

THE TEACHING OF CONSTRUCTION LAW AND THE PRACTICE OF CONSTRUCTION LAW: NEVER THE TWAIN SHALL MEET?

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I INTRODUCTION

The overwhelming majority of major law firms in the United States and Australia¹ promote construction law as one of their areas of expertise.² However, the overwhelming majority of law schools in these two jurisdictions do not offer construction law as a subject in their JD or LLB programs. How can it be that an area of law, that is so widely practised, is not widely taught?

The dearth of construction law courses in law schools is in stark contrast with the plethora of construction law offerings in the engineering, architecture and building faculties.³ It appears that universities are producing construction professionals who have an understanding of the law regulating their industry, but not lawyers who have the knowledge to advise and represent clients on construction-related issues.

This article briefly analyses the meaning and scope of the term ‘construction law’, before examining the extent to which it forms part of law school offerings in the United States and Australia. This is followed by a critical analysis of the purpose of teaching construction law and a consideration of the knowledge and skills that students should have at the end of their study of construction law. The article concludes with a suggested model construction law syllabus for law students, designed to produce graduates who have the foundation on which to build an expertise in construction law.

II WHAT IS CONSTRUCTION LAW?

Construction law is an umbrella term that covers all the legal principles relating to the construction of structures on land. It is an extremely broad expression, encompassing the law relating to demolition as well as to building. Construction law is just as relevant to the building of a small house as it is to the construction of a power station or the excavation of a tunnel. The one common feature of the disparate aspects of construction is that the end product is ultimately fixed to or becomes part of the land so that owner of the land is the owner of the structure by operation of law.

Construction law is multifaceted in terms of the legal principles that are covered by the umbrella term. At different times it has been described as a ‘separate breed of animal’⁴ and a:

primordial soup in the “melting pot” of the law — a thick broth consisting of centuries-old legal theories fortified by statutory law and seasoned by contextual legal innovations reflecting the broad factual ‘realities’ of the modern construction process.⁵

Although a significant component of any construction law course is contract law, construction law is much more than this and involves the contextual understanding of a variety of legal principles, including torts, equity and statutory/regulatory laws. For this reason, it is preferable that any student wishing to enrol in a construction law subject should first have successfully completed courses in contract law and torts.

Construction is extremely diverse, as is construction law, and many lawyers have sub-specialities within construction law. For example, ‘front end’ construction lawyers are involved at the *commencement* of the project, with tasks such as advising on the most appropriate procurement method and the drafting of the multitude of contracts involved in any construction project, while ‘back end’ construction lawyers specialise in the resolution of disputes outstanding at the *completion* of the project. A construction law course for law students therefore needs to cover both the front end and back end of construction law, as well as aspects of construction law that span both sub-specialities; for example, insurance and the regulatory environment (licensing laws, safety regulation, permits and building codes).

III CONSTRUCTION LAW IN LAW SCHOOLS

The United States has 233 law schools of which 26 offer an elective on construction law.⁶ This translates to a paltry 11 per cent. Australia is not much better; there are 32 law schools, of which four offer a subject on construction law.⁷ This amounts to just over 12 per cent. Practising construction lawyers have observed this state of affairs, with one attorney noting that:

[f]or too long, US law schools have under-emphasised the law relating to design and construction of the built environment. The American Association of Law Schools should be encouraged to identify construction law as speciality area.⁸

These comments were made over a decade ago, yet the situation remains unchanged, with construction law still a largely unrecognised discipline within law schools.

To the author’s knowledge, there has been no attempt to comprehensively map the offering of construction law in law schools around the world. This article is a modest beginning, documenting the known instances of construction law being offered as an elective subject in Bachelor of Laws (LLB) and Juris Doctor (JD) programs in the United States and Australia. However, it does not purport to analyse the precise availability, content, or format of construction law courses in American and Australian law schools. Such in-depth research is warranted, but is beyond the scope of this article.

While there has been no attempt to record the offering of construction law electives in law degrees around the world, there has been an effort to report the extent to which construction law forms part of *masters* programs.⁹ For example, the University of Melbourne in Australia¹⁰ and King’s College London in the UK¹¹ both offer specialist masters degrees in construction law. These two programs are open to lawyers, architects, engineers and contractors; that is, anyone working in the construction industry who has an

undergraduate degree with sufficiently high grades to satisfy the entrance requirements. These specialist construction law programs do not lead to a qualification that entitles a graduate to be admitted as an attorney or solicitor/barrister. Rather, these master degrees provide graduates with in-depth specialist knowledge of construction law. A specialist masters degree in construction law serves a valuable purpose in providing those working in construction law or the construction industry with a more extensive understanding and expertise about this area of law. However, they do not redress the problem of law schools failing to offer their undergraduate students an introductory construction law subject as part of their legal education.

Overwhelmingly, the construction law offerings that are available within law schools are taught by practising lawyers, rather than full-time academic staff. This can impact negatively on the effectiveness of the course. Although lawyers who practise in this area of law will know a lot about the subject matter, they may have given little thought to how to teach the subject effectively. Knowing how to teach is as important to the success of a subject as knowing the substantive content. This lesson was learnt the hard way by an attorney teaching construction law at the University of South Carolina Law School, when he received a student evaluation that simply said, '[t]ake a course on how to teach!'.¹² It is clear that the success of a construction law course depends on having it taught by someone who not only understands construction law, but also understands the pedagogical principles that underpin effective teaching. It is therefore necessary for law schools to 'nurture academic careers built upon a construction law