedom of contract, which is a central tenet of English law.
- 8 Getting the form of contract right is an essential prerequisite to the success of a project. Establishing clarity of obligation, particularly as to design duties, is essential as is meeting the functional performance of a design requirement set by the employer client within his budget. This perhaps explains why the JCT, ECC, FIDIC,

³ I am grateful for the original translation by Charles F Horne.

⁴ William Shakespeare 1564-1616, *Henry IV*: SCENE III.

⁵ I have a sweet little book my late father gave me from when he studied architecture at Cambridge. It is by Richard Body and called *The Architect and the Law*, published in 1952. It was but 66 pages!

⁶ In practice, entering into a contract and commencing construction based on a design that is incomplete can significantly increase the risk of problems arising. Such problems invariably lead to delays, disruption and therefore increased costs. By far the greatest numbers of claims made by employers or subsequent building owners are defects claims. Sometimes an employer's claim in respect of building defects is entirely straightforward and there is no doubt as to the liability of the contractor and the contractor's ability to meet that liability. In many other cases, however, the contractor may be able to raise some form of defence. However, those issues are not the topic of this paper.

IChemE design and build forms lead the field for the “comfort” they afford in their unamended form.

- 9 However, construction professionals sometimes get things spectacularly wrong, a recent example came before the courts in *Plymouth & South West Co-operative Society Limited v Architecture, Structure & Management Limited*.⁷ It concerned a redevelopment project which was successfully completed, but at an overspend of approximately £2 million. The developer sought to recover much of the alleged overspend from its architect (who in fact was to design, oversee implementation of and report upon tenders, contract procurement, cost control and certification procedures and general liaison with the contractor on programming and cost planning matters), on the basis that most of it would have been avoided had the architect performed its services with reasonable skill and care. In particular, the developer alleged that the architect (who was aware of the developer’s need not to exceed the budget) was in breach of duty in advising the developer to proceed by means of a two-stage tendering process, leading to the award of a building contract which incorporated the JCT Private with Approximate Quantities standard form of contract and with a vast number of provisional sum items. However, during the second stage, little or no design progress had been made and nearly 90% of the works remained as undefined provisional or prime cost sums.
- 10 Just before the developer entered into the building contract, the architect advised the developer that almost the whole of the work was subject to a contract sum that was no more than a budget forecast because the design work needed for costing and construction purposes had not been carried out. However, the architect explained that careful monitoring and cost control measures would be implemented by them so that the project would be completed within budget.
- 11 The court held that, in all the circumstances including the incomplete design, the absence of any advice from the architect as to the decisions which the developer had to take (including the dates by which such decisions were required in order to complete the design), and the developer’s priority for cost certainty the architect was in breach of duty in failing to advise the developer that an alternative contract strategy should have been adopted. (The alternative contract strategy would have been for the developer to proceed with that part of the works which had been sufficiently designed and to postpone the remainder of the works until the design of the remaining works had been fully completed and the phasing arrangements sorted out to allow for cost certainty.)

⁷ [2006] All ER (D) 175 & CILL 2366 TCC. There is also a interesting insurance twist to this case. The architects who were found liable turned out to be insolvent and the defendant’s professional indemnity insurer was not party to the action between the claimant and their insured client. Yet, the insurer funded and instructed the client’s substantive defence which the judge rejected. Subsequent to the judgment, the successful claimant sought to recover its costs from the non-party insurer, given that the insured was insolvent, on the basis of the insurer’s self-interested interposition in the proceedings. His Honour Judge Anthony Thornton QC awarded £1m worth of costs against the insurer in favour of the claimant under section 51(3) of the Supreme Court Act 1981. The insurer was ordered to pay this sum in addition to the coverage limit of £2,000,000 under the policy! Which thus multiplied the insurer’s maximum budgeted exposure by 150%. In the future, insurers that are notified of litigation are advised to: explore the insured’s solvency; if the insured is financially insecure, elicit as to whether or not the insured retains any interest in resisting the claims; and in any event, collaborate with the insured and any excess layer insurer or re-insurer in directing the defence.

- 12 Thus the claimant employer succeeded in their action against the defendant architects for professional negligence in failing to advise of a suitable contract strategy and failing to advise on cost saving opportunities during the works. Accordingly, the additional costs incurred plus the cost savings ignored were recoverable.

Contract selection

- 13 The selection of an appropriate contract matched to the needs of the parties is therefore best understood as part of an overall risk strategy. It is the risks that are not strictly “unforeseen” or “unclear” which most often result in disputes. On the face of it, procurement systems are chiefly concerned with issues such as: direction and control over the building and design processes, design responsibility, change management, dealing with the “unforeseen” and, of course, payment machinery geared to fulfilment of all the contractor’s obligations. These issues are all interrelated by their nexus with the risk allocation within a project. For example, the acceptance of “design responsibility” by a contractor affects not only the provision of design resources but presents risks and opportunities: there is the risk of design liability and an opportunity to design a structure that can be built more quickly and cheaply by use of the contractor’s know-how. By know-how, I mean in the areas of supply-chain management, knowledge of construction product alternatives and buildability. The other side of the fence for the employer is that the more general and unspecific his design brief, the less influence he has on the finished works and the aesthetic where he places fulfillment contractually on the shoulders of his builder. Yet, if you ask any contractor the risk which concerns him most in construction projects, and particularly civil engineering projects, whilst time, quality, availability of resources, weather and financial risks (funding, exchange rates, etc.) are a few of the important variables, the answer will invariably be that which arises once the ground is broken – unforeseen ground conditions and obstructions.⁸ It can fast make a job into a ruinous venture.⁹
- 14 If risk is to be managed then attention must be paid to the clear unambiguous drafting of contracts so that they record exactly what the parties intend. Uncertainty as to the meanings of contract terms reduces the effectiveness of project management, as resources need to be diverted away unfruitfully into discussions about the division of responsibility within the project and worse, resort to lawyers.
- 15 It must always be remembered that under English Law, the tribunal and therefore the parties interpreting the contract must give effect to the literal meaning of the words. The “rule” that words must be given their ordinary and natural meaning means that the law does not easily accept that people have made linguistic mistakes.

⁸ The principle is succinctly stated in Halsbury’s *Laws of England* as follows: “It is no excuse for non-performance of a contract to build a house or to construct works on a particular site that the soil thereof has either a latent or patent defect, rendering the building or construction impossible. It is the duty of the contractor before tendering to ascertain that it is practicable to execute the work on the site.”

⁹ Exemplified in *Mowlem plc (formerly John Mowlem) v Newton Street Limited* (2003). The courts underlined they will be reluctant to interfere with unequivocal risk allocation clauses under which the risk of unforeseen events is transferred to the contractor. In this case the validity of an exclusion clause was tested under an amended JCT WCD 98 contract. Judge Wilcox noted that in any contract with a significant design element at the interface of a building into the ground or on to an existing structure, there is a commercial imperative to allocate the risk of the unforeseen or to ascertain any degree of risk arising out of the ground conditions or existing structure.

On the other hand, if one would conclude from the background that something has gone wrong, the law will not attribute to the parties an intention which they plainly could not have had. The language cannot be read in a manner that “flaunts business commonsense” (*Antaios Compania Naviera SA v Salen Rederierna AB* [1985].¹⁰) To the distain of some foreign clients, English judges do not, as under certain civil law systems, strive to give effect to the intentions of the parties. Tribunals uphold the principle of *pacta sunt servanda* (contracts must be performed) and if a party made a promise to do something, no matter how difficult it proves to achieve, it must do it.¹¹ At common law one can contract for the impossible but on so doing one has to deliver, or failing which, be liable in damages!

- 16 The tribunal will also attempt to give effect to the whole of the document and to try to give meaning to every word. There is naturally still scope for interpretation, but it is not generally permitted, under English canons of interpretation, to find meaning when none exists or to look behind the words to find the true intentions of the parties. The basic approach is literal, not purposive. One is, however, entitled to look at the factual matrix of events surrounding the formation of the contract.
- 17 It is worth remarking that ascertaining the meaning of the language deployed by contracting parties constitutes a large proportion of the business of courts and tribunals dealing with commercial disputes. It is tempting to see this as a problem inherent to language due to its flexibility and vagueness, or else to detect a link with the supposed nit-picking mentality of lawyers, always keen to identify an unintended ambiguity in words or loophole in documentation. In practice though, most disputes that have to be resolved by resorting to interpretation are not problems about the meanings of words or ones which require familiarity with grammatical niceties. Rather, they are problems about the application of the language of a contract to the (perhaps unexpected) events which have subsequently transpired. As such they represent an unavoidable source of potential dispute. See cases such as *Prenn v*

¹⁰ AC 191

¹¹ The strict application of contractual promises is mitigated by *rebus sic stantibus* (an understanding that performance is subject to circumstances remaining the same). If there is some later intervening event which impacts upon the contract so that obligations cannot be performed (not merely rendering them more difficult to perform), the parties may be discharged from their obligations. This principle is labelled force majeure in construction contracts, and in these contracts embraces principles of frustration and common mistake in English law.

Simmonds [1971];¹² *Investors Compensation Scheme Ltd v West Bromwich Building Society* [1998]¹³ for further discussion outside the scope of this paper.

- 18 Therefore, it is a general principle in English contract law that commercial parties may make, within very broad parameters, whatever agreement they wish as part of their freedom of contract. They are masters of their own contractual fate.¹⁴ They may allocate risk, as they like. However, if projects are to run smoothly and efficiently, at optimum cost, and time, they tend to do so in practice if risks are allocated appropriately to the circumstances.
- 19 Ultimately, uncertainty may lead to conflict as demonstrated in much of the heavyweight litigation of the Commercial Court and TCC. The House of Lord's litigation in *Panatown v Alfred McAlpine Construction Ltd* [2000]¹⁵ and before it *Linden Gardens Trust Limited v Lenesta Sludge Disposals Limited* and *St Martin's Property Corporation Limited v Sir Robert McAlpine and Sons Limited* [1994]¹⁶ are such examples. The late Ian Duncan Wallace QC cited the *Linden Gardens* mammoth litigation as the consequences of the "*lamentable quality and lack of precision of typical standard form draftsmanship*".¹⁷
- 20 Thus, the risk allocation function of a contract is best satisfied by writing terms that control risk situations, such as who has what design responsibility for poor ground conditions, or the risk of exceptionally inclement weather or fluctuations in the cost of labour plant and materials. Where such matters are not dealt with expressly, the general law takes a view on the allocation of risk. A well-known example is to be found in *Bottoms v Mayor of York* (1892).¹⁸ In this case, Bottoms contracted to execute sewage works for York. The soil turned out to be unsuitable and necessitated extra works which the engineer refused to authorise as a variation. Bottoms abandoned and sued for work done. The contract was silent as to whether the contractor was entitled to extra payment for difficulties due to unanticipated

¹² 1 WLR 1381 Lord Wilberforce argued that "the time has long passed when agreements, even those under seal, were isolated from the matrix of facts in which they were set and interpreted purely on internal linguistic considerations." Lord Wilberforce reached back into the 1859 decision of *Macdonald v Longbottom* and Lord Blackburn's "well-known judgment in *River Wear Commissioners v Adamson*" — a case decided in 1877, and where Lord Blackburn mandated an inquiry "beyond the language ... [to] see what the circumstances were with reference to which the words were used, and the object, appearing from those circumstances, which the person using them had in view." In *Prenn*, Lord Wilberforce strongly rejected the admissibility of prior negotiation as evidence or negotiation of the parties' subjective intentions - being careful to distinguish between the use of extrinsic materials for a subjective finding of intention and an objective one. In doing so, Lord Wilberforce said that the "evidence should be restricted to evidence of the factual background known to the parties at or before the date of the contract, including evidence of the 'genesis' and objectively the 'aim' of the transaction."

¹³ 1 All ER 98 (HL). The general principles identified by Lord Hoffmann in *West Bromwich* were approved by Lord Bingham in *BCCI v Ali* [2002] 1 AC 251 at Para.8: "*To ascertain the intention of the parties the court reads the terms of the contract as a whole, giving the words used their natural and ordinary meaning in the context of the agreement, the parties' relationship and all the relevant facts surrounding the transaction so far as known to the parties. To ascertain the parties' intentions the court does not of course inquire into the parties' subjective states of mind but makes an objective judgment based on the materials already identified. The general principles summarised by Lord Hoffmann in [ICS] apply in a case such as this.*"

¹⁴ The parties are to be regarded as masters of their contractual fate in determining what terms are essential. Per *Pagnan v Feed Products* [1987] 2 Lloyd's Rep. 601: "It is for the parties to decide whether they wish to be bound and, if so, by what terms, whether important or unimportant." Per *Mitsui Babcock Energy Ltd (BEL) v John Brown Engineering Ltd* (1996) 51 Con. L.R. 129.

¹⁵ 4 All ER 97

¹⁶ 1 A.C. 85

¹⁷ (1993) L.Q.R. 82 at page 91.

¹⁸ Hudson's B.C. (4th ed) 208, CA, see, too, *Thorn v London Corporation* (1876).

ground conditions. The court decided that the occurrence of such conditions was at the contractor's risk and there should be no extra payment.¹⁹

- 21 The modern tendency, however, is to deviate from this traditional "natural order" of the open contract procurement method. Today, the contents of construction contracts vary considerably in their prescription, ranging from those that include a restricted element of design to be carried out by the contractor, to those variously known as "design and build/construct", "turnkey" or "package deal" contracts which lump it very largely all on the contractor.
- 22 A distinction in the varying structure of these modern contracts needs to be made between "single point contracts" and "design and construct" or "turnkey" contracts. A single point contract is one in which there is only one contract for the whole project, it can of course include a design and build contract. Where the contractor has responsibility for all the design as well as construction, it is coined "design and construct" or "turnkey". Although the term "turnkey" is sometimes used to refer to projects with single point contracts, the essential feature is the allocation of responsibility for design and construction to the contractor.
- 23 The "fixed price" lump sum basis, is common in design and construct forms of contract. The major difficulty with them, however, in the UK construction market has been the control of "quality" and the appearance of the final aesthetic form, if unchecked by the client, often being a disappointment. This has manifested itself in the procedures for the client to monitor the design see JCT 05 commentary below and footnoted²⁰, and the quality of the workmanship.

¹⁹ By contrast, in the US case of *Miller v City of Broken Arrow*, Miller won a contract to lay sewers according to detailed specifications prepared by the City, following investigations of ground conditions. Miller encountered extremely muddy unstable ground and no matter what he did to comply with the specification, it was impossible to do so. The City accepted this and issued a variation to add gravel to stabilise the muddy trench bottom. This, however, failed. Miller's contract was terminated by the City due to insufficient progress and the works were awarded to others this time with a modified design. Miller successfully claimed for his costs. The court found that it was impossible (not just difficult) for him to build the sewer in accordance with the detailed designs he had been given.

²⁰ JCT's introduction of a Design Review Procedure in the Standard Building Contract when the Contractor's Design Portion has been selected and also in the Design and Build Contract and its JCT derivatives, which require the operation of a Design Review Procedure based upon that which is already contained in the JCT Major Project Form. The Contractor is required to submit two copies of all design documents, e.g. drawings and detailed specifications it prepares to the Employer or the Architect (as the case may be) for review. Within 14 days of receipt of that documentation, or if a date for submission of documents has been previously agreed within 14 days of that date (which ever is the later), the Employer/Architect must have reviewed the documentation and return it to the Contractor marked with A' B or C. If the Employer/Architect does not respond within the 14 days allowed, the documentation is regarded as having been marked with an A.

These provisions give the CA the means to monitor the developing design, and to make comments where there is concern as to the achievement of the employer's requirements, but otherwise no power to influence the development of the design without issuing a variation to the requirements that is the theory at least. Note that under JCT 05 the design documents to be provided are those "reasonably necessary to explain or amplify the Contractor's Proposals (Clause 2.9.2.1) and that they are to be provided "as and when necessary from time to time or as otherwise stated in the Contract Documents".

It remains to be seen whether an employer may seek to cross the line between making comments on designs which are for the purposes of gaining confidence that the contractor is having proper regard to the contractual requirements and making comments which, in effect, attempt to vary the design requirements via the back door. See the Reading University Centre for Strategic Studies Report - *Designing and Building a World-class Industry*, Author(s): Bennett, J., Potheary, E., Robinson, G. 1996.

- 24 Most standard form contracts entered into in either the "traditional"ⁱ or the "design and build"²¹ format, contain express provisions detailing the obligations of the parties but that is not always enough to avoid disputes.
- 25 Such standard form contracts will specify, inter alia, the precise level of responsibility undertaken by the contractor or design team in respect of the design. We shall see that how the separation of design and construction is overcome is a central issue to contracts working successfully as ideally the designer must work for the contractor and where this does not happen, interface issues and design liability issues arise in the writer's experience. There is also the question of whether the employer's requirements should be considered as part of design. These are design requirements, not design, but frequently they are not treated this way and that leads to legal scraps.
- 26 In the event, however, that there is no express imposition of design responsibility, and a dispute arises between the parties, the courts will seek to imply such an obligation. With a "traditional" lump sum procurement method,²² where the contractor only builds and the employer has a design team, the standard of care to be employed by the professional design team will usually be implied as that imposed on any professional, namely "reasonable skill and care", and the implied obligations of the contractor would include carrying out the construction works with skill and care, using good quality materials. In a "design and build" contract, however, the case law over the years has shown that the contractor, in the absence of an express contractual rebuttal, will be under an obligation to ensure that the finished product will be (reasonably) "fit for its intended purpose".
- 27 The importance of the distinction between the use of reasonable skill and care and an obligation as to fitness for purpose is that in the former case negligence has to be proved whereas in the latter case there is an absolute obligation²³ which is

²¹ The authoritative RICS 10th Contract in Use Survey 2006 (based on 2004 data) prepared by Davis Langdon shows design and build to be the single most prevalent method since 1995. Up until that point the surveys were dominated by bills of quantities. This was the time of major shifts in procurement strategies. This survey reinforces the dominance of design and build as a procurement strategy, but bills of quantities just refuse to die.

The survey further found that in 2004 92% of building projects used a standard form of contract, down from 95% in 2001. Design and Build procurement was the route of choice in just over 40% by value of contracts. That figure was up from 14.8% in 1991 and, if the trend can be extrapolated, it is probably now used in more than half. In 1984 the figure was 5.1%. The JCT standard forms are now the single most prevalent form of procurement, and the JCT With Contractor's Design is the most popular contract. Hidden away in the data is the inference that design and build is strongest in London and the South East, with bills of quantities mainly surviving in the rest of the country. This is probably related to the dominance of privately financed projects in the South East and public projects in the remainder of the UK.

²² In the 1960s most buildings were procured by what is described as the traditional method. A unique characteristic of this approach is the separation of the responsibility for design of the project from that of its construction. According to *Masterman*, this approach: "*has the advantage of having stood the test of time over many years and being understood by many clients and by all participants from the construction industry itself. The client is able to select the most appropriate design team . . . and can also delay a commitment to a building contract until a later stage in the development of his/her requirements.*"

²³ An obligation come what may, cf. an obligation merely to use best endeavours or to exercise reasonable care. An issue frequently arises in construction contracts as to whether a contractual obligation is: an absolute obligation (i.e. an unqualified obligation to achieve a result), or a qualified obligation, such as an obligation merely to use reasonable skill and care, or to use best endeavours to achieve that result. This distinction goes not only to the likelihood of a breach being established, but to the way the breach must be pleaded and the evidence that must be adduced. Thus, where the contractual term requires the application of reasonable skill and care, expert evidence is normally necessary to support an averment that the defendant failed to apply such skill and care. Similarly, where the clause requires the use of best endeavours, evidence is likely to be necessary as to whether the defendant met that standard.

independent of negligence. This is an implied obligation that is imposed on the contractor throughout the stages of construction works until completion.²⁴ The imposition of a term that a building shall be fit for its purpose also allows no defence of "state of the art", so that even if the state of knowledge across the industry is such that a particular design fault would remain undetected by other competent contractors, the contractor remains strictly liable. The question therefore arises as to whether the risk of defective design in these circumstances ought to be borne by the contractor, or whether it should more appropriately be assumed by the employer. In practical terms this is clearly a commercial decision to be negotiated: contractors, however, would argue that it is not the function of the law to apportion this risk in the absence of an express contractual provision.

- 28 Warranties of fitness for purpose and strict or absolute obligations are also frequently found where a consultant has been engaged by a design/build contractor. Why? Because contractors engaging designers have a habit of treating consultants as subcontractors and seeking, as with subcontractors, to pass all their own obligations on to the consultant, on a back-to-back basis. They often soon learn the insurance world will not provide cover if the consultant was to so contract with them.²⁵
- 29 The significance of the imposition of this fitness for purpose obligation upon a contractor in a design and build contract is that a higher standard will be required of a single contractor than that which is imposed cumulatively on the contractor and design team in a traditional form of contract. This paper will necessarily address the fitness for purpose obligation as it has been implied in construction contracts.
- 30 Within the scope of a design and build contract there can be a wide range of design risk apportionment between the employer and the contractor. Employers often wish to pass as much risk as possible to the contractor. This risk apportionment depends principally upon four issues and the negotiating weight of the parties:
- the nature of the design duty, e.g. whether it is a duty to achieve a specified result or satisfy particular criteria, or whether it is a more general duty to achieve fitness for purpose;
 - the level of responsibility or nature of the obligations of the contractor in relation to the design carried out by it, i.e. whether the duty is an absolute one, or whether it is a lower duty (for instance) of reasonable skill and care;
 - the definition under the contract or the documentation for which the employer is responsible and the documentation and/or tasks for which the contractor is responsible (the Employers Requirements v Contractors Proposals);

²⁴ *Young and Marten Limited v McManus Childs Limited* [1969] 1 A.C. 454.

²⁵ Contractors need professional indemnity because employers insist on them as a condition of design and construct contracts. It is now also the default position written into the JCT Design and Build Contract ("DB") 2005, clause 6.11-6.12.

- and the liability of the contractor in relation to that design, taking into account any limitations on liability, for instance, an exclusion of liability for economic or consequential loss.

Fitness for purpose in "design and build" construction contracts

- 31 It is useful initially to examine the concept of fitness for purpose as it has been applied in relation to the sale and supply of goods and services as it has a bearing on design liability. The law is already clear that the obligations of a contractor in a construction project (that is, a contract for work and materials) are to be assimilated as closely as possible to those of the seller under the law of sale of goods. Standard statutorily implied terms of the Sale of Goods Act 1979 and Supply of Goods and Services Act 1982 (both as amended by the Sale and Supply of Goods Act 1994)²⁶ stand to be imputed into building contracts.
- 32 So we see in a "design and build" contract the contractor is ordinarily responsible for both the design and the construction of the finished product. As such the contractor is much more directly involved in delivering to the employer a complete product which it has also designed.²⁷ A term of fitness for purpose and therefore a duty of result of the completed works will readily be implied unless excluded by the express terms of the contract or other particular circumstances.
- 33 A number of cases illustrating the circumstances in which a fitness for purpose warranty has been implied will first be discussed, before analysing in further detail the rationale employed by the courts.

The application of the fitness for purpose obligation

- 34 The existence of an absolute duty in relation to design, being either a requirement of fitness for purpose, or a requirement to achieve a specified result, derives essentially from the terms of the relevant contract. This also includes any implied term arising from the presumed intentions of the parties in the light of all the circumstances. This is illustrated by the case of *Viking Grain Storage Limited v T.H. White Installations Limited*²⁸ and *Independent Broadcasting Authority v EMI Electronics Limited and BICC Construction Limited* (1980) and the consideration given to the earlier case of *Samuels v Davis* (1943). In *Viking* the defendant agreed with the plaintiff to design and construct a grain storage installation. The plaintiff alleged a variety of defects which rendered the installation unfit for its intended purpose in respect of both its design and the materials used in its construction. The

²⁶ Wallace, I.N. Duncan, *Hudson's Building and Engineering Contracts* (11th edition), Sweet & Maxwell, London, 1995, p519.

²⁷ Although design and build forms have many advantages for the Employer and Contractor, there are specific problems that frequently arise. These are:

- Uncertain definition of the contract due to lengthy pre-contract discussions/negotiations.
- Ambiguity/discrepancy between Employer's Requirements and Contractor's Submission.
- Monitoring the adequacy of the design.
- Valuation of Variations.
- Fair cashflow payments.
- Dealing with defects.

²⁸ (1985) 3 Con.L.R. 52

plaintiff argued in favour of implied terms that the defendant would use materials of good quality and reasonably fit for their purpose, and that the completed works should be reasonably fit for their intended purpose. The defendant accepted that there was an obligation to use good quality materials but disputed the requirement of fitness for purpose. In relation to design the defendant argued that it was his duty to use reasonable skill and care only. It was held that there was nothing in the contract which prevented the implication of an additional term. The purposes for which the storage facility was required had been made known by the plaintiff to the defendant and they relied upon the defendant to provide a facility fit for those purposes. The court did not consider that there was any merit in breaking down the obligations of a contractor under a design and build contract and held that a term would be implied that the finished product must be reasonably fit for its intended purpose and that the defendant should be liable to the plaintiff irrespective of whether the defects were defects in materials or workmanship or design.

35 The Judge, Davies J, was positively enthusiastic for the proposition that absent an express standard of care then a fitness for purpose type obligation is implied: *"The virtue of an implied term of fitness for purpose is that it prescribes a relatively simple and certain standard of liability based on the reasonable fitness of the finished product irrespective of considerations of fault and of whether its unfitness derives from the quality of work or material or design."*

36 In light of the above case and its lineage, it is perhaps helpful here to set out the general principles applicable to the implication of terms in contracts thus:

- (1) The terms implied in a contract are based upon the presumed intention of the parties. The implication is one of law, because it is what the law presumes the intention of the parties to have been.
- (2) A term will be implied only if it is reasonable and necessary to do so, having regard to the nature and object of the transaction.
- (3) It will not be implied if, and insofar as the effect of so doing, would be to contradict what the parties themselves have expressly agreed.

As good a starting point as any in the process of deciding whether or not a term should be implied in a contract, is to look at the nature of the transaction and its expressed terms, if any, because they constitute the confines of the area within which any implication needs to be contained. Within those limits, it is permissible to take into account any other circumstances which can fairly be regarded as relevant to the question whether a particular term should be implied in the contract under consideration.

37 It follows from the cases such as those referred to above that the nature of the design duty cannot be assumed merely from the general law and it is therefore appropriate to state the nature of the design duty in the contract conditions and to be alert also to the import of statutory and delegated legislation such as CDM 2007.

38 We shall see below that the law has been firm in not extending a professional designers duty to the point where the architect/engineer/surveyor has a duty to

watch out for the contractor during the build phase if it turns out to be difficult to achieve the design. Different considerations apply to the health and safety aspects,²⁹ see Regulation 11 of CDM 2007 or where life and limb are imperilled.

The practical consequences of building to difficult designs for the contractor hard law

39 In *Clayton v Woodman & Sons Ltd* [1962]³⁰ the Court of Appeal decided (under the 1939 RIBA form) that an architect, who had refused to vary contract works which involved alterations to an existing building, was not liable to one of the contractor's workmen when a part of the building fell on him. Pearson L.J. said at p. 77:

The architect is engaged as the agent of the owner his function is to make sure that... when the work has been completed, the owner will have a building properly constructed in accordance with the contract The architect does not undertake to advise the builders as to what safety precautions should be taken or, in particular, as to how he should carry out his building operations.

²⁹ Under the Construction (Design & Management) Regulations (CDM) 2007 the majority of the designer duties, which were previously applicable only where the project was notifiable, are now applicable regardless of whether the project is notifiable (Reg 11).

To be a designer you have to be in a trade, business, or undertaking that involves you in preparing designs. In CDM the term "designer" relates to the function performed, rather than the profession or job title. So, for a construction project there could be "traditional" designers, such as architects, structural engineers, and civil engineers, a design and build contractor, etc. Building services engineers/consultants and quantity surveyors, etc, are also designers. You will also be a designer if you prepare drawings, specifications, and bills of quantities.

The main designer duties under the Regulations where the project is notifiable are that designers should not commence work other than initial design work unless a CDM co-ordinator has been appointed. They must also provide the co-ordinator with any information about aspects of their design which will help him discharge his CDM duties, including information that may be needed for the health and safety file. In addition:

- a. To make sure they are competent for the job.
- b. To check that clients are aware of their duties under the Regulations before you start work on the project.
- c. When preparing the design, avoid risks to those:
 - Carrying out construction work.
 - Liable to be affected by the construction work.
 - Cleaning any window or transparent or translucent wall, ceiling or roof in or on the structure.
 - Maintaining permanent fixtures and fittings of the structure.
 - Using the structure as a workplace.
- d. When preparing the design they should eliminate hazards that may give rise to risks; and reduce risks from any remaining hazards.
- e. These duties should be performed so far as is reasonably practicable, taking account of other relevant design considerations.
- f. Take account of the Work Place (Health, Safety and Welfare) Regulations 1992.
- g. Provide relevant information with the design about aspects of the design of the structure or its construction or maintenance, as will adequately assist clients, other designers, and contractors to comply with their duties under the Regulations.

In addition to the requirements of CDM 2007, designers must comply with their duties under the Health and Safety at Work etc. Act 1974 and other relevant legislation. CDM 2007 places some absolute duties on designers, such as the duty to check that clients are aware of their duties under the Regulations. In other cases, designers are required to take a step "so far as is reasonably practicable" or to "take all reasonable steps" to do something.

³⁰ 1 W.L.R. 585 at 593

- 40 This was followed in the case of *AMF International v Magnet Bowling Limited* [1968]³¹ in which it was said of *Clayton's* case:

That case (in both courts) further establishes that an architect has no right to instruct a builder how his work is to be done, or the safety precautions to be taken.³² It is the function and right of the builder to carry out his own building operations as he thinks fit. The architect, on the other hand, is engaged as the agent of the owner for whom the building is being erected, and his function is, inter alia, to make sure that, in the end, when the work has been completed, the owner will have a building properly constructed in accordance with the contract.

- 41 His Honour Judge Stabb QC's judgment in *Oldschool v Gleeson* (1976)³³ is the strongest possible endorsement of both of the above authorities. In his judgment, the learned judge stated:

The provision of temporary support and the mode of demolition and excavation are, in my judgment, matters for which the contractors and not the consulting engineers are responsible.

- 42 His Honour Judge Stabb QC specifically cited the Court of Appeal judgment in *Clayton v Woodman* and, in particular, the following passage from that judgment:

It might be suggested that the fault of the architect was in not advising the builder through his existing representative on site, the plaintiff, as to how the work required by the specification should be executed. If he had done so, the architect would have been stepping out of his own province and into that of the builder. It is not right to require anyone to do that, and it is not in the interests of the builder's work people that there should be a confusion of functions as between the builder on the one hand and the architect on the other. Thirdly, it might be suggested that the architect should have given a warning to the builder's workmen as to how the work should be done or that

³¹ 1 WLR 1028. In this case *AMF* were to install bowling equipment in a bowling centre being built by the defendant's contractors. After the contractors had said that the installation could begin, heavy rain flooded the partially constructed building and damaged the plaintiff's equipment. The contract was in the JCT 1939 form. Clause 14 made the Contractor liable for injury to property in words substantially similar to those of clause 20.2 of the JCT 1998 form. The bills contained certain items expressly requiring the Contractor to protect all work and materials. Equipment stored in a partially completed part of the Works was damaged by flood. It was held that clause 10 (the then equivalent of clause 12 in the 1963 Conditions) did not prevent the court from giving full effect to these items in the bills so that the Contractor was liable.

³² But see now Regulation 13(2a) of Construction (Design and Management) Regulations 1994 (CDM) which states:

"Every designer shall ensure that any design he prepares and which he is aware will be used for the purposes of construction work includes among the design considerations adequate regard to the need:

(i) to avoid foreseeable risks to the health and safety of any person at work or carrying out construction work or cleaning work in or on the structure at any time, or of any person who may be affected by the work of such a person at work,

(ii) to combat at source risks to the health and safety of any person at work carrying out construction work or cleaning work in or on the structure at any time, or of any person who may be affected by the work of such a person at work, and

(iii) to give priority to measures which will protect all persons at work who may carry out construction work or cleaning work at any time and all persons who may be affected by the work of such persons at work over measures which only protect each person carrying out such work."

³³ 4 BLR 103

there was some risk involved in doing it in a particular way. But also, it seems to me that that would have been stepping out of his own province and entering that of the builder. He was entitled to assume that the work would be properly carried out, that the builder knew his own business and would properly perform his own operations.

43 His Honour Judge Stabb QC further stated in *Oldschool v Gleeson*:

It seems abundantly plain that the duty of care of an architect or of a consulting engineer in no way extends into the area of how the work is carried out.

44 As will be obvious at this point, our general law position is an employer under a construction contract does not impliedly warrant the fitness of the site to enable the contractor to complete the work: *Appleby v Myers* (1867).³⁴ Nor does he warrant the feasibility of the design set out in the contract documents: *Thorn v London Corporation* (1876).³⁵

Implied variation arguments through difficulty of the build

45 In fact there is a long line of cases noted for their failed arguments made for the contractor, that what they contracted to do was “impossible” and they sought to argue frustration of contract. The most infamous is known to most of you as *Tharsis*.

46 *Tharsis Sulphur & Copper Co v M'Elroy* (1878)³⁶ was a House of Lords' decision, where the respondents were employed to erect a bridge structure including cast-iron trough girders. They attempted to cast the girders in accordance with the specified dimensions, but found that the girders were liable to warp and crack at that thickness. They therefore proposed that they would cast the girders with increased thickness to overcome the problem. The Appellants acquiesced, but did not order the change or agree to pay any increased price. On completion of the work, the Respondent contractor claimed a considerable amount in excess of the contract price for the extra weight of metal supplied. The claim was rejected. The Lord Chancellor commented, at pp. 1043/44:

On the other hand, the Respondents were in this position: they were obliged to execute the work; as I understand the contract they were obliged to execute it with the girders. If they could not cast the girders of the scantling, that is to say, of the exact thickness, mentioned in the contract, that was so much the worse for them. They ought to have known that when they undertook to execute the work in that form. Therefore they must have submitted to one of two things; either they must have refused to go on with the work, exposing themselves to the risk of being proceeded against for damages for not fulfilling their contract, or they must have increased the size, the scantling, of the girders to such an extent as would counteract the cracking to which the smaller scantlings subjected the girders.

³⁴ LR 2 CP 651

³⁵ 1 App Cas 120

³⁶ 3 App Cas 1040

Lord Hatherley agreed, concluding, at p.1050:

What the company permitted the Respondents to do was only for their own convenience, and that being so, there is nothing to support the claim made by the Respondents to be paid for it as extra work.

47 This is to be contrasted with the judgment of HHJ Stabb QC in *Turriff Ltd v Welsh National Water Development Authority*, which has subsequently been reported in full at [1994].³⁷

48 *Turriff* concerned a contract under the fourth edition of the ICE Conditions. The contractor claimed that it was impossible to lay the precast concrete culvert units within the tolerances laid down in the specification. Counsel argued that, in the context of ICE clause 13, “impossible” should be construed as “absolutely impossible”, but HHJ Stabb held that impossibility was to be interpreted in a practical or commercial sense, and that if it had to be interpreted strictly, it had to be interpreted strictly against both parties:

Turriff's contractual obligation was to manufacture, lay and joint the units in accordance with the drawings and the specification. I have already indicated that it was in that strict context, absolutely as well AS practically impossible successfully to joint them. It was not, plainly, absolutely impossible to manufacture the units to the required dimensions and tolerance, but in the ordinary competitive commercial sense, which the parties plainly intended, I am satisfied that it was quite impossible for Trocoll to achieve the degree of dimensional accuracy required.

49 The case is significant in taking a pragmatic view of impossibility in favour of the contractor. (The earlier case of the *Port Isaac Harbour Commissioners* [1942] AC 154 also found frustration based on commercial impossibility, but to the benefit of the Employer!).

50 The *Turriff* judgment is also notable for the significance attached by HHJ Stabb to the extensive pre-contract studies carried out by the employer on the precast units. He explained their significance as “*part of the contractual matrix*” within which the contract was to be interpreted.

51 So we see “traditionally” when an employer more commonly engages a contractor to construct a building on the basis that the building will be constructed in accordance with an architect's (or other design professional's) design supplied by the employer, then in this situation, the contractor, whilst agreeing to carry out the works in accordance with the design documents, makes no promise that the building will fulfil its intended purpose, save in those rare instances where such can be shown objectively to have been the case. Some limited design responsibility may, however, be placed on a contractor. For example, by virtue of the design documents failing to specify all materials, a choice of materials may be left to the skill and judgement of

³⁷ Const LY 122. (*Construction Law Yearbook*, published by Chancery Wiley.)

the contractor and this is a rich vein for disputes. In addition, under the general law and more often expressly too the contractor must comply with statutory requirements and that means with building regulations and bye-laws which may themselves overreach errors by the designer insofar as a design "missed the spot".³⁸

- 52 There are also circumstances in which a contractor may be under a duty to warn his client that the work that he has been instructed to perform is dangerous: see the review of the law by May LJ in *Plant Construction Plc v Clive Adams Associates and JMH Construction Services Limited*.³⁹ As May LJ made clear, a contractual duty to warn may arise as an aspect of a contractor's implied duty of skill and care. Whether such a duty in fact arises will depend on all the circumstances of the case. That case concerned the propping of a roof which JMH was instructed to carry out by the client's senior engineer. It was work that JMH was contractually required to carry out. The work should have been recognised by any competent engineer or contractor, and indeed was recognised by JMH, as dangerous. At page 532, May LJ said that the "crucial" elements were that the temporary works were obviously dangerous and were known by JMH to be dangerous. As he said:

JMH were not mere bystanders and, in my judgment, there is an overwhelming case on the particular facts that their obligation to perform their contract with the skill and care of an ordinarily competent contractor carried with it an obligation to warn of the danger which they perceived.

The fact that the details of the temporary works had been imposed by Ford and that Plant had Mr Adams as their consulting engineer do not, in my view, negate or reduce the extent of performance which the implied term required in this case. The fact that other people were responsible and at fault does not mean, in my judgment, that on the facts of this case JMH were not contractually obliged to warn of a danger.

- 53 All the authorities which deal with the question as to whether a contractor is under a duty to warn his client, are ones where what was in issue was the safety or suitability of what the contractor was himself being asked to undertake. It has now been held by the Court of Appeal that if the duty to warn arises, it is part of the duty to act with the skill and care of an ordinarily competent contractor. What is to be expected of such a contractor will depend on the particular facts of the case. The facts of the *Plant* case show that, where a contractor is asked to do work, he is likely to be under a duty to warn his client if he knows that the work is dangerous, and that duty will not be negated by the fact that the client is being advised by a

³⁸ See clause 6 of JCT 98 and JCT 05 clause 9 (save under MWD 2005); it is incumbent on the contractor to ensure that the employer's design complies with any statutory requirements (except in the case of DB 2005 where the employer's requirements state that they are so compliant).

³⁹ [2000] 2 T.C.L.R. 513.

professional person who knows, or ought himself to know, that the work is dangerous.⁴⁰

54 Thus, where the contract is silent as to some materials to be used in the construction the contractor is still obliged to choose and apply materials in order to carry out the works in accordance with his express undertaking. Such choice is aimed towards the expressly agreed result, that is, the completed building. If he chooses materials that fail or fall from the building, he will be facing the sharp stick of liability.

55 The process of construction is therefore subject to certain terms that the general law of contract recognises are to be implied into a building contract of this type. There is an acknowledged threefold implication upon the contractor that:

1. the work will be carried out with reasonable care and skill;
2. the goods used will be of satisfactory (that is merchantable in old speak) quality⁴¹; and
3. that goods will be fit for their intended purpose, in circumstances where a purpose is made known to the contractor by the employer and it is reasonable for the employer to rely on the contractor.

56 There is (see above) also arguably a fourth implied term placing on the contractor a duty to warn the employer that the architect's (or other design professional's) design is defective.

How should design risk be allocated best practice

57 To help clear the fog commentators have attempted to identify a "code of good practice", which provides "appropriate solutions" to the question of how risks, particularly as to design, should be allocated if the aggregate commercial advantage of all those involved is to be maximised.

58 The principles set out below essentially summarise this consensus. In particular cases it may not be possible to satisfy all of them simultaneously, but an objective, judicious balance may be struck.

59 Risks should be identified and a conscious decision about managing each major risk should be taken. A variety of strategies are available for dealing with individual risks, including retention, transfer and sharing, pain or gain, capped liability, limitation of

⁴⁰ As Lord Reid said in *Young & Marten Ltd v McManus Childs Ltd* [1969] 1 A.C. 454, 465: "no warranty ought to be implied in a contract unless it is in all the circumstances reasonable". See too Dyson J in *Aurum Investments Limited v Avonforce Limited (in liquidation) and Others* [2001] CILL 1729 which case involved work carried out by subcontractors to underpin the flank wall of an adjacent property. After the subcontractor had completed his work and left site, the main contractor excavated the basement of the property where the building works were taking place. In doing so, they provided no temporary lateral support for the flank wall underpinned by the subcontractors and this caused a collapse. The contractor contended that the subcontractor should have warned it of the need to provide such support during the excavation of the basement. The court dismissed this claim saying that it would involve an unreasonable extension of a sub-contractor's duty to warn about the safety and suitability of works which it is asked to undertake. This duty should not extend to work carried out afterwards by others which might affect the safety of its own work, where it was not foreseeable that such further work would be carried out unsafely.

⁴¹ The position in relation to the quality of goods under a traditional form of contract is clear. As Lord Pearce put it in *Gloucestershire County Council v Richardson* [1969] A.C. 480 at 494: "When [a contractor] engages to do certain work and supply materials, [he] impliedly warrants that the materials will be of good quality, unless the particular circumstances of the case show that the parties intended otherwise."

liability, barring consequential loss, etc. When a strategy has been decided upon, it should be expressed as a term in the contract.

- 60 Allocation of risks should be clear, complete and unambiguous. The more significant the risk, the greater the need for clarity. Uncertainty about the meaning or ambit of a term can itself be a major source of risk.
- 61 The allocation of risk should be "motivational". This means that its allocation to a particular party should have the effect of motivating that party to deal with it in the most effective and efficient way. This implies that the party who accepts the risk should be able to:
- influence its magnitude; and
 - control the effects of the risk once it has occurred; and should have an incentive for minimising and controlling the risk.
- 62 If one party can shoulder the effects of the risk once it has occurred, but the other may not be able to do so, the more capable party should bear it. This is because in a highly interactive contractual setting such as occurs for most construction contracts, significant risks being carried by one party also represent significant risks to the other. For instance, on a certain famous football ground in West London we have all read how some risks have jeopardised the solvency of key subcontractors and imperilled the main contractor. However, if the contractor fails, the employer will be left with an abandoned job. Hence, say, risk X is, by reflection, a risk to the employer also, and it is not in the employer's interest to place such a risk outside its own control. The emergence of contracted "risk registers" has gone some way to address this. However, see further below in the context of buildability.

Design responsibility the how and the what of construction

- 63 At common law in contract, we have seen that unless there is an express term to the contrary a contractor will be liable if its design fails to achieve the intended purpose even though there is no negligence on its part in preparing the design. This contrasts with the lesser standard of liability of a professional person, such as an architect or an engineer, who produces a design. They are only ordinarily liable if the design is defective due to their negligence.
- 64 So where does the risk lie? Where are the margins? If we take an ordinary lump sum contract (not being design and build) one can usefully consider the question the contractor will often be confronted by: the choice of working methods and temporary works (that is "how" as opposed to the "what" of construction). The "how" bit, in the absence of a specification telling him how to do the works, is for the contractor to decide and the employer will have no duty of guidance or intervention save to the contractor.
- 65 The contractor takes on responsibility for the design of the temporary works.⁴² In other words, he designs those works which are not to be permanent, but which are necessary to put in place the permanent works. The architect or engineer is liable to

⁴² In practice most consulting engineers expressly exclude temporary work design from their commission and therefore expect the contractor to undertake it.

the employer for the design of the permanent works. He must exercise professional skill and care in that design. This will be the position unless the evidence is that the architect/engineer has intermeddled in this province of the builder or vice versa.

- 66 This area of the law was the subject of a recent Court of Appeal case called *CGA Brown Ltd v Carr & Anor* (2006), CGA Brown Ltd ("CGA") where builders carried out works for the defendants ("Carr") at their house in Rochdale in 2003.
- 67 CGA agreed to do the work to the roof shown on the drawings prepared by Carr's architect for the purposes of obtaining building regulation approval. The work included an extension to add two dormer windows set into the sloping part of the roof, and a corresponding extension to the flat roof constructed above these windows. Expert opinion was that the drawings did not provide a very detailed level of information and the annotations provided left many assumptions as to interpretation and decisions on actual intention.
- 68 An annotation stated that the new flat roof was "to align through with the existing arrangement". The actual roof slopes were different to those shown on the drawings so following this instruction meant that the falls on the new roof were unsatisfactory. By the time CGA discovered this problem, they had completed work in accordance with the drawings, and had of their own initiative made a cold joint between the felt covering the existing roof, and the felt which they laid to cover the new roof. This joint was later condemned by the expert.
- 69 After discovery of the problem, CGA had proposed a solution which involved constructing a slightly pitched roof above the flat roof. Although Carr accepted CGA's quotation for this modification, it was not carried out. Whilst Carr was waiting for this work to be done, the roof began to leak very badly. Carr called another contractor who carried out an emergency repair and then later re-felted the whole of the flat roof.
- 70 The judge held that CGA were liable for the whole of the re-felting works as CGA should have spotted the problem with the drawings and advised Carr of it before they created a roof that was vulnerable to leakage because of the inadequacy of the joint that CGA decided to make.

The issues argued were:

- (i) Should Carr be allowed to succeed in the claim that CGA should have spotted the problem with the drawings as this was not pleaded? and
 - (ii) Should the costs of the re-felting have been awarded as CGA argued:
 - it was double recovery; and
 - it involved giving Carr a better roof than that they had contracted.
- 71 Carr's defence carried a general allegation of failure to carry out the works with reasonable care and skill. Necessarily involved in the carrying out of the work was an appreciation of what the plans provided, and what they did not provide for, as well as the actual work of construction which was involved in following them. Therefore,

an allegation of a failure to carry out the work with reasonable care and skill comprehended an allegation that CGA had failed to realise that such an instruction as was given to them in the plans was inadequate.

- 72 There was no double recovery. There had been two breaches of contract: the failure to spot the problem with the drawings and constructing an inadequate joint. The combination of these two failures left Carr with a roof which was inadequate and leaked. Carr modified the roof in accordance with the second contractor's recommendation which remedied the inadequate joint and left them with an acceptable roof, although one that still had unsatisfactory falls. Compensation was awarded to compensate Carr for the fact that they had been left with an inadequate roof and the original agreement required the builders at least to leave them with a roof that did not leak. There was no question of betterment in the work carried out by the second contractor. The builder, CGA Brown, had a duty to warn at this domestic consumer level. He did not. He pressed on. So then he became responsible for the choice. The Court of Appeal upheld the court of first instance. In brief, the Court of Appeal decided that the builders were liable for the full cost of repairing a defective roof because they should have realised that the drawings prepared by the architect were defective. They should have warned the clients about this before they continued with the construction of the roof.

Principles versus practical realities/buildability

- 73 It will be readily appreciated that since the contractor undertakes to carry out and complete the works, in circumstances where he encounters difficulties in executing the permanent design, his warranty of buildability may cause him serious exposure. He is contractually obliged to complete, see *Tharsis*. The architect or engineer may therefore simply shrug his shoulders and leave it to the contractor to come up with a solution. Exculpation for the contractor is only likely to be found where it is in the employer's interests, as much as the interests of the contractor, for a problem to be resolved so that works can go on. Then, in the interests of his employer, the architect may, where the contract permits, intervene and relax the specification. In practice, it is often the case that the employer wants to have the works completed so that he can gain access to the building to use it for the purposes for which it is being built. In these circumstances, the architect may help the employer by providing a solution to the contractor's predicament of apparent non-buildability.
- 74 Yet to most purists, the principle that the design professional might be responsible for buildability is an aberration from these well-established principles of English construction law, which state that buildability is the province of the builder.
- 75 An architect's general duty as to his design is to ensure that the design is prepared with proper skill and care. As we see, this does not amount to a warranty as to the fitness for purpose of the design.
- 76 The mere fact that a design lacks buildability would not be sufficient for liability to attach to the architect/engineer or other design professional taking such a role. It would have to be established that the architect/engineer failed to exercise due skill and care so as to ensure that his design did not lack buildability. This presents a

considerable legal and evidential hurdle to the contractor in attempting to recover a contribution from the architect/engineer.

- 77 For this reason it is necessary for the contractor to look at the architect's/engineer's detailing to see if that might be materially at fault. If the designer condescends to detailing (sadly rare for the architectural profession these days) the contractor may find it is less than clear that the architect/engineer is on the liability hook.
- 78 It is of note that in so far as further drawings or a specification are necessary to develop that design intent into something that can be built, the further drawings will be henceforth part of the design. The authority is *Holland Hannen & Cubitts v W.H.T.S.O* (1981).⁴³
- 79 There may, however, be a blurred borderline between design and workmanship. Things are rarely straightforward. For example, *Keating* suggests a carpenter choosing a suitable nail as opposed to a screw in a sense makes a design choice, ditto the type of brick tie he uses or where exactly he places them. Such a choice would usually be regarded as a normal incident of good workmanship, unlike say a choice of waterproof tanking system, or flat roof membrane.
- 80 *Keating* interestingly states at paras 1-142:

In the normal case of traditional contracts (i.e., where the design is not the responsibility of the contractor but that of the employer's architect) then much importance can be attached to the question of whether a defect is a design defect or a defect of workmanship. It is impossible to lay down hard and fast rules as to whether any particular defect will be one or another, for the choice between a flat roof and a pitched roof will be a matter of design, but the choice between a screw and a nail may well be a matter of workmanship. As a rule of thumb, the shape, dimensions, choice of material and other matters apparent from the drawings are generally regarded as design matters and the things left over for the good sense of the contractor are generally regarded as matters of workmanship.

- 81 Also in the case of *Bellefield Computer Services v E Turner & Sons*⁴⁴ in the CA it was said:

The extent of an architect's responsibility for the detailed working out of construction details for which he has provided an underlying design again depends on the express and implied terms of his engagement and its interrelation with the responsibility of others. The scope of any such responsibility depends on the facts of each case. There is a blurred borderline between architectural design and the construction details needed to put it into effect. Borderlines of responsibility cannot be defined in the abstract. A carpenter's choice of a particular nail or screw is in a sense a design choice, yet very often the choice is left to the carpenter and the responsibility for making it merges with the carpenter's workmanship obligations. In many

⁴³ 18 BLR at 114.

⁴⁴ [2000] BLR 97 (CA).

circumstances, the scope of an architect's responsibility extends to providing drawings or specifications, which give full construction details. But responsibility for some such details may rest with other consultants, e.g. structural engineers, or with specialist contractors or subcontractors, depending on the terms of their respective contracts and their interrelationship. As with the carpenter choosing an appropriate nail, specialist details may be left to specialist subcontractors who sometimes make detailed "design" decisions without expecting or needing drawings or specifications telling them what to do. In appropriate circumstances, this would not amount to delegation by the architect of part of his own responsibility. Rather that element of composite design responsibility did not rest with him in the first place

- 82 The practical consequences of the above principles are succinctly stated in *Hudson's Building and Engineering Contracts* as follows:

Unless the contract expressly stipulates to the contrary, the contractor is entitled to choose his own methods of working or temporary works; the corollary of this is that the contractor is not entitled, when faced with difficulties, to demand or require instructions as to how to overcome them. The architect's duty is normally confined to stipulating the final permanent result required, and if this has already been done, he is under no further duty to assist, and if inclined or requested to do so, should normally be careful to adopt a permissive attitude rather than giving mandatory instructions.

- 83 However, intransigence by a design professional is not always wise. The late Ian Duncan Wallace QC posited that there are four circumstances in which the client's interests may require the architect to intervene in the contractor's methods of working, or temporary works, if he has the power to do so under the contract. These are:

- If the method used is in breach of specification. There will then be a clear breach of the building contract with which the architect must deal;
- If the method imperils the permanent work, which will be a breach of the contractual term of good workmanship;

- If the method is unsafe (see comment earlier on CDM 2007, Regulation 11⁴⁵) and an accident would prejudice the interests of the employer by, for example, delaying the work or putting neighbouring property at risk; and
 - Where it is in the employer's interests to have speedy completion, and a relaxation of the specification, necessary for the contractor, allows this to happen. There will then be no additional payment to the contractor due to the variation.
- 84 These scenarios relate to the architect's ongoing duty to the employer to ensure that the project is satisfactorily completed. They should not be confused with the architect's duties as to his initial design. The contractor has already warranted to the employer that he can realise the architect's design. If it transpires that the contractor is unable to comply with this warranty and the architect, acting in the employer's best interests so as to mitigate the employer's losses, intervenes to overcome the impasse, the contractor can hardly rely on this as excusing his breach of warranty. Still less does the contractor have a cause of action against the architect for any failure to intervene.
- 85 The obligation of the contractor to carry out and complete the works must always be borne in mind where the contractor seeks to argue that the contract has been frustrated due, for example, to site conditions, or the condition of existing structures of which he was unaware when the contract was made. In the absence of express terms or statements to the contrary, the contractor warrants that he can carry out and complete the works whatever difficult conditions he may encounter on site. In design and build contracts, that generally includes any existing structures adopted, modified or incorporated in the works unless the contractor effectually qualifies his tender. See *Taylor Woodrow Holdings Limited v Barnes & Elliott Limited* below.
- 86 Analysing these principles it is strongly arguable that the architect/engineer who produces a design at the employer's request must, by reasonable implication, warrant that his design is sufficiently practicable that it will not frustrate the tender process by deterring contractors from tendering in numbers sufficient to meet the requirements of any competitive tendering process. As will be seen with the current run-up to the 2012 Olympics many main UK contractors are declining to bid having been put off doing so by the problems at Wembley.
- 87 However, it must be recognised that the invitation to tender carries with it a challenge to those tendering, which may be both a technological and a commercial

⁴⁵ CDM 2007, 11(3) "every designer shall in preparing or modifying a design ... avoid foreseeable risks to the health and safety of any person" This is a new duty to eliminate hazards and reduce remaining risks (so far as is reasonably practicable) and a new duty to ensure that any workplace they design complies with relevant sections of the *Workplace (Health, Safety and Welfare) Regulations 1992*. The risk assessment of a design should be integral to, and evolve with, the design work itself. As every design is different it will require a degree of calculation, assessment, review, and the proper exercise of judgement. If a designer is complying with Regulation 11 of CDM 2007, then as the design is worked through to completion any hazards should be eliminated and residual risks (to those who may be affected by them) reduced, so far as is reasonably practicable. This is, in effect, the application of risk assessment to the design. Designers' responsibilities extend beyond the construction phase of a project. They now also need to consider the health and safety of those who will maintain, repair, clean, refurbish and eventually remove or demolish all or part of a structure as well as the health and safety of users of workplaces per paragraph 111 CDM 2007 ACOP.

challenge, and all too often the putative contractor will not have devoted sufficient resources to the task⁴⁶. Where the challenge is accepted, tenders are received and a successful tenderer is awarded the contract. The architect/primary designer is entitled to assume that the work necessary to achieve his design will be competently carried out by a contractor knowing his own business, who warrants that he will be able to properly perform his own construction operations and manage his subcontractor labour to do so.

88 Once the contractor has determined that he can carry out the works and has warranted that he will do so by a method which is his responsibility, we have seen there is no room for the proposition that the architect/engineer warrants the buildability of the design by the successful contractor, or indeed any other tenderer who holds himself out as able to perform the building contract. He should, of course, out of prudence, warn his client that a novel method of construction may carry greater risks than traditional methods, or that he has reservations concerning a particular method. Indeed, a contractor faced with such risk himself should qualify his bid, but too often this is not done with the clarity the law requires, particularly as to risk of existing structures.⁴⁷

89 Thus a novel or one-off design, like adopting a refinement on a new proprietary building system, still places the design professionals on no higher duty than the ordinary standards of care (unless they espouse a higher duty) even though they have embarked on a novel design using untried and untested technology and expected the contractor to achieve it.⁴⁸ In *George Hawkins v Chrysler UK Ltd* (see below) it was held that in the absence of special circumstances it was not open to the court to extend the normal obligations of a professional beyond the obligation to take reasonable care. In particular it should be noted that the Court of Appeal rejected the attempt to make the engineer liable on the fitness for purpose basis due to a few oblique answers in cross-examination and made clear that the significance of the

⁴⁶ In the last decade contractors have taken on increasing amounts of risk to win work and chase short-term turnover. When projects go wrong, thin margins disappear and, without sufficient capital assets, contractors get in difficulties. There have been a number of well-publicised casualties. The cast list is long and includes Wembley Stadium, The British Library, The Channel Tunnel, the Jubilee Line extension, the Royal Brompton Hospital, Portcullis House, the Great Eastern Hotel, and countless other projects. Indeed Laing, one of the UK's oldest and best-known contractors, sold its construction business to O'Rourke for £1 following a number of difficult contracts, including its design-and-build contract for the Millennium Stadium in Cardiff. Given Laing's experience, it was perhaps no surprise that no UK contractor had the appetite to take on the risks of Wembley Stadium proportions which itself was a design and build contract. A lot of these big name contractors have burnt their fingers in design and build projects. Yet, the demand for design and build is huge among employers.

⁴⁷ See Mr J Jackson in *Taylor Woodrow Holdings Limited v Barnes & Elliott Limited* [2006] BLR 377 TCC.

⁴⁸ The professional designer does not therefore usually assume the higher obligation of ensuring that his designs produce something which is fit for its purpose. For a useful illustration of the point see *Hawkins v Chrysler (UK) Limited and Burne Associates* (1986) 38 BLR 36 per Fox LJ at 49-51, Dillon LJ at 53-54 and Neil LJ at 54-56. A well-known exception to this principle arose in the case of *Greaves (Contractors) Limited v Baynham Meikle and Partners* (1975). In that case, the engineer was found liable because his design did not result in a warehouse floor which was fit for its purpose (namely which could withstand vibrating loads of forklift trucks). However, that is an unusual case which turns upon its own facts. Ordinarily a professional's contractual obligation to his client only extends to agreeing to conduct his services with reasonable skill and care (but note *Gloucestershire Health Authority v Torpy* (1997) 55 Con LR where it was held that the standard of care to be expected from specialist engineers may be more onerous than general practice engineers).

decision in *Greaves & Co (Contractors) v Baynham Meikle & Partners*⁴⁹ should be confined to its special facts (which, of course, included a belated attempt by the defendant at trial to resile from a prior admission of the fitness for purpose term contended for by the claimant).

- 90 The “state of the art” might for example be such that a design fault would be undetected by other competent designers which would relieve the designer of responsibility. An illustration of “state of the art”⁵⁰ arose in *IBA v EMI and BICC* where a code of practice was followed which purported to enable subcontractors of BICC to design a 1,250-foot aerial mast to withstand pressures caused by 80mph winds. The code applied to lattice masts where high winds were assumed to blow off accumulations of ice. However, with the cylindrical mast proposed by BICC, there was a possibility that it might begin to oscillate dangerously even at low wind speeds at a time when any ice would not have fallen off. One of BICC’s masts in Yorkshire duly collapsed for this reason. Lord Edmund Davies held that the very fact that BICC’s design was a “venture into the unknown” created a clear duty to identify and think through potential problems and not merely rely on a code of practice. They had not reached the ordinary standard of care. The authors of the leading textbook on professional negligence (*Jackson and Powell*, 1992) state quite simply that “A professional is not entitled slavishly to follow the provisions of a code of practice”. They quote two examples from construction and engineering practice which leave little room for doubt as to the general attitude of the courts. In *IBA v EMI and BICC*. Lord Fraser said that he had “reached the firm conclusion that BICC failed in their duty of care when they applied the code of practice that had been found appropriate” (emphasis added). Even more significant is the case of *Holland Hannen and Cubitts (Northern) Ltd v Welsh Health Technical Services Organisation* [1985] 35 BLR 1, where Robert Goff LJ held that:

“In considering that question he cannot simply rely on the codes of practice. It is plain from the evidence that the code of practice is no more than a guide for use by professional men, who have to exercise their own expertise.”

- 91 Novel design also arose as an issue in *Department of National Heritage v Steensen Varming Mulcahy and Others* (1998), otherwise known as the British Library case. One of the complaints of the employer in *DNH v SVM* was that the use of lid down trunking for electrical cables was experimental. This prompted HHJ Bowsher QC to remark that if a designer adopts an experimental or unusual approach the duty on him to keep his design under review “is particularly high”. Therefore, it might be said novel design requires added caution on the part of the designer and a brave contractor constructs it!

⁴⁹ [1975] 3 ALL E.R. 99, where an engineer is employed to design a building, the purpose of which is made known to him, there will be an implied warranty by him that the design of the building will be suitable for its purpose. P, a builder instructed to build a warehouse, sub-contracted its structural design to D, a firm of consultant structural engineers. D knew or, by virtue of the relevant British standard code of practice, ought to have known that the warehouse was to carry loaded trucks and that there was a danger of vibration. The design was inadequate for the purpose of carrying such loaded trucks. Held, allowing P’s claim for breach of contract and a declaration of liability by D, that the duty of D was not simply to exercise due care and skill but to design a building fit for its purpose, in the light of the knowledge which they had as to its proposed user.

⁵⁰ In practice, however, “state of the art” arguments are rare and if a building or structure is not fit for its purpose due to a design defect, it is unlikely that a designer would avoid liability because, in such circumstances, he is also highly likely to have been negligent.

What if the design is based on incomplete data or assumptions?

92 The limitations on an engineer's ability to use and rely on preliminary design assumptions came up before the Court of Appeal in the now epic case of *Mirant Asia-Pacific Construction (Hong Kong) Ltd v Ove Arup & Partners International Ltd*.⁵¹ There was a claim by Mirant for damages, in the sum of US\$62.5m, as a result of Arup's negligent design of the two principal foundations for Boiler Unit 1 of its coal-fired power station at Sual in the Philippines.⁵² Arup entered into two agreements with Mirant, one to design, inter alia, foundations and the other to carry out a ground investigation. Arup was sued under both the design agreement and the ground investigation agreement. The latter incorporated a five-year limitation of liability period and a £4 million limit of compensation but the former, sadly for Arup, did not. It was argued Ove Arup had not exercised due care and skill when designing foundations.

93 These foundations had failed as the ground load-bearing capacity was less than envisaged by Ove Arup. Ove Arup had prepared its designs on assumptions of what the load-bearing capacity was, but failed to have those assumptions verified and failed to warn Mirant that their design was based on unverified assumptions. Ove Arup unsuccessfully argued that there was no duty under the design agreement for it to verify the ground conditions. The court held that Arup were liable under the design agreement, because an aspect of foundation design involves checking that initial designs were later verified by detailed and systematic mapping, and Arup had failed to do this. The Court of Appeal found: "The designing engineer is responsible for the design, and he should normally see to it that the necessary additional information is conveyed back to him, so that he may judge that it is sufficient for the purpose of his design." The Court of Appeal further said:

If the designing engineer's knowledge of the ground conditions is insufficient to enable him to determine a safe bearing capacity, he may work initially upon assumptions. He has an obligation to see to it that the requisite additional information is acquired to verify the assumptions. He does not necessarily have to get the additional information personally but he must see to it that someone does, and he must see to it that the client knows that the additional information has to be obtained. Absent an explicit warning and disclaimer it would not be sufficient for a designer whose initial design is based on an unverified assumption to leave it to the client alone to obtain and evaluate the additional information. The designing engineer is responsible for the design, and he should normally see to it that the necessary additional information is conveyed back to him, so that he may judge that it is sufficient for the purpose of his design.

94 This judgment emphasises the need for engineers and designers to adopt a risk management-based approach to the verification of design assumptions.

⁵¹ (2005) 97 Con. L.R. 1

⁵² There was major settlement of foundations at a time when the load was a very small fraction of the eventual design load.

So should the designer warn the client that the design is novel?

95 In a decision of HHJ Newey QC called *Equitable Debenture Assets Corporation Limited v Moss* (1983) about innovative cladding, the court said the warning should be given to get the client's approval. Does warning make any difference to the architect's liability unless the employer approval is meant in some way to diminish the burden on the architect? If the novel design fails in a wholly unexpected way it is not in itself capable of imposing liability on the design professional, yet lack of warning might still help the employer in its suit against its designer. Thus in *DNH v SVM* HHJ Bowsher QC referred to the "warning point" but did not adopt it as a guide in that case.

Can the employer's own expertise reduce the primary designer's liability?

96 In *London Underground v Kenchington Ford* (1998),⁵³ LUL the employer of works had sufficient expertise to intervene in the design process of a station concourse slab for the Jubilee Line extension. However, that did not "in any way relieve" the defendant design professionals of their contractual design obligations, or modify their duties of care.

What of the designer's design duty to his client?

97 As we have seen in *Mirant*, as to his client, an architect/engineer has a duty in contract towards his client for whom he has designed a building to remedy defects in his design even when his duties do not extend to the administration of the construction contract if defects come to his attention before the completion of the works: *Tesco Stores Limited v The Norman Hitchcox Partnership Limited* (1997).⁵⁴ Where the court was left in no doubt that an architect "has a continuing duty towards his client both in contract and tort to see that his design is appropriate up to the time of completion of a building where he not only designs the building but also administers the construction contract".

What happens where the design professional carries out design plus contract administration?

98 In such cases, the architect/engineer (or other design professional) is usually under a continuing duty to check that his design will work in practice and to correct any errors which may emerge: *Brickfield Properties v Newton* [1971].⁵⁵ As to the duration of the duty, it was held in *Equitable Debenture Assets Corporation Limited v Moss* to last until the building reaches practical completion. However, in *University of Glasgow v Whitfield* (1989) 42 BLR at p. 78 His Honour Judge Bowsher QC saw no reason why the duty should be so limited in time despite the fact that the architect's right to require work to be done alters at the point of practical completion. When commenting on this decision in his judgment in *DNH v SVM*, HHJ Bowsher QC said the duty extends beyond practical completion "in some circumstances". The persuasive circumstance identified in *University of Glasgow* seems to have been that there the architect "*knew or ought to have known that his design was bad from the start*". As

⁵³ 63 Con. LR 1 TCC

⁵⁴ 56 Con. LR at p.170

⁵⁵ 1 WLR 862

noted above, the duty to review is heightened in the case of unusual or experimental design.

- 99 In *Eckersley v Binnie* (1988)⁵⁶ an accumulation of methane gas found its way from a tunnel into a pumping house on a link between the Rivers Lune and Wyre causing an explosion and the death of 16 people. The victims or their families brought tort claims against the consulting engineer, the contractor and the water authority client. All three defendants were found liable by the court at first instance and all appealed to the Court of Appeal. The court held that only the consulting engineer was liable. The contractor was let off as it was held that the contractor's duty to test for methane was only relevant to safety during the period of construction. The consulting engineers argued that their pre-design investigations were sufficient in the light of contemporary knowledge and that methane was not present during construction. It was held, even applying the standard of the ordinary competent and that professional, that the consulting engineers should reasonably have foreseen the presence of some, not necessarily a dangerous, quantity of methane and should therefore have reviewed their ventilation design in the light of experience during construction.⁵⁷
- 100 By all events since 31 March 1995 Regulation 13 of the previous Construction (Design & Management) Regulations 1994 and now Regulation 11 of the Construction (Design & Management) Regulations 2007 (CDM 2007) has required designers to ensure that there is a positive regard for the health and safety of any person at work carrying out construction work.

Who said there was no liability for pure economic loss whether you are a contractor or a designer?

- 101 Following the decision in *Murphy v Brentwood District Council* [1991]⁵⁸ it was generally considered that the scope for the imposition of a duty of care not to cause economic loss was severely fettered. For some 13 years prior to that it was considered that if there was sufficient proximity between wrongdoer and claimant and no considerations to negate the imposition of a duty of care, a cause of action would arise when a building presented an immediate or imminent danger to health or safety. The decision in *Murphy* exposed the reality that until physical injury is caused to something other than the building itself or to a person, the loss is economic only and in such circumstances the test formulated in *Anns v London Borough of Merton*⁵⁹

⁵⁶ 18 Con.L.R. 1, CA

⁵⁷ It is interesting to note Bingham LJ (dissenting in *Eckersley v Binnie* (1988) 18 Con LR 1 at 80) provided a detailed account of the level of knowledge and skill necessary for the professional person: "a professional man should command the corpus of knowledge which forms part of the professional equipment of the ordinary member of his profession. He should not lag behind other ordinary and assiduous and intelligent members of his profession in his knowledge of new advances, discoveries and developments in his field. He should have such awareness as an ordinarily competent practitioner would have of the deficiencies in his knowledge and the limitations on his skill. He should be alert to the hazards and risks in any professional task he undertakes to the extent that other ordinarily competent members of the profession would be alert. He must bring to any professional task he undertakes no less expertise, skill and care that other ordinarily competent members of his profession would bring but need bring no more. The standard is that of the reasonable average. The law does not require of the professional man that he be a paragon combining the qualities of a polymath and a prophet."

⁵⁸ 1 A.C. 398, HL

⁵⁹ [1978] A.C. 728

was not a sufficient basis for the imposition of a duty of care to avoid causing economic loss. Since it is rare for buildings to be so poorly constructed or, more precisely, for such defects to remain latent until the building begins to collapse, it looked as if the days of multi-party litigation were over. I well remember going to a conference with Richard Ferneyhough QC in 1989 as the law of tort slipped through our fingers!

102 Of course the classic authority for the recovery of economic loss in tort is *Hedley Byrne & Co Ltd v Heller & Partners Ltd* [1964].⁶⁰ Briefly, liability can arise in negligence where advice is given and relied upon to the detriment of the claimant. In *Henderson v Merrett* [1995],⁶¹ Lord Goff held that the principle underlying *Hedley Byrne* was an assumption of responsibility by the person providing information or services to the claimant, coupled with reliance by the claimant, and that once this was established it was unnecessary to consider whether it was "fair, just and reasonable" to impose liability.

103 Just a few months after *Henderson v Merrett* it became apparent that this principle could have wide-ranging applications. After all, professionals in the construction industry provide information or advice and contractors and subcontractors provide services, all of which can be said to be relied upon by the employer. Thus in *Barclays Bank plc v Fairclough Building Ltd*⁶² specialists were engaged to clean an asbestos cement roof. They did so using pressure washers but without taking the recommended precautions. As a result the impact of the water created a slurry containing asbestos which entered the building. It was held that the specialist owed a duty of care to the contractor in respect of the economic loss suffered by it (i.e. the cost of remedial works). The point of principle was dealt with by the Court of Appeal tritly:

"A skilled contractor undertaking maintenance work to a building assumes a responsibility which invites reliance no less than the financial or other professional adviser does in undertaking his work."

104 It began to look as if the road to the recovery of economic loss apparently firmly shut by *Murphy* was beginning to open once again. Thus, in *Storey v Charles Church Developments Ltd*⁶³ Charles Church designed and built a house for Mr and Mrs Storey. Structural damage was discovered but it was accepted that the loss was economic. It was held that Charles Church did owe a duty of care to the Storeys in respect of such loss. The judge asked himself whether there had been sufficient "assumption of responsibility coupled with the concomitant reliance". It is important to note that the parties had a contractual relationship which imposed a duty of care (which presumably was not relied upon because of limitation problems) but this was no inhibition to the imposition of a concurrent duty in tort.

105 Similarly in *Tesco Stores v Costain Construction Ltd and Others* the shop owner sought to recover for losses arising out of a fire. The court concluded that

⁶⁰ A.C. 465, HL

⁶¹ 2 A.C. 145 HL

⁶² (1995) 44 Con. L.R. 35

⁶³ (1995) 73 Con. L.R. 1

"anyone who undertakes by contract to perform a service for another upon terms, express or implied, that the service will be performed with reasonable skill and care, owes a duty of care to like effect to the other contracting party or parties which extends to not causing economic loss".

He thus held that the contractor owed the shop owner a duty of care in respect of the work which it carried out (as opposed to work carried out by its subcontractor) which duty included not causing economic loss.

- 106 This progression of cases has not, however, been without upsets. In *Samuel Payne v John Setchell Ltd*⁶⁴ civil engineers were instructed to carry out a ground investigation of a site and existing foundations in connection with the extension of a cottage. Acting on their advice the claimant demolished the cottage and constructed two new cottages on structural raft foundations. The engineer prepared structural drawings, inspected the foundations and reinforcement, and certified that the works had been carried out to their satisfaction. Subsequently the same engineer was engaged in connection with the construction of further cottages and in this case the engineers inspected the ground and foundations and provided certification. The judge concluded, relying on *Murphy and DOE v Bates*, that "as a matter of policy, although a builder must be taken to have foreseen the possibility of loss or damage arising from inherently defective work for which it was responsible, it did not owe a duty for care to anybody (including the person who engaged the builder) to avoid causing such loss or damage unless it was physical injury to persons or damage to property other than the building itself". He further concluded that a "builder" for these purposes encompasses "whoever was primarily responsible for the defect" and therefore covered the engineers in this case. Whilst the judge accepted that liability could arise as a result of reliance on advice or statements where there is in law an assumption of responsibility for loss, such an assumption of responsibility "is generally not found when the parties' relationship is governed by contract, especially if there is anything other than the simplest arrangement". The judge therefore disagreed with both the reasoning and conclusion in *Storey*.
- 107 The decision in *Samuel Payne* was not, however, followed in *Tesco Stores* or in *Mirant Asia-Pacific Construction v Ove Arup* referred to above, but it is the question of the relevance of a contractual relationship to the existence of a duty of care that has been considered most recently. Contractual relationships may be relevant in two circumstances:
- (i) Where there is a direct contract between the claimant and the alleged tortfeasor; and
 - (ii) Where there is a chain of contracts as between the claimant and the alleged tortfeasor.
- 108 Both these situations were considered by the Court of Appeal in *Riyad Bank v Ahli United Bank (UK) plc* [2006].⁶⁵ The case involved the negligent overvaluation of operating leases of equipment in circumstances where there was a contract between

⁶⁴ [2002] B.L.R. 489

⁶⁵ EWCA Civ 780, CA

the bank and an intermediary and a further contract between the intermediary and the negligent advisers. What was the relevance of these contractual relationships to the existence of a *Hedley Byrne* duty of care?

109 As to situation (i) Lord Goff in *Henderson*, having analysed the historical context in detail, concluded that

"the common law is not antipathetic to concurrent liability, and that there is no sound basis for a rule which automatically restricts the claimant to either a contractual or tortious remedy".

Of course it is always open to the parties to exclude such a liability either expressly or by inference. This analysis was endorsed in *Riyad Bank* in order to rebut the suggestion that in a purely commercial relationship there is no room for tortious duty of care.

110 Situation (ii) was, however, more problematic because Lord Goff in Henderson had suggested that a subcontractor would not ordinarily owe a duty of care to an employer since there is "generally no assumption of responsibility by the subcontractor or supplier direct to the building owner, the parties having so structured their relationship that it is inconsistent with any such assumption of responsibility".

111 In *Riyad Bank* the Court of Appeal treated the chain of contracts as merely one circumstance relevant to the question as to whether the adviser in that case assumed responsibility. This, on the facts of that case, depended upon:

- The terms of the relevant contracts;
- Why the parties had chosen to structure their relationship in that way and, in particular, whether it was done to avoid any legal liability as between the parties;
- The advice given directly by the tortfeasor to the claimant notwithstanding the chain of contracts.

112 Whilst it may be an exaggeration to say that economic loss is now recoverable in situations where it was thought to be irrecoverable under the *Anns* principle (because inter alia the HL in *Murphy* overruled it), decisions since *Murphy* have seen a gradual swing of the pendulum towards the imposition of a duty of care.

113 Therefore in practice duties of care to avoid causing economic loss may well arise:

- notwithstanding the existence of a contract or chain of contracts between the tortfeasor and the claimant;
- where the tortfeasor provides services, e.g. mere construction work or specialist work;
- where the reliance is "assumed" in the sense that the tortfeasor is a specialist such as in *Barclays Bank*;
- or where the reliance is implicit from the terms of the contract, e.g. *Tesco Stores*.

114 Given the nature of most construction work, in particular its specialisation and the use of technically demanding and complex procedures, it is likely that designers, project managers, contractors and subcontractors are all at serious risk of a claim in tort for economic loss. You are on notice!

What happens to design risk in design and build contracts?

115 In the last decade contractors have taken on increasing amounts of risk to win work and chase short-term turnover. When projects go wrong, thin margins disappear and, without sufficient capital assets, contractors get into difficulties. There have been a number of well-publicised casualties. The cast list is long and includes Wembley Stadium, the British Library, the Channel Tunnel, the Jubilee Line extension, the Royal Brompton Hospital, Portcullis House, the Great Eastern Hotel and countless other projects. Indeed Laing, one of the UK's oldest and best-known contractors, sold its construction business to O'Rourke for £1 following a number of difficult contracts, including its design and build contract for the Millennium Stadium in Cardiff. Given Laing's experience, it was perhaps no surprise that no UK contractor had the appetite to take on the risks of Wembley Stadium proportions which itself was a design and build contract. A lot of these big name contractors have burnt their fingers in design and build projects.

116 Yet, the demand for design and build is huge among employers, (see footnote 21). Within the scope of a design and build contract there can be a wide range of design risk apportionment between the employer and the contractor. Employers often wish to pass as much risk as possible to the contractor. The risk apportionment depends principally upon four issues and the negotiating weight of the parties:

- The nature of the design duty, e.g. whether it is a duty to achieve a specified result or satisfy particular criteria, or whether it is a more general duty to achieve fitness for purpose;
- The level of responsibility or nature of the obligations of the contractor in relation to the design carried out by it, i.e. whether the duty is an absolute one, or whether it is a lower duty (for instance) of reasonable skill and care;
- The definition under the contract of the documentation for which the employer is responsible and the documentation and/or tasks for which the contractor is responsible (the Employer's Requirements v Contractor's Proposals); and
- The liability of the contractor in relation to that design, taking into account any limitations on liability, for instance an exclusion of liability for economic or consequential loss.

117 In practical terms, it is often very difficult for a building owner to know whether a building defect arises out of a failure of the architect or engineer to make a proper design, or out of the failure of the contractor to execute the design which of course is where the role of construction lawyers and experts comes in. Likewise, it is often difficult to know whether a workmanship failure by the contractor could have been prevented by proper supervision by the architect or engineer. This difficulty can

have special importance in that a building owner often needs to know whether to regard the architect or engineer as friend or foe in litigation against the contractor. For this reason pre-action protocol procedures have a distinct advantage in flushing out facts on such positions. These protocols are rather better than the old days.

What limitations upon liability for design and defects should be included in contract conditions to limit exposure?

- 118 The most common restrictions upon liability in relation to design and defects in design and build contract conditions are among the following:
- 119 The limitation of the design duty to one of reasonable skill and care is mentioned above.
- 120 In some engineering and engineering procurement and construction (EPC) contracts where there are performance and satisfaction tests, there may be liquidated damages for non-performance in relation to defects/deficiencies in plant etc. which are not a condition of completion but work against the contract price. These liquidated damages will often be an exclusive remedy in relation to the relevant breach of contract.
- 121 The contract may also exclude liability after the end of the defects liability period. This was, to some, the unexpected effect of the cases of *Colbart v H. Kumar* and *Crown Estate Commissioners v John Mowlem and Company Limited*. The JCT in the mid-1990s issued amendments to the relevant forms to reverse the effect of these seminal cases.
- 122 In any event, great care needs to be taken with any clause which might purport to suggest that the effect of a final or maintenance certificate is conclusive proof that the works have been performed in accordance with the contract: see *Attorney General of Hong Kong v Wang Chong Construction Company Limited*.⁶⁶
- 123 It is normal in many types of contracts, particularly those for process plants, to exclude all contractor's liability for consequential loss, other than liquidated damages for delay and (if relevant) performance and specific indemnities, for instance in relation to intellectual property. For example, the FIDIC conditions for electrical and mechanical works, but not the FIDIC conditions for civil works, exclude the liability of either party to the other for any loss of profit, loss of use, loss of production, loss of contracts or any other indirect or consequential damage.
- 124 Some contracts, for instance the FIDIC electrical and mechanical conditions mentioned above, state that the parties intend that their respective rights, obligations and liabilities as provided in the contract should alone govern their rights under the contract in relation to the works. If such a clause is included, it could be argued that there are no rights on the part of the employer extending beyond the obligations in relation to defects stated in the contract. These will typically be restricted to an obligation to repair the physical defects during the defects liability

⁶⁶ 8 Const. L.J. 137 (1991) which considered the Hong Kong Government Standard Form equivalent and decided this meant that the issuance of the maintenance certificate did not bar a claim arising from unperformed contractual obligations.

period. The effect of such a clause may be both to exclude liability for defects in the works arising after the end of the defects liability period and, in relation to defects arising during that period, to exclude any liability for consequential loss although, if advising a contractor, care will need to be taken that the exclusion is expressed in sufficiently explicit terms. Even if a wide exclusion of liability is not agreed, it may be appropriate to exclude any liability of the contractor to the employer in tort.

- 125 Particularly in contracts for process plants,⁶⁷ there may be an overall cap on the liability of the contractor. The FIDIC electrical and mechanical conditions, for instance, provide that the liability of the contractor to the owner shall not exceed a sum to be stated in the contract, or if there is no sum stated, the contract price. Similarly, the FIDIC Red Book Conditions of Contract, clause 17.6. The contract price is defined as the sum specified in the letter of acceptance and this is not the same as the price adjusted after any variations. The contractor may wish to negotiate a cap equal to the total amount actually received by the contractor at the time of the relevant claim or, possibly, at the time the circumstances that gave rise to the claim arose. Furthermore, after practical completion, the limit may be decreased to a percentage of the contract price.

Insurance issues and design & build

- 126 As long ago as 1820, in the case of *Duncan v Blundel*,⁶⁸ Bayley J stated that:

Where a person is employed in a work of skill, the employer buys both his labour and his judgment; he ought not to undertake the work if it cannot succeed and he should know whether it will or not; of course it is otherwise if the party employing him chooses to supersede the workman's judgment by his own.

- 127 Since then we have seen English law has developed so as to regard buildability as the province of the builder (even where the employer engages a professional architect and/or engineer) and not the province of the employer. However, in the absence of express warranties concerning buildability from the architects and engineers within the employer's design team, the courts should be slow to hold contractors liable if designs appear impossible to implement. This all has deep meaningful implications with the insurance world.
- 128 Professional indemnity policies for contractors are invariably narrower in scope than those available to professional consultants. There are major restrictions on the scope of activities covered. For instance, commonly inspection by the contractor of his own work is not covered, whereas inspection by a consultant of a contractor's work is. There are restrictions on who must do the work for it to attract cover. It must be done by a "qualified architect, engineer or surveyor". The Architects Registration Board is zealous in enforcing the statutory restrictions on who can call themselves "architects", and architects' practices employ numerous people who

⁶⁷ Yet nowhere in the standard forms of building or engineering contracts known as JCT, ICE, GC/Works/1 or NEC, will you find a clause expressing the parties' rights to be exclusively set out within the conditions of contract to the exclusion of all common law rights. So the IEE MF/1 clause 44.4 is rare.

⁶⁸ (1820) 3 Stark 6

would not satisfy the definition. Such requirements for "qualified" professionals are not generally found in consultants' policies, so the work of unqualified architects would normally be covered under an architect's policy, but not under a builder's unless expressly extended.

- 129 The problem with design & build is, of course, that the contractor takes on a whole raft of responsibilities under his contract; but insurers only want to underwrite professional risk the duty to act with reasonable skill, care and diligence. Distinguishing more onerous risks can cause difficulty even in the sphere of consultants' policies but in the realm of design & build it can cause major problems. Design & build policies bristle with exclusions and conditions but there is one silent exception which can be the most important of all: pricing risk.
- 130 Picture a contractor who has signed a design & build contract to construct a hospital that includes the installation of a baby critical care facility with special M&E. The contractors subsequently (and properly) discover that there has been a major calculation error so that the power demand of the unit is twice that allowed for at tender, which requires major enhancement of plant and containment ductwork. The contractors suffered a loss the moment they signed the contract as they were unwittingly committed at that point to delivering a system considerably more costly than that for which they had bid at tender stage. At the date of execution, the contractor owed no professional design duties to the employer. His losses have arisen from correcting the contract design to meet the employer's performance requirements. Only if they do not amend the design will they be in breach of their professional duties. This loss is not therefore covered under the design & build policy.
- 131 If the embedded design error is not discovered promptly, the contractor may begin to aggravate the situation by ordering and installing incorrect equipment. Negligent errors which produce measurable cost additional to the intrinsic contractual necessity to upgrade the design will be covered under the policy. It will be necessary to identify when the change in design should first have been identified in the course of professional duties post contract and then calculate the additional losses caused through delay in identifying the required design change. Clearly, the moment of discovery can be at any time from immediately after signature to after expiry of the defects liability period.
- 132 This exercise correlates with the exercise that would be involved in identifying losses under traditional procurement. If the consultant undersizes plant initially, it will be a defence to prove that the larger plant was necessary and the employer would always have had to meet the cost if properly advised. The consultant will be liable to the employer for additional losses caused through failure to identify the correct plant at the right time. As a general rule, therefore, it can be said that these "employer" risks, which under design & build are transferred to the contractor, are not recoverable under the contractor's design & build policy. They are the contractor's own pricing risks of the transaction. Correct analysis shows that these losses are irrecoverable at whatever stage they manifest, whether before, during, or after, construction.

- 133 The need for the contractor to give credit for the pricing risk element is sometimes missed, both before and after practical completion, when claims are adjusted. Typically, the later the design error is discovered, the larger will be the proportion of loss that is covered. If the problem is discovered before practical completion, it may trigger a claim under the mitigation of loss provisions in the policy. These typically provide for insurers to pay costs of rectifying problems, which if not corrected would produce a greater claim under the policy than the costs of necessary remedial works. Mitigation of loss clauses are often not clear in how the compensation under the policy is to be calculated. Insurers should not be obliged to pay the cost of completing the work properly without getting credit for the costs the contractor would have had to incur in performing the contract without negligence.
- 134 For contractors, protection can best be secured by obtaining independent professional advice affecting the key design risks before the contract is signed and by subcontracting the professional work after the contract has been won. If the professional advice about the key design risks is wrong, then the contractor will have a claim for the additional price he would have quoted for the job if the unrecognised risk had been pointed out. In the example, if M & E engineers acting on the employer's behalf had failed to pick up the error before contract, the contractor would have a claim against them for the additional price he would have quoted for the job had he been aware of the air conditioning system that would be required.
- 135 As Mahatma Gandhi once said, "*Live each day as if it were your last, but learn each day as if you were to live forever.*" This way, constructors will do justice to their clients, their pocket and their funders.

Cost of reinstatement versus diminution in value

- 136 The basic principle is that awards of damages for breach of contract are intended to put the innocent party in the position they would have been in had the contract been properly performed, so far as money can do this. Where the claimant has suffered financial loss, then money will be able to do this relatively easily. So, for example, the usual measure of damages for defective work or materials is either the diminution in value of the property which results from the defects or the cost of putting the defects right, subject to considerations of reasonableness, mitigation of loss and so on.
- 137 It is perhaps extremely rare for a complex construction project to be completed without there being at least some minor breach of the contract requirements concerning the quality and attributes of the finished building. Virtually all construction contracts contain very detailed specifications, drawings and details relating to such matters, and a combination of the complexity of the construction itself and human nature gives ample scope for minor deviations from the contractual specifications.
- 138 The normal measure of damages for defective work is the cost of reinstatement taken at the time when the defect was discovered (*East Ham Corporation v Bernard*

Sunley (1966)).⁶⁹ The claimant will not necessarily lose his entitlement to damages if he waits for the outcome of the case before carrying out the remedial works; it all depends upon the circumstances of the case (*William Cory & Son Ltd v Wingate Investment (London Colney) Ltd* (1980)).⁷⁰

- 139 Where the law has had difficulties in the past is where there has been a breach of contract but the innocent party claims damages for example for distress, anxiety, discomfort, inconvenience and loss of amenity which fall outside these two recognised classes of damages.
- 140 In most cases, the building owner will be able to recover damages representing the costs of remedying any breaches of the requirements of specifications without great difficulty. However, this may not always be so. To give an example, suppose that a specification for the construction of a ten-storey office block stipulates that the first ten courses of brickwork are to be built using a particular coloured brick, but that the contractor uses a different colour from that stipulated. In these circumstances, what is the building owner's remedy? They will not have a claim for loss represented by diminution in value, since the value of the office block is unaffected. Can they recover the cost of remedying the defect, involving dismantling large parts of the building and replacing the bricks with those of the right colour? Again, the answer is likely to be no, since a court would regard the cost of repairing the defect as wholly disproportionate to the loss suffered and therefore unreasonable, see *Ruxley Electronics and Construction Ltd v Forsyth* below. In these circumstances, the contractor will no doubt argue that the building owner has suffered no loss, so that the contractor should not be accountable for their breach.
- 141 In consumer contracts, claims are frequently included in claims for damages for breach of contract and/or damages for "distress, anxiety, disappointment and inconvenience". In commercial contracts, however, such damage is unlikely to be suffered, let alone be recoverable. As stated in *Johnson v Gore Wood & Co*⁷¹: contract-breaking is treated as an incident of commercial life which players in the game are expected to meet with mental fortitude.
- 142 This suggests that the building owner may be left without remedy as a result of the contractor's breach. However, the House of Lords in *Farley v Skinner*,⁷² has restated the law on the recoverability of damages for non-pecuniary losses and suggests that the building owner may, in fact, be entitled to recover an award of general damages for loss of amenity.
- 143 By all events damages are fundamentally assessed on the compensatory principle. That is to say that the aim is to provide full compensation to the claimant for the

⁶⁹ 3 ALL ER 619; Lord Cohen in *East Ham Corporation v Bernard Sunley and Sons Limited* cited with approval a passage in *Hudson's Building and Engineering Contracts*, Eighth Edition, which had postulated three possible bases of assessing damages for defective work, namely either the cost of reinstatement, the difference in cost to the builder of the actual work done and the work specified, or the diminution in value of the work due to the breach of contract.

⁷⁰ 17 BLR 104 CA

⁷¹ [2001] 2 WLR 72

⁷² [2002] 2 AC 732

wrong and to restore him to the position he would have been in had that wrong not been done. The aim is not to penalise the defendant as such.

- 144 If restoring the claimant to the position he would have been in but for the wrong means that the claimant will be left better off than he would have been had he not committed the wrong, then the law does not act to prevent this result *British Transport Commission v Gourley*.⁷³
- 145 It follows from the compensatory principle that the claimant is prima facie entitled to recover not just the loss directly resulting from the wrong, but also his consequential loss, including future loss.
- 146 Difficulties and arguments in the assessment of damages almost all derive from the problem of trying to apply this principle to the facts of a given case, and quite often from a failure to apply it.
- 147 Cost of making good basis unless out of all proportion to the benefit to be obtained
- 148 The cost of making construction works conform to contract is regarded as the ordinary measure of damages for defective performance under a building or engineering contract.
- 149 But if the cost of reinstatement is out of all proportion to the benefit to be obtained by the building owner from the remedial works then the correct measure is the diminution in value. That was the decision in *Ruxley Electronics and Construction Ltd v Forsyth*⁷⁴ (See below).

The diminution in value basis

- 150 In *Bence Graphics International v Fasson UK Ltd*⁷⁵ the defendant supplied defective vinyl film which was used to make identification decals which were then sold on by the claimants. The claimants settled one claim from a buyer but the claimant's major buyer had not made a claim at the date of trial, although one had been intimated. The Court of Appeal held that the first instance judge had erred as he had not had regard for the fact that damages awarded would leave the claimant over half a million pounds better off than it would have been if there had been no breach of warranty. The loss was to be assessed by reference to the actual loss, which was likely to be less than the diminution in value of the goods by reason of the defects, because the defendant knew of both the proposed end use of the vinyl film and that defects were likely to result in claims on the claimants.
- 151 By all events where the claimant's claim is based upon breach of an obligation of the defendant with regard to building work, the main head of damage is usually the cost to the plaintiff of having the work remedied or completed, or otherwise obtaining what he has a right to expect from that defendant. In breach of contract cases the

⁷³ [1956] AC 185 It should be remembered that in calculating a loss by the claimant, the incidence of hypothetical tax on any actual and prospective loss of earnings, etc. must normally be taken into account. Damages are therefore assessed on the basis of the net loss.

⁷⁴ [1996] A.C. 344 at 366, HL

⁷⁵ [1997] 1 All ER 979

plaintiff must give credit for any sums which he has not paid, but which he would have been obliged to pay, had the defendant completed his contractual obligations.

- 152 It should be stressed that this rule applies where the claimant has a right to the proper execution of work. Different rules apply to negligent survey cases where the defendant's only obligation was to advise upon an existing building. A surveyor who negligently fails to identify dry rot does not cause that dry rot and is liable only for such loss as arises subsequently. The basic rule is subject to occasional exceptions.
- 153 In *Newton Abbott Development Co Ltd v Stockman Brothers*⁷⁶ it was held that a property development company was entitled to recover the diminution in the value of houses that it had sold in their defective state.
- 154 In *Cory v Wingate Investments*⁷⁷ the Court of Appeal said:
- 155 There may be cases where the carrying out of remedial work to bring the building into line with the specification may be so entirely out of line with what the cost of those works would be and the nature of those works having regard to the nature of the building as a whole that the Court would gladly accept some other basis for the assessment of damages.
- 156 In *George Fischer Holdings Limited v Multi Design Consultants Limited*⁷⁸ His Honour Judge Hicks QC awarded damages, not only for the cost of remedial work, but also for loss of value on the ground that:
- 157 In point of principle a plaintiff who carries out the best and most economical repair which can be devised to defective property that is left at the end with an asset for which purchasers in the market are not prepared to pay as much as one which never had the defects has plainly lost both the money expended on the repair work and the residual difference in value.
- 158 In *Ruxley Electronics and Construction Ltd v Forsyth* Mr Forsyth engaged the plaintiff to construct a swimming pool with a maximum depth of 7'6". The pool built extended to only 6'9" in depth. At first instance, Mr Forsyth was awarded £2,500 for loss of amenity. He appealed, giving an undertaking that he would use any damages recovered to reinstate the pool, and the Court of Appeal awarded the full cost of reinstatement of £21,560. The House of Lords held that this was out of all proportion to the loss actually suffered by Mr Forsyth and that the damages to be awarded should be limited to the difference in the value of the actual pool compared with the requested pool. Lord Mustill stated:

the test of reasonableness plays a central part in determining the basis of recovery, and will indeed be decisive in a case such as the present when the cost of reinstatement would be wholly disproportionate to the non-monetary loss suffered by the employer. But it would be equally unreasonable to deny all recovery for such a loss. The amount may be small, and since it cannot be qualified directly there may be room for difference of opinion about what it

⁷⁶ (1931) 47 T.L.R. 616

⁷⁷ (1980) 17 BLR 104 CA

⁷⁸ (1998) 61 Con LR 85

should be. But in several fields the judges are well accustomed to putting figures to intangibles, and I see no reason why the imprecision of the exercise should be a barrier, if that is what fairness demands.

- 159 In *R J Young v Thames Properties Ltd* (1999) the plaintiff contracted to resurface a car park for a lump sum price. The work was not in accordance with the contract, but was a perfectly usable car park. Comparing what had been done against what had been contracted for, the judge at first instance found that there had been substantial performance. The Court of Appeal held that this was the appropriate objective test. As to the measure of damages, the Court of Appeal held that it was correct in principle to deduct an amount reflecting the difference in value of the car park as built and as contracted for, rather than a sum based on putting right the car park to contract specification.
- 160 In summary, the principles in *Ruxley* are as follows:
- The question of 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.
 - If it is so disproportionate, you may be entitled to recover on the basis of diminution of value, if there has been any.
 - 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.
- 161 *Earl Freeman v Mohammed Niroomand*⁷⁹ was considered shortly after *Ruxley*. The issue again was over the measure of damages and the availability of diminution of value or reinstatement. Freeman had entered into a contract to carry out building work to Niroomand's home and the work included building a porch, in accordance with the drawings prepared by the architect. Freeman built the porch but did not build it according to the architect's drawings and specifications.
- 162 As in *Ruxley* there was no diminution of value to the house from this breach of contract and to rebuild the porch to conform was unreasonably costly. It is noteworthy that the claimant in this case indicated he did not want rectification work undertaken on the existing structure as this would decrease its size. The judge awarded nominal damages to represent the amount saved by the builder. This was upheld in the CA. See too *Farley v Skinner* [2001] UK HL 49. Where, regarding aircraft noise and the impact on a house purchase, there is no diminution in value caused, the House of Lords still awarded general damages for distress and inconvenience. So it seems if there is no diminution and an immaterial contractor's breach and either the building owner decides not to carry out rectification works or the costs are disproportionate to the nature of the loss, then the building owner in principle should be able to bring a claim for loss of amenity to compensate for not getting exactly what he contracted for. That does not amount to many beans!

⁷⁹ (1996) 52 Con. L.R. 116 CA

- 163 The more recent case of *McLaren Murdoch & Hamilton Limited v The Abercromby Motor Group Limited*⁸⁰ examined the appropriate measure of damages where an architect's design was negligent.
- 164 In this case McLaren acted as architects for Abercromby in relation to a proposal to construct a four-car dealership. A dispute arose between the parties as to whether McLaren was negligent in its design of the heating system. It seems that McLaren had specified an electrical underfloor heating system which worked on a night-storage principle. Electrical elements ran through the floor of the buildings and were heated at night using cheap electricity. The resultant heat was stored in the concrete of the floor and released during the following day. The system failed to provide satisfactory heating and an expert witness gave unchallenged evidence to the effect that such a system had a number of fundamental problems. It was said that the buildings, which were largely of lightweight construction, including large amounts of glazing, were entirely unsuited to such a heating system. Further problems arose in relation to the workshop areas. During the day there was a considerable turnover of cars which had to be moved in and out of the workshops through a number of large doors. When the doors were opened heat was lost. The installed heating system provided no means of rapidly restoring heat to the building after the doors were opened. Similar problems occurred in the showroom areas in which the heating, particularly during winter, had proved inadequate.
- 165 In consequence the Abercromby Group had replaced the entirety of the heating systems. McLaren contended that the underfloor heating could have been augmented rather than the whole system replaced. Relying upon the decision in Ruxley McLaren argued that the cost of reinstatement would not be the appropriate measure of damages if the expenditure was out of all proportion to the benefit obtained. McLaren accepted that it was at fault as to the design but disputed that Abercromby had shown any loss or damage. McLaren contended that replacement was not reasonable and therefore Abercromby could not recover its costs for this.
- 166 Lord Drummond Young of the Scottish Court of Sessions noted the evidence of Abercromby that underfloor heating was not suitable for the workshop area. Accordingly it needed to be replaced as it was a liability, which made it difficult to install foundations for equipment. Based on this evidence the Court held that replacement of the underfloor system in the workshops was reasonable.
- 167 The second area that the Court had to consider was the underfloor heating in the showroom areas. Again, the Court held that the cost of replacement of the underfloor system was reasonable and noted that the architect had not demonstrated that replacement was unreasonable.
- 168 This case provides confirmation of the principles of recovery set out in the earlier cases. A party will be entitled to rectification if reasonable in the circumstances. When the costs involve the complete replacement of a system, that will not necessarily be unreasonable and it will be dependent on the facts of each individual case.

⁸⁰ (2003) 100 Con. L.R. 63

- 169 This all received a recent airing in *Ian McGlinn v Waltham Contractors Ltd.*⁸¹ The dispute arose out of the construction of a large luxury mansion in Jersey, part of a major long-running piece of litigation. The building owner, Mr McGlinn, engaged architects, building contractors, engineers and quantity surveyors to construct the mansion. However, he was not happy with the results, and the mansion remained vacant for three years. A further team of architects inspected the property, identified various defects and recommended that it should be demolished. The mansion was demolished, but never rebuilt.
- 170 Mr McGlinn commenced his action against his architects, building contractors, engineers and quantity surveyors on the basis of negligence and breach of contract. His primary claim was for over £3m representing the actual cost of demolition and the estimated cost of rebuilding the house. Alternatively, he claimed nearly £2.5m representing the estimated costs of repairing individual defects. The decision is enlightening. The claim against succeeded against all the parties except the quantity surveyors. However, the judge rejected Mr McGlinn's primary case on measure of recovery, holding that he was entitled to recover only the cost of repairing each individual defect for which a defendant was liable.
- 171 The causation and quantum issues are worth sharing. The judge identified the following principles:
- (i) Traditionally, compensation for damage to property has been based on diminution in value;
 - (ii) More recently, in claims against contractors or professionals, the appropriate measure of loss is usually the cost of reinstatement/repair;
 - (iii) As we have seen, a claimant who carries out repairs must act reasonably;
 - (iv) If there are two equally efficacious alternative remedial schemes, and one is cheaper than the other, then prima facie the claimant is obliged to put in hand the cheaper of the two schemes.
- 172 However, if the claimant has carried out a remedial scheme on the basis of professional advice, he will generally be entitled to the cost of the work carried out in accordance with that advice. If however that advice was negligent, this will break the causal chain (*The Great Ormond Street* principle addressed below).
- 173 The decision: the judge rejected the argument that, because the house had been demolished (and so would in fact never be repaired), it would be inappropriate to assess damages by reference to the cost of repair. This was "unquestionably" a case in which the correct measure was the reinstatement measure.
- 174 The judge also rejected Mr McGlinn's argument that the decision to demolish the property had been taken on expert advice, entitling him to recover the full costs of demolition and reinstatement under the Great Ormond Street principle. The judge distinguished Great Ormond Street for a variety of reasons, including Mr McGlinn's clear desire to demolish rather than repair, the aesthetic rather than structural

⁸¹ [2007] BLR 188 TCC

nature of the defects, the existence of a large number of claims against multiple defendants, and the fact that the mansion had not been rebuilt and there was no sign it would be in the near future.

175 Even if *Great Ormond Street* could not be distinguished, it was not authority for the wide proposition that reliance upon any expert of itself proved that the claimant had acted reasonably, thereby entitling the claimant to recover the costs of reinstatement: "although reliance on an expert will always be a highly significant factor in any assessment of loss and damage, it will not on its own be enough, in every case, to prove that the claimant has acted reasonably." In this case, the claim for the costs of demolition and rebuilding were "contrary to practicalities and common sense".⁸²

176 As paragraph 834 of the judgment states:

"This problem is an issue of causation/foreseeability which the Claimant's dogged reliance on what it is said can be derived from Great Ormond Street simply does not address. In fact, I consider that Judge Newey had this sort of point very much in mind. In his judgment he said: "However reasonably the plaintiff acts, he can only recover in respect of loss actually caused by the defendant. If, therefore, part of a plaintiff's claim does not arise out of the defendant's wrong doing, but is due to some independent cause, the plaintiff cannot recover in respect of that part; Liesbosch Dredger v Edison [1933] AC 449 and Compania Financiera Soleada SA v Hamoor Tanker Corp Inc, The Borag [1981] 1 All ER 856 CA."

177 In other words, translating that principle to the present case, Mr McGlenn may have acted reasonably in deciding to demolish the house, because of the advice he received as to the cumulative effect of all the defects, but he could not recover the costs of demolition as damages against a particular defendant in circumstances where only a handful of those defects are the responsibility of that defendant.

178 The judgment is a useful exposition of the relevant causation and quantum principles to be applied in cases involving damage to property, and it clearly illustrates the limitations of the *Great Ormond Street* principle. Over and over again in the judgment, His Honour Judge Peter Coulson QC refers to common sense and reasonableness,⁸³ emphasising that the critical test in the assessment of damages is

⁸² There have been a number of cases since *Great Ormond Street* in which the relevance of the claimant's reliance on expert advice has been considered in the context of an assessment of damages. In *Skandia Property UK Ltd v Thames Water Utilities Ltd* [1999] BLR 338 the claimant was advised by experts that a tanking system, called a "Sika" system, was the only practical way to protect a building that had been damaged by a flood caused by the defendant. However, at the time that such advice was given and acted upon, the experts had been unaware of pressure grouting treatment which had been performed some time prior to the flood, and which meant that the flood had not in fact damaged the integrity of the building. The Sika system that was put in as part of the remedial scheme was therefore shown to be unnecessary. In assessing the damages due from the defendant, the judge refused the claim for the cost of the Sika system, despite the absence of any suggestion of negligence on the part of the experts. The Court of Appeal upheld his view.

⁸³ The recent authorities make plain that the court must award damages which are reasonable and objectively fair as between the claimants and the defendants (see paragraph 32 of the judgment of Clarke LJ in *Southampton Container Terminals Ltd v Schiffahrts-gesellschaft "Hansa Australia" MGH & Co (The MV "Maersk Colombo")* (2001) 2 Lloyd's Rep 275. Clarke LJ said: "As I read the authorities, where reinstatement is the appropriate basis for the assessment of damages, it must be both reasonable to reinstate and the amount awarded must be objectively fair as between the claimants and the defendants."

that of reasonableness. This sits in unity with the thread in the earlier case of *Birse Construction Ltd v Eastern Telegraph Co Ltd*, below.

Redress for technical breaches in defects cases

- 179 As may have been gleaned since HHJ Newey QC in *The Board of Governors of the Hospitals for Sick Children and Another v McLaughlin & Harvey plc and others ("Great Ormond Street")* [1987]⁸⁴ aka *Great Ormond Street* it has become something of a construction lawyer's rule of thumb that if a claimant wants to recover the cost of rectification it is more likely to do so if remedial works have been carried out upon a professional consultant's advice.
- 180 But it seems from the judgment of HH Judge Humphrey Lloyd in *Birse Construction Ltd v Eastern Telegraph Co Ltd* that, like the most recent *McGlenn v Waltham Contractors*, even if a claimant has carried out remedial works on a consultant's advice, it will not recover the cost of rectification of defects, even if "*numerous and seemingly reprehensible*", if the same have not caused damage or are not likely to cause damage in the future. In other words, where there was no real need for remedial work.
- 181 *Eastern Telegraph* looked at the level of compensation that should be paid for defects which the employer did not propose to remedy.
- 182 This case concerned a residential training college built by Birse for Eastern Telegraph. Eastern Telegraph complained that there were various defects in the college but as it had decided to sell the property it did not undertake any rectification work. Eastern Telegraph found a buyer for the property, and negotiated a price which did not appear to be discounted on account of any of the defects.
- 183 Eastern Telegraph claimed from Birse damages on the basis that it had not received what it had contracted for and it also noted that the defects made the college unsightly and affected the comfort. Birse contended that Eastern Telegraph had incurred no loss as the price it had negotiated for the sale of the property was not affected by the defects.
- 184 On the issue of the measure of damages for defects the Court held that although the normal principle was to award the reinstatement cost for defective works, these costs had to be reasonable on the facts of the case. Where the costs were out of proportion to the real loss incurred then it was necessary to use a different measure for assessing the costs to be awarded.
- 185 The Court held that a reasonable owner would have put right the defects that affected the general appearance. Eastern Telegraph had not done so and it was clear it had no intention of carrying out works of this nature. On that basis it was held that a claim for damages based on unremedied defects (which were not going to be remedied) was unreasonable.

⁸⁴ 19 Con LR 25

186 The loss as a result of the unremedied defects was minimal and it would be out of proportion to award reinstatement costs, therefore the Court awarded a nominal sum of £2 for breach of contract in respect of the unremedied damages. The Court noted that the Eastern Telegraph was entitled to recover costs already incurred in remedying defects of workmanship that amounted to breaches of contract by Birse.

187 Interestingly, Judge Lloyd also commented on the occurrence of minor defects in construction contracts generally. A reasonable interpretation of his judgment is that:

- The existence of a number of minor defects should be regarded as “normal” for a building contract:

I ought to record although the trial necessarily focussed on the quality of workmanship, the documents and evidence did not establish that the overall performance of Birse was below average, although, as will appear, there were too many defects. [Para. 4]

- In a purely commercial contract, if a defect is not visible or deleterious, the claimant should just accept it:

A building owner is not entitled to expect perfection and has to accept work that does not comply with the contract where such work does not materially detract from the intended use and occupation of the building. An owner has to expect and accept unwanted “presents” from the builder, provided that they are not visible and not deleterious. What the eye does not see the heart should not grieve ...[Para. 130]

188 Judge Lloyd described non-material defects as “unwanted presents”. Two factors weighed heavily with Judge Lloyd in concluding that ET was not entitled to recover substantial damages. The first was ET’s failure to remedy the defects and the second was the probability that the college would be sold by ET.

189 Yet perhaps we have judicial notice that building in the UK is not what it once was, but then again the old cases show things were never really different.

Date of assessment of damages

190 The cost of repair was once thought to be assessed as at the date of the breach. It is now clear that this so-called rule is merely a mitigation point, so that if repairs are undertaken at the first time they can reasonably be undertaken then the claimant is entitled to damages assessed at that time, even if that time does not arise until trial. The court will consider either the actual cost of remedial work, or its estimated cost if the work has not been done at the time the damages are assessed.

191 The original strict rule was that damages should be assessed at the date of loss, or at the date the cause of action accrued. The effect of this rule was that the value of any benefit lost, or the cost of any restorative work, would be assessed as at the date of loss, even if it had changed in value since.

192 However, this is not an absolute rule - *Johnson v Agnew* [1977] 1 WLR 1262. Even before this case the courts had been very willing to regard the rule as flexible.

- 193 There is also in any event the potentially conflicting rule that the court should take into account in assessment all relevant events between the date of accrual and the date of assessment. The effective date is therefore a matter of the court's discretion. It is actually highly unlikely that damages will be valued literally at the date of accrual. It is hardly reasonable to expect a claimant to rectify damage instantly in every case.
- 194 The appropriate date needs to be considered in conjunction with the claimant's duty to mitigate.⁸⁵ It would, however, be contrary to the mitigation principle to value damages at a date earlier than that on which the claimant could reasonably have been expected to rectify the damage. The *position if* principle basically requires damages to be valued at the date of assessment except insofar as any alteration in value between the date of accrual and the date of assessment has been caused by extraneous factors or the claimant's failure to mitigate.
- 195 In the case of repairs to property, damages should be assessed as at the date on which it is reasonable to expect the claimant to undertake the repairs: *Dodd Properties (Kent) Ltd v Canterbury City Council* [1980] 1 All ER 928. This may be as late as the date of trial or assessment. Indeed, the court may have regard to the fact that a claimant may be unable to carry out the repairs until such time as he has established liability and is awarded damages, in which case date of trial will necessarily be the appropriate date: *Perry v Sidney Phillips & Son* [1982].⁸⁶
- 196 We shall now look at design liability issues concerned with the latest ECC and JCT families.

Design responsibility under JCT 05

Background

- 197 Professor Peter Hibberd, Secretary General of the JCT, commented two years ago:
- "The existing [JCT] suite was overdue a revamp - these documents have grown up over 75 years so it was inevitable that there would be some inconsistencies and redundant text."*
- 198 Change was due on a number of counts. The standard JCT forms were originally drafted by committees comprised of representatives from various potentially conflicting interests, including contractors, insurers and employers. The resultant forms issued by the JCT were, necessarily, compromise contracts which, in many respects, could be said to favour the contractor rather than the employer. As a result, it is not uncommon to find such standard forms being amended by schedules of amendments running to, in some cases, as many pages as the original contracts.
- 199 It is a fact of life here in the UK that whilst many construction projects look to the Joint Contract Tribunal (JCT) forms of contract as a basis for their main contract

⁸⁵ It is not a positive duty but merely a notional duty, which may be raised as reducing the damages recoverable. The point does not arise unless raised by the defendant, and the burden of proof is on the defendant who alleges failure to mitigate.

⁸⁶ 3 All ER 705

documentation, very few will use these standard forms in pure unamended form. Most construction lawyers advising parties involved in such projects will have extensive schedules of amendments which they will urge their client to adopt if their interests are to be adequately contractually protected. This applies not only to the employer/client on such projects but also to other parties who may have interests in the project, including funders, purchasers and tenants.

200 The need to incorporate such amendments leads to protracted negotiations and increased legal costs. It has also resulted in entrenched positions being taken by contractors who resist such amendments on the basis that, as the standard JCT forms were initially drafted and agreed by parties supposedly representing all potential parties to a major project, they should readily be acceptable to all parties and should not require amendment. The JCT has at long last realised that their previous suite of standard forms (last issued in 1998) is not acceptable to any party and has gone a long way to address these issues, incorporate most amendments that might be required by other competing interests, and arrived at forms of contract that should readily be acceptable by all parties. The 60 million dollar question is whether they achieve this purpose. All the indications are they shall. We already have Amendment 1 addressing CDM Regulations 07 and assignment, third-party rights and collateral warranties. Take- up amongst my firm's clients have ramped up this last year.

201 In short we now have:

- Minor Works Building Contract (MW 2005)
- Minor Works Building Contract with Contractor's Design (MWD 2005)
- Intermediate Building Contract (IC 2005)
- Intermediate Building Contract with Contractor's Design (ICD 2005)
- Construction Management (CM)
- Management Build Contract (MC)
- Prime Cost Building Contract (PCC)
- Repair and Maintenance Contract (RM)
- Framework Agreement (FA)
- Framework Agreement (FA/N)
- Design and Build Contract (DB 2005)⁸⁷ and
- Constructing Excellence Contract (CE)⁸⁸

⁸⁷ Design and Build Contract (DB)

Appropriate:

- where detailed contract provisions are necessary and Employer's Requirements have been prepared and provided to the Contractor;
- where the Contractor is not only to carry out and complete the works, but also to complete the design; and
- where the Employer employs an agent (who may be an external consultant or employee) to administer the conditions.

Can be used:

- where the works are to be carried out in sections;
- by both private and local authority employer

⁸⁸ Which interestingly provides for the Supplier to carry out design with alternative options for design liability. The contract comes in two parts: the Constructing Excellence Contract ("Contract") and the Project Team Agreement ("Agreement"). Although the format of these contracts is in keeping with JCT's 2005 suite of contracts, the terminology and principles are clearly derived from Be Collaborative. The Contract is a bipartite contract between a "Purchaser" and "Supplier". The descriptions reflect the fact that the contract could be between any two parties in the project with a purchaser and supplier relationship, for example, a developer and contractor or a contractor and subcontractor. The second part of Constructing Excellence, the Agreement, is optional. This is a multi-party agreement entered into between the project team members who have entered into the bipartite Contracts and works to supplement these, dealing with the function and role of the participants. The Agreement is not intended to override the individual Contracts.

- 202 First the basics. Not only have the 2005 forms been redrafted using less legalistic language and sorted into a more user-friendly format, important developments have also been incorporated, triggered by changes in both the industry and the law. The headings, sub-headings, typefaces and so on have been standardised across all the contracts to make them clearer and easier to use.
- 203 There are no longer any separate supplements. Fluctuations, Sectional Completion and Contractors' Design Portion have all been incorporated within the contract if appropriate.
- 204 The documents listed below are JCT's current contract family from their website.⁸⁹

2005 Contract Family	New documentation
Standard Building Contract	Standard Building Contract Guide
Intermediate Building Contract	Intermediate Building Contract with Contractor's Design
	Intermediate Sub-Contract - Agreement
	Intermediate Sub-Contract - Conditions
	Intermediate Sub-Contract with Sub-contractor's Design - Agreement
	Intermediate Sub-Contract with Sub-contractor's Design - Conditions
	Intermediate Building Sub-Contract Guide
Minor Works Building Contract	Minor Works Building Contract with Contractor's Design
Design and Build Contract⁹⁰	Design and Build Contract Guide
	Design and Build Sub-Contract Agreement
	Design and Build Sub-Contract Conditions
	Design and Build Sub-Contract Guide
New Contract Family for 2005	
Framework Agreement	Framework Agreement Non-binding
	Framework Agreement
	Framework Agreement Guide

⁸⁹ www.jctcontracts.com/JCT/searchresult.

⁹⁰ The JCT also publishes a Design and Build Sub-Contract (2005) "DBSub/C". The JCT DB Sub/C (2005) also requires compliance with the Main Contract (section 2.5), but subcontractors' design is also subject to the ordinary professional standards (section 2.13).

NEW Contract Family for 2006	
JCT - Constructing Excellence Contract	JCT Constructing Excellence Contract
	JCT Constructing Excellence Contract Project Team Agreement

- 205 The reformatting of the 2005 JCT contracts has seen two particularly important additions to the suite pertinent to design, namely the Minor Works Building Contract with Contractor's Design (MWD 2005) and Intermediate Works Building Contract with Contractor's Design (ICD 2005), specifically fashioned for the smaller end of the market where the contractor provides some design input subject to supervision from the architect or contract administrator.
- 206 Neither contract is intended to be a substitute for a design and build contract. Indeed, both seem to be suitable in circumstances where the parties intend that the contractor is to be responsible for a "discrete element" of the design.
- 207 To emphasise this point, both contracts oblige the employer (i) to supply detailed requirements for the intended "Contractor's Design Portion", (ii) to examine the Contractor's Proposals in respect of such requirements and (iii) to satisfy himself that those proposals are adequate (see Seventh Recital).
- 208 While it is open to an employer to delete or amend such provisions in an attempt to impose a more onerous design responsibility upon a contractor than was intended by JCT draftsmen. This may well be an area where disputes occur.
- 209 More interestingly from the lawyer's point of view, the contractor's design obligation differs between the two contracts. Under ICD 2005, the standard of care in relation to the design of the particular portion is that of a professional designer. Conversely, under MWD 2005 the standard is that of reasonable skill, care and diligence. The question which will be left for the courts to decide is whether the reasonable skill and care to be expected of a contractor carrying out design work is different to the skill and care to be expected of a professional designer.
- 210 The Standard Form of Building Contract (SBC) and Design and Build Contract are two of the most popular within the construction industry (use of the word "popular" is used in terms of number of projects they are used on) and any revision to these Contracts obviously has considerable importance.
- 211 The industry is now beginning to take up the new 2005 Editions. On the whole both contractors and employers will benefit. Some of the benefits which I will address in more detail in this paper include the following:
- The format of the Contract has been radically changed, both in terms of layout, arrangement of clauses and the various Supplementary Schedules which replace the old Appendix.
 - As stated above, there are no longer any separately published Supplements to the Standard Building Contract. The Contractor's Design Supplement and Sectional

Completion Supplement are now integrated into the Contract which is far better than the ungainly sewing and stitching done on previous editions.

- Optional clauses no longer form part of the Contract Conditions but are contained in Schedules.
- The existence of third parties who have an interest in enforcing the terms of the Contract is now acknowledged. There is a choice of either obtaining warranties for these parties or, alternatively, utilising the Contracts (Rights of Third Parties) Act 1999.
- There is no separately published local authority versions of the Standard Building Contract. The provisions relating to local authorities are incorporated within the Contract Conditions.
- Headings and, insofar as possible, the text of the Contract Conditions are consistent across the Standard Building Contract and the Design and Build Contract.

212 Dealing with those changes in more detail:

Formatting of the Contract

213 All the Contracts across the entire JCT range now have a common layout, a “section-headed format” with the following common section headings.

Section 1 - Definitions and Interpretations

Section 2 - Carrying out the Works

Section 3 - Control of the Works

Section 4 - Payment

Section 5 - Variations

Section 6 - Injury and Damage Insurance

Section 7 - Assignment, Third Party Rights and Collateral Warranties

Section 8 - Termination

Section 9 - Settlement of Disputes

214 This should make it easier to locate particular provisions in each Contract.

215 This re-formatting of the Contracts into Sections, each concerning an aspect of Construction Works, has meant a complete rearrangement of the Conditions, particularly in the Standard Building Contract and the Design and Build Contract. The clauses are now more logically grouped so that it is not necessary to flick backwards and forwards within the Contract in order to locate and identify each of the party's obligations.

Separate supplements dispensed with

- 216 Anyone familiar with the JCT 1998 Private With Quantities Form will be aware of the Contractor's Design Portion Supplement, Sectional Completion Supplement and the composite Contractor's Design Portion and Sectional Completion Supplement, which needed to be incorporated into the Standard Form if the employer wished to take advantage of them. Each supplement came in a "With Quantities" and "Without Quantities" version. It was necessary to check to make sure that the supplement that you intended to use incorporated the same amendments as the Main Contract. You were then faced with the rather laborious task of having to read the Contract in tandem with the chosen supplement, cross-referencing the numerous amendments to the recitals, articles and clauses.
- 217 The new JCT 2005 Standard Building Contract has done away with this task by incorporation of the Contractor's Design Portion and Sectional Completion into the text of the Standard Building Contract. This is achieved by simply retaining or deleting the optional recitals, e.g. if the Works are to have Sectional Completion, then Recital 6 should be retained, but otherwise it should be deleted. If there is an element of the Works which is to be designed by the Contractor, then Recitals 7 to 10 should be retained, but otherwise they should be deleted.
- 218 The 1998 Editions of JCT contain the entire information specific to the Project in Appendix 1 towards the end of the Contract. This Appendix is now called the "Contract Particulars" and has been moved so that it is to be found immediately after the Articles of Agreement up front. The Contract Particulars contain an entry for Recital 6, Sectional Completion and space for a description of the Sections of the Works. Equally, if elements of the Works are to be designed by the Contractor, then there are entries for Recitals 7 to 9 for description or identification of the documents containing the Employer's Requirements, Contractor's Proposals and CDP analysis.
- 219 The Contract therefore follows a logical progression, with the Articles of Agreement giving a summary of what the parties require. The Contract Particulars provide information specific to the project and the Terms and Conditions are generic. By simple amendments to the Recitals and insertion of information in the Contract Particulars, the provisions relating to Sectional Completion or Contractor's Design in the text of the Terms and Conditions are activated. There is no need to make any amendment to the Terms and Conditions themselves.

Use of Schedules

- 220 As stated earlier, in the 2005 Editions many of the optional clauses such as the insurance provisions, fluctuations and the clause 13A Quotation, are now incorporated in separate Schedules at the back of the Contract. This is to be contrasted with the 1998 Editions which incorporate the optional clauses into the main text of the Terms and Conditions. The 2005 Edition allows the use of the Contract with or without the whole or part of a Schedule. It is fairly simple to utilise the Schedules and incorporate them into the Contract by brief cross-referencing between the Contract Particulars and the Terms and Conditions.

221 For example, the insurance options at Schedule 3 (in respect of which a decision will always need to be made):

In the Contract Particulars, against the entry for Clause 6.7 in Schedule 3, the three options are listed and simple deletion of those which are no longer required is all that is necessary.

222 In the Terms and Conditions, clause 6.7 states:

Insurance Options A, B and C are set out in Schedule 3. The Insurance Option which applies to this Contract is that as stated in the Contract Particulars.

223 The JCT 2005 Editions, like the 1998 Editions, contain a Schedule which sets out in full the forms of bond which may be required from each party. The JCT 2005 Editions, however, also contain, at Schedule 5, the third-party rights for purchasers, tenants and funders in relation to the Building Contract. Incorporation of these rights is by way of the Contract Particulars and operation of the Contracts (Rights of Third Parties) Act 1999. The parties have a choice of either utilising the Contracts (Rights of Third Parties) Act 1999 or, more traditionally, at Part 2 of Schedule 5 the British Property Federation warranties which are identified as being required for Purchasers, Tenants and Funders.

224 The construction industry hitherto has been slow to accept the Contracts (Rights of Third Parties) Act 1999. This resistance to change is no doubt in part because the banks and institutions which fund commercial developments are, in many respects, even more conservative than contractors. The inclusion in the JCT of an option to use the Contracts (Rights of Third Parties) Act 1999 is a huge step forward in acceptance of that Act, and should result in a reduced reliance upon collateral warranties.

Omissions from the Contracts

225 Having addressed the inclusions in the Standard Form of Contract, the other change that users will note is that large elements of the Contract have simply gone. This is particularly so in relation to statutory procedural material, the Construction Industry Scheme, the VAT Supplemental Provisions and CDM Regulations which have all been removed and are now in the Articles. The extensive VAT provisions have been reduced to the following single clause:

4.6.1 The Contract Sum is exclusive of VAT and in relation to any payment to the Contractor under this Contract; the Employer shall in addition pay the amount of any Value Added Tax properly chargeable in respect of it.

226 Similarly, the Construction Industry Scheme provision consists of:

4.7 Where it is stated in the Contract Particulars that the Employer is a 'contractor' for the purposes of the CIS or if at any time up to the payment of the Final Certificate the Employer becomes such a "contractor", the obligation of the Employer to make any payment under this Contract is subject to the provisions of the CIS.

thus avoiding the 14 sub-clauses that are contained in the 1998 Editions of these Contracts. Nominated Sub-Contractors no longer exist and the separate clauses relating to Performance Specified Work have also been dispensed with.

- 227 The result is that both Contracts, and particularly the Standard Building Contract, are much clearer, concise and easier to read, with the Terms and Conditions being arranged in logical section-headed formats. The language of the Contract is less convoluted, there is less cross-referencing to clauses within different sections of the Contract, substantially reducing the number of times you have to plough backwards and forwards to get the full meaning of particular provisions.
- 228 While the formatted appearance of the Contract has substantially changed, the content of the Terms and Conditions has been subject to less change. There have, however, been a number of amendments which will be briefly considered below.

Contractor's design obligations

- 229 Under the Standard Building Contract when the Contractor's Design Portion Supplement is used, the Contractor's design obligations are set out in clauses 2.2 and 2.19. The design obligations in the Design and Build Contract are set out in clauses 2.1 and 2.17.
- 230 By including a clause within SBC 2005, DB 2005, IDP 2005 and MWD 2005 which expressly provides that a Contractor is not responsible for checking the adequacy of any design contained within the Employer's Requirements, the obligations of the Contractor in relation to design are limited to the design it produces and there is express exclusion of any liability for the Employer's design. In the Standard Building Contract the exclusion is contained in clause 2.13.2 and in the Design and Build Contract it is contained in clause 2.11. The wording is the same in both Contracts (apart from clause numbers):

Subject to Clause [2.17] [2.15], the Contractor shall not be responsible for the contents of the Employer's Requirements or for verifying the adequacy of any design contained in them.

- 231 This express exclusion of liability for the contents of the Employer's Requirements arises as a result of the case of *The Co-operative Insurance Society Limited v Henry Boot Scotland Limited* (July 2002) (2002 CLJ Volume 19, page 109).
- 232 The case concerned the JCT 1980 Standard Form of Building Contract Private with Quantities, including Contractor's Design Portion Supplement. The Contractor under the Contract was, amongst other things, responsible for the design of the earthworks support to sub-basement excavations, bored bearing piles to foundations and contiguous bored piled walls, together with temporary propping to the contiguous bored piled walls and temporary supports and propping to the walls of adjoining properties.
- 233 The Contract contained a number of additional conditions, namely:

Clause 2.11 required the Contractor to ensure the proper integration and compatibility of the various elements of the Works, one with another, and with the remainder of the Works; and

Clause 2.12 made the Contractor responsible for the co-ordination of the design to the extent that such design was stated in the Contract Documents to be the responsibility of the Contractor.

- 234 In addition, there were unusual features in the way in which the Contract Documents had been prepared. There should have been separate documents for the Employer's Requirements, Contractor's Proposals and Contract Sum Analysis in respect of the Contractor's Design Portion, but none was actually used, although there was reference to both the Employer's Requirements and the Contractor's Design Portion in sections of the Bills of Quantity.
- 235 His Honour Judge Seymour QC, who heard the case, decided that the Contractor was responsible for satisfying itself, using reasonable skill and care, that assumptions upon which the pre-existing design had been proposed and which the Contractor was responsible for developing to the point where it was capable of being constructed were appropriate and in doing so this involved checking the Employer's Design was not defective or negligent.
- 236 It is arguable that *Henry Boot Scotland* like *Mowlem plc (formerly John Mowlem) v Newton Street Limited* does not provide any guidance on the interpretation of the JCT 1998 Standard Form of Building Contract and Contractor's Design Contract because of the bespoke amendments that were incorporated, coupled with the manner in which the Contract was set up without any Employer's Requirements or Contractor's Proposals. The case has, however, been treated as providing guidance on the interpretation of the Standard Forms and, as a result, the accepted interpretation is that the 1998 Contracts require the Contractor to check the Employer's Requirements.
- 237 So under the 2005 Editions, the Contractor is expressly excluded from any responsibility for the adequacy of the design in the Employer's Requirements by virtue of clause 2.13.2 in the Standard Building Contract and clause 2.11 in the Design and Build Contract.
- 238 Whether the JCT likes it or not, when using the 1998 and previous versions of the Standard Form of Contract with Contractor's Design employers frequently insert a provision expressly requiring the Contractor to check the Employer's Requirements and this practice is unlikely to change.
- 239 However, this is not to say that a contractor has no responsibility whatsoever in relation to the design:
- under SBC 2005, DB 2005 and ICD 2005 (though not MWD 2005), a contractor is obliged to notify any inadequacies in the Employer's Requirements upon becoming aware of the same, and then to seek reimbursement for related costs by way of a variation;

- Further (save under MWD 2005), it is incumbent on the contractor to ensure that the Employer's Design complies with any statutory requirements (except in the case of DB 2005 where the Employer's Requirements state that they are so compliant).

240 In relation to the contractor's primary obligations this remains "to carry out and complete the works" (clause 2.1 in both JCT 98 and SBC 05). Yet at first blush it seems that the JCT have dropped the qualifying statement: "provided that where and to the extent that approval of the quality of materials or of the standard of workmanship is a matter for the opinion of the architect, such quality and standards shall be to the reasonable satisfaction of the architect", but this phrase has been amalgamated with the text from what was clause 8.1.2, to form a combined clause 2.3.1 which states:

Where and to the extent that the quality of materials or goods or the standard of workmanship are a matter for the opinion of the Architect, such quality and standards shall be to his reasonable satisfaction. To the extent that the quality of materials and goods or standards of workmanship are neither described nor stated to be a matter for such opinion or satisfaction they shall in the case of the Contractor's Designed Portion be of a standard appropriate to it and shall in any other case be a standard appropriate to the Works.

241 The difference is that the old wording required the contractor to achieve a standard "appropriate to the Works", which applied only to workmanship in the absence of a specified standard. The result is the new wording applies also to materials and goods. It should therefore no longer be necessary to argue implied terms where the specification is incomplete or ambiguous for a material or good in question.

The Design & Build - DB 05

242 In the JCT DB 05 the Contractors' obligations are set out in clause 2. The key parts of clause 2 are 2.1.1: "*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 and for that purpose shall complete the design for the Works including the selection of any specifications for the kinds and standards of the materials, goods and workmanship to be used in the construction of the Works so far as not described or stated in the Employer's Requirements or Contractor's Proposals, and shall give all notices required by the Statutory Requirements.*" And there is a design warranty as follows: 2.7. Clause 2.17.1:

Insofar as its design of the Works is comprised in the Contractor's Proposals and in what the Contractor is to complete in accordance with the Employer's Requirements and these Conditions (including any further design required to be carried out by the Contractor as a result of a Change), the Contractor shall in respect of any inadequacy in such design have the like liability to the Employer, whether under statute or otherwise, as would an architect or, as the case may be, other appropriate professional designer holding himself out as competent to take on work for such design who, acting independently

under a separate contract with the Employer, has supplied such design for or in connection with works to be carried out and completed by a building contractor who is not the supplier of the design.

- 243 Clauses 2.10-2.15 are significant because they deal with discrepancies within and between the Employer's Requirements, the Contractor's Proposals and Statutory Requirements in far greater clarity than any previous version of this contract.⁹¹
- 244 Whilst JCTDB05 may seem benign in terms of the duty of care we all know, the typical major building contract document contains far more than the standard contract conditions and apart from amendments there may be copious Employer's Requirements, Design Parameters, Contractor's Proposals, Programmes, Contract Sum Analyses, express warranties, vague statements of intent and much more in the numbered documents ready to bite the contractor in the neck. All of these could have a bearing on the scope of the design obligations and the extent of the professional duties generally.

Design review procedure

- 245 Another significant alteration, connected with design, is the introduction of a Design Review Procedure; this is to be found in the Standard Building Contract when the Contractor's Design Portion has been selected and also in the Design and Build Contract and its JCT derivatives, which require the operation of the Procedure. The Procedure is based upon that which is already contained in the JCT Major Project Form.
- 246 The Contractor is required to submit two copies of all design documents, e.g. drawings and detailed specifications it prepares, to the Employer or the Architect (as the case may be) for review.
- 247 Within 14 days of receipt of that documentation, or if a date for submission of documents has been previously agreed within 14 days of that date (whichever is the later) the Employer/Architect must have reviewed the documentation and returned it to the Contractor marked with A, B or C. If the Employer/Architect does not respond within the 14 days allowed, the documentation is regarded as having been marked with an A.
- 248 The significance of A, B and C is as follows:-
- A means the Contractor can carry out the Works in strict accordance with that document;
 - B means that the Contractor may carry out the Works in accordance with that document, provided that comments are incorporated into it and an amended copy of it is promptly submitted to the Employer/Architect;

⁹¹ Clause 2.11 is likely to be helpful. "*Subject to clause 2.15, the Contractor shall not be responsible for the contents of the Employer's Requirements or for verifying the adequacy of any design contained within them.*" Notwithstanding, should discrepancies in the Employer's Requirements be discovered during the Contract then the contractor has positive obligation to address them (clauses 2.14/2.15).

- C means that the Contractor is required to take account of the comments on it and either promptly re-submit it to the Employer/Architect in an amended form for comments in accordance with the Design Submission Procedure, or notify the Employer/Architect that it considers the design is in accordance with the Contract and that compliance with the comments would give rise to a Change. The Contractor is required to make that submission within seven days of receipt of the drawings with comments on them, failing which it is deemed that the comments do not give rise to a Change.
- 249 The whole procedure is designed to operate fairly quickly and consequently any design document that is not returned marked up by the Employer/Architect within 14 days of its submission is deemed to be marked A. To ensure that the Contractor complies with the Design Submission Procedure, the Contractor is not entitled to be paid in respect of any works for which Design Documents should have been submitted, but in respect of which there are no Design Documents with the status A or B.
- 250 The Contractor may therefore object to the comments on a B status, and if it does must explain why their incorporation would give rise to a variation. Clause 8.3 of the Schedule states helpfully that no comments or any action by the contract administrator (CA) will “diminish the Contractor’s obligation to ensure that the Design Document or the CDP works are in accordance with the contract”.
- 251 These provisions give the CA the means to monitor the developing design, and to make comments where there is concern as to the achievement of the Employer’s Requirements, but otherwise no power to influence the development of the design without issuing a variation to the requirements that is the theory at least. Note that under JCT 05 the design documents to be provided are those “reasonably necessary to explain or amplify the Contractor’s Proposals” (clause 2.9.2.1) and that they are to be provided “as and when necessary from time to time or as otherwise stated in the Contract Documents”.
- 252 It remains to be seen whether an employer may seek to cross the line between making comments on designs which are for the purposes of gaining confidence that the Contractor is having proper regard to the contractual requirements and making comments which, in effect, attempt to vary the design requirements via the back door. To protect against this, a Contractor is required to raise any challenges to comments which appear to introduce a variation within seven days of the comment being made. Absent this, such comments will be deemed not to constitute a variation.
- 253 It is relatively easy to anticipate that on large projects the amount of documents passing from the Contractor to the Employer/Architect requiring review and comment will be extensive. Employers when using the Design and Build Contract commonly novate the majority of their professional design team across to the Contractor at the stage of entering into the Contract. Thereafter they retain only the Quantity Surveyor and Employer’s Agent. This practice may have to be reconsidered if they are to operate the Design Review Procedure for submissions

effectively and unless they are to retain consultants, which defeats the object somewhat.

- 254 The JCT 2005 Contracts now contain express provisions whereby the Contractor can be required to take out professional indemnity insurance. For example the professional indemnity insurance clause is clause 6.11 in both the Design and Build Contract and Standard Building Contract. It is activated by an entry in the Contract Particulars specifying the amount of cover required. If no amount of cover is entered in the Contract Particulars, it is assumed that professional indemnity insurance is not required. The Contract Particulars need to be carefully completed as not only is there a requirement that the level of cover needs to be inserted, but it is also necessary to identify whether it has any restriction on the level of cover in respect of pollution and contamination claims and the period for which the insurance policy is required to be maintained. Normally this would be either 6 or 12 years from Practical Completion; the default period is 6 years.
- 255 Both the Design and Build Contract and the Standard Building Contract state that the Contractor retains copyright in his Design Documents, which is quite an interesting concept, particularly as the Contractor's Design Documents will be based on a design prepared by the Employer, copies of which will have been provided to the Contractor under a licence to use them for the purposes of constructing the Project. While there may be design details which have been prepared by the Contractor which are original and consequently it is entitled to claim copyright on those documents, it is difficult to see how the Contractor can claim copyright in relation to all the Design Documents, as but for the licence granted by the Employer, it would itself be in breach of copyright.
- 256 The Contractor, having claimed copyright in all the Design Documents, generously grants a licence permitting the Employer to reuse the content of those documents for any purpose in connection with the Works, subject to the Contractor having been paid all sums due to it under the Contract.

JCT Major Projects Form

- 257 The first JCT publication following the HHJ Seymour QC decision in *Henry Boot Scotland* was the Major Project Form. First published in 2003 (the 2005 edition is a reformatted version of the Major Project Form 2003), it sought to turn the clock back and maintain the status quo as it was believed to have existed, prior to Judge Seymour's decision. This was achieved through wording that expressly addressed the status of the design in the Employer's Requirements by stating, "The contractor shall not be responsible for the contents of the requirements or the adequacy of the design contained within the requirements" (clause 5.1). As we have seen, this is picked up by JCT 05.
- 258 The 2005 edition of the Design and Build Contract (DB05) states: "Subject to clause 2.15, the contractor shall not be responsible for the contents of the Employer's Requirements or for verifying the accuracy of them" (clause 2.11). Similar wording applies in relation to any CDP within the Standard Form of Building Contract (SBC05). Whilst this wording may seem clear and effective, the same was believed of

the previous provisions and it will only be when a dispute comes before the courts that the effectiveness, or otherwise, of the new wording will be established.

- 259 The JCT warns in its Guidance Notes that the new Major Projects Form (MPF)⁹² of contract is not for everyone. The notes say it is designed for use by experienced Employers who require limited procedural provisions in the contract form, have their own sophisticated in-house procedures and protocols, and have Contractors with whom they work regularly. Also, because the Contractor assumes more risks and responsibilities under the new contract than under traditional JCT standard forms, the JCT is particularly concerned that work be carried out only by experienced, knowledgeable Contractors who undertake proper risk analysis and put in place appropriate risk management systems. It is understood that the JCT specifically decided to call the new contract the "Major Project" form to try and dissuade inexperienced Employers and Contractors from adopting it for their projects. It remains to be seen whether the new form is used as intended.
- 260 The Contractor may undertake the task of design through its own resources or it can utilise subcontractors and/or consultants. The Contractor is required to satisfy Clause 11 which provides the Requirements as to the Standards of design, materials and workmanship. The Contractor warrants under clause 11.2 that the design: "Shall comply with Statutory Requirements; Satisfy any performance criteria within the Requirements; Will use materials selected in accordance with good practice in the selection of construction materials."
- 261 The level of design liability is set out in clause 11.3. It provides that the Contractor will exercise in the performance of his obligations the skill and care of a professional designer appropriately qualified, competent and experienced. The Contractor does not warrant that his designs will be suitable for any particular purpose.
- 262 It is understood the JCT considers that a "fitness for purpose" provision should not be a standard provision, primarily because of the problem with the availability of PI insurance. It does, however, recognise that with some projects the contracting organisation may be prepared to carry such a responsibility and the MPF outlines when a "fitness for purpose" obligation may be considered appropriate. Paragraph 27 of the JCT Guide states as follows:
- 263 A 'fit for purpose' obligation may be considered where:
- The Employer's purpose can be clearly defined and is for a well-established type of use.
 - The construction process utilises tried and tested methods of construction and the Project is of a non-complex nature, limited to technical knowledge known or capable of being known by a competent designer at the time of design.
 - The Contractor has addressed the availability of Professional Indemnity insurance with both his broker and the Employer. It would also be appropriate

⁹² Now the Major Project Construction Contract

for the Parties to discuss the possibility of Project based insurance at the same time.

- The Contractor has been given control of the design process, but “fit for purpose” obligations are not appropriate where the Employer is considering novating the original design contracts as these will almost always contain a reasonable skill and care type obligation.

264 It also provides an alternative sentence to be substituted for the final sentence of clause 11.3.

Risks, responsibilities and contractor freedom

265 Under the MPF form, the Contractor assumes significantly more risks and responsibilities than under traditional JCT standard forms. The quid pro quo is that the Contractor has potentially greater freedom in how it delivers the Project. The intention of the new Contract is that the Employer, having defined its Requirements, should permit the Contractor to undertake the Project without the Contractor being constrained by or reliant upon the Employer for anything more than access to the Site, review of Design Documents and payment. In particular, there is no requirement or expectation that the Employer will issue any further information to the Contractor because all design and production information beyond that contained in the Employer's Requirements is to be produced by the Contractor.

Design responsibilities under the MPF

266 Depending upon the manner in which the Employer's Requirements are formulated, the Guidance Notes suggest, the Contractor could find itself responsible for virtually the entire design of the Project or, possibly, just the design or the design detailing of specific elements of the Project. The allocation of design responsibility is something that will need to be clearly spelt out in the tender documents.

267 The contract expressly states that the Contractor "shall not be responsible for the contents of the Requirements or the adequacy of the design contained within the Requirements", but it is not immediately apparent how, or on what basis, the Contractor can seek recompense for additional time and/or costs incurred in overcoming any shortcomings in concept or detailed designs contained within the Employer's Requirements. Perhaps it is intended that when the Employer's general expectations and requirements are at variance with specific concept or detailed designs contained within the Requirements, the Contractor will fall back on provisions dealing with discrepancies in the Requirements, which effectively entitle the Contractor to choose between discrepant provisions at the Employer's cost. But, what if an element of the design for which the Contractor is wholly responsible is dependent upon an element of design provided in the Requirements how then does one deal with inadequacies in the Employer's design? No firm answers are settled on that one as yet.

268 With three notable exceptions, the Contractor's design warranty is generally one of skill and care, albeit "the skill and care to be expected of a professional designer

appropriately qualified and competent in the discipline to which such design relates and experienced in carrying out work of a similar scope, nature and size to the Project”.

- 269 In fact, the Contract expressly states that the Contractor does not warrant that the Project, when constructed in accordance with the Contractor's designs, will be suitable for any particular purpose.
- 270 The three enhancements to the skill and care warranty are compliance with:
- Statutory Requirements;
 - any performance specification contained within the Requirements; and
 - the guidance on selection of materials contained in the publication *Good Practice in the Selection of Construction Materials* prepared by Ove Arup & Partners.
- 271 Very importantly, subject to the Contractor not being responsible for the contents of the Employer's Requirements or the adequacy of designs contained in them, the Contractor gives an otherwise strict, unqualified assurance that the design of the Project will comply with the Statutory Requirements, performance specifications and stipulated guidance on the selection of materials.
- 272 While the new design provisions generally are in line with frequent amendments to the older form of contract, it remains to be seen how professional/design indemnity insurers will react to these new standard form proposals.

Design Submission Procedure (DSP)

- 273 The DSP started with the MPF. The Contract recognises that not all of the Contractor's designs necessarily will be contained within the Contractor's Proposals. The Contract contains a first for the JCT, a procedure for the preparation, submission and review of Design Documents after contracting.
- 274 Thus we see the Employer has the right to review all designs prepared by the Contractor and can comment upon any that it considers not in accordance with the Contract. The Employer is obliged only to pay for Contractor-designed works executed in accordance with designs that have the status "no comment" or only limited comments.
- 275 It must be said that JCT have made a credible effort at achieving the results that they intended: a contract for major projects which will largely be acceptable to all parties, but the nirvana of a contract which requires no further amendment or negotiation and does away completely with the need for collateral warranties is still some way off.

Summary

- 276 The new Editions of the Standard Building Contract and the Design and Build Contract are undoubtedly still complex, but this is hardly surprising as the building projects they are expected to be used on are complex in themselves, as are the legal relationships formed by the parties when carrying them out. The new Editions, however, are more clearly drafted and more easily comprehensible. Redundant provisions have been dispensed with and most of the provisions that relate to a particular aspect of the administration of the project are now logically grouped together in the same section.
- 277 There are still one or two minor irritations, for example the provisions setting out the effect of the Final Certificate are not contained in Section 4, which deals with the issue of the Final Certificate, but instead are contained in Section 1 relating to Definitions and Interpretations. Minor irritations aside, the Contracts have introduced some useful new provisions, such as the Design Submission Procedure and the ability to invoke the Contracts (Rights of Third Parties) Act 1999, unlike JCT 1998 which excluded it.
- 278 Whilst concentrating on the new Standard Building Contract and the Design Build Contract, the JCT have of course updated, or are in the process of updating, the entire family of JCT Contracts and Sub-Contracts. Certainly the use of a common format and language in the Sub-Contracts must be an improvement on the Industry Standard Sub-Contracts, namely DOM/1 and DOM/2.
- 279 On the whole the revised Editions of the JCT Contracts are an improvement and while that will not prevent Employers amending them, the revised issue should require fewer amendments and should be easier to use than the current 1998 Editions.

The Engineering and Construction Contract (ECC), 3rd Edition

- 280 Remaining on the topic of standard form contracts and the issue of design, two years ago in July 2005, the Institution of Civil Engineers (ICE) launched the third edition of the New Engineering Contract family of contracts (NEC3) in response to feedback from the construction industry. In addition to a revised main contract (ECC3), the NEC3 suite of contracts contains a “new” Framework Contract and a new NEC Term Service Contract.
- 281 Like its earlier versions it is different from other more traditional UK building/engineering forms of contract. There are three reasons for this (i) its “plain English” present tense style alien to most lawyers; (ii) its proactive management approach from cradle to grave the major preoccupation being processes and actions, carefully flowcharted and (iii) its modular structure with “core clauses”, six main pricing options (A-F) and 22 secondary options to deal with everything from bonds to excluded rights.
- 282 Under the ECC any or all of the design responsibility, and ultimately the liability for that design, can be apportioned to the Contractor through the Works Information; there is no separate contract document to cover design and construct contracts.

Contrast this with the ICE Conditions of Contract, the liability of the Contractor is subject to the important qualification that it is generally not liable for the design or specification of the permanent works or of temporary works designed by the engineer. Therefore a division of responsibility is maintained such that the Contractor undertakes to construct according to the engineer's design.

- 283 Section 2 of the ECC 2005 sets out the Contractor's main responsibilities and clause 21 sets out the contractor's design responsibilities. The Works Information should state the parts of the work that the Contractor is required to design (Clause 21.1). The design should interface with those parts of the works designed by the Employer.
- 284 Although the basic layout and structure of the NEC contracts is unchanged, there have been some revisions to risk positions. The principal amendments to the main contract include: extending the grounds for claiming an extension of time and compensation to include unauthorised works and force majeure.; the introduction of an extensive optional clause which includes individual limits for design liability and consequential loss and an aggregate overall limit on liability. The ICE's stated hope is that the new features and amendments will enable the contract to be used even more effectively across a wider range of projects.
- 285 One of the areas in which this contract continues to attract attention is its approach to design liability of the contractor and it is worthy of attention since there are no changes on this from NEC 2 to address design liability re standards of materials, goods and workmanship. There is no clear statement in NEC 3 of whether the contractor's liability for his design is based on fitness for purpose or reasonable skill and care. Nothing is stated expressly. All the key relevant provisions consistently refer just to the contractor's obligation to ensure that his design complies with the Works Information, which may not address the issue or be ambiguous. Whilst this issue is often dealt with by special express amendments, it is surprising that it has been left untouched in this new edition.
- 286 One of the key collaborative features of the NEC has been the requirement that the contractor and project manager give each other early warning of matters which could affect the cost, timescale or quality of the project. The contractor is encouraged to comply because failure to do so may reduce the payment to him for a related compensation event in that the project manager may assess the compensation event "as if" an early warning had been given. Obvious matters requiring early warning would include design problems, discovery of unexpected ground conditions and bad weather. NEC 3 develops the use of the early warning system beyond its role in NEC 2. It does this by introducing the concepts of a "risk register" and "risk reduction meetings". The risk register is a live document. Initially, it will contain risks identified in the contract data. However, any matters which are the subject of early warnings are added to the register and then discussed in risk reduction meetings, in order to solve the problems in question. This procedure allocates the actions needed for efficient management of specific risks and assists in identifying the time and cost consequences of risk events.
- 287 The risk register (clause 16) is new to ECC, in line with the objective of "encouraging good project management". NEC 3 is one of a comparatively small body of contracts

which incorporate this principle into the contract itself and this is one of the strong selling points for the proactive attributes of this contract family on the part of the project manager and contractor. The intention is that, as part of the Contract Data at commencement of the process, the parties should set up a risk register by noting those risks that they identify as having the potential to increase the total cost. The *Guidance Notes* give examples of the matters it might contain, such as design problems, unexpected ground conditions, issues with supply of plant or materials. The dynamic is such that it is intended the register is not static. The project manager must enter in it any matter the contractor raises an early warning upon that may increase total cost, and the project manager and contractor may each add or modify the register with the outcome of noted risks discussed at risk reduction meetings previously known as "early warning meetings". If a decision made at a risk reduction meeting requires a change to the Works Information, then that must be instructed by the project manager and may constitute a compensation event.

- 288 It will soon be appreciated that this could potentially disturb the risk allocation already agreed between the parties. For example, if the parties have agreed the design and build contractor should choose the form of air conditioning system, e.g. thermal pile, chilled beam, but say the contractor encounters a problem in the ground with his thermal piles, this should be brought up at a risk reduction meeting. If the decision is then made to opt for say traditional chillers and a cooling tower etc., then the Works Information will need to be altered, which will trigger the compensation event regime despite the initial risk allocation arrangements under the contract. Given that project risks need to be allocated (as discussed above), in a transparent way it is most important that risk allocation is changed other than default mechanisms such as this, which cannot have been the ICE's intention.
- 289 So like JCT, the ECC has reached maturation in its third edition. We have yet to see whether its use will spread meaningfully to the private sector on one-off projects, notwithstanding that NEC has been endorsed and recommended by the Office of Government Commerce, along with its use on public sector projects in the UK,⁹³ with the Olympics being flagged for it. There is no doubt the big project management companies are touting it for sound risk management issues but its materially different set-up from other established contract forms still represents considerable inertia to those clients who are unfamiliar with partnering philosophy and without established supply change arrangements and nervous of its so far court untested machinery.

⁹³ Channel Tunnel Rail Link, T5, NHS Procure 21 etc.

Conclusion

290 Keep track of the dynamics. Design liability will remain a fundamental topic for our courts/ADR and its users for as long as man sits on this planet. The more sophisticated our building structures and the systems we imbed in and upon them the greater the risk for us all that something will go wrong. Yet what strikes me most is that in the 21st century we are still learning how to keep the wet out!

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i I am grateful to the RICS and Davis Langdon for producing the tables below.

General procurement methods 2004

Chart 1 Distribution of methods of procurement – by number of contracts

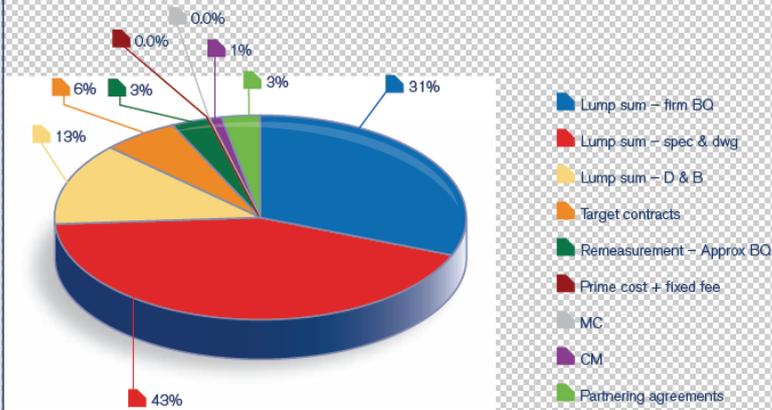
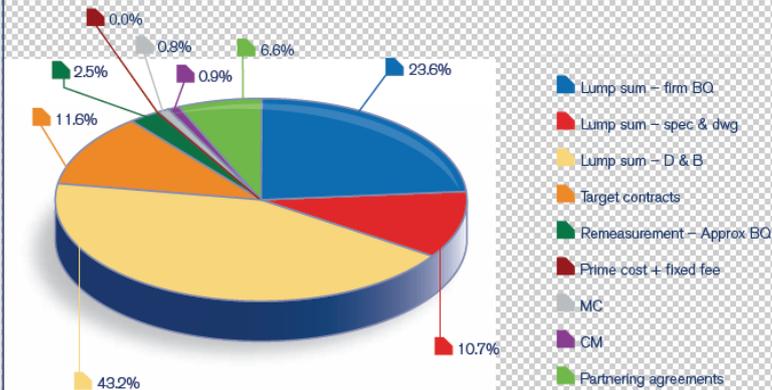


Chart 2 Distribution of methods of procurement – by value of contracts



See: www.rics.org/NR/rdonlyres/E741B97E-084A-4C72-9759-92867705F50B/0/36084_ContratcsinUseVersion3Final.pdf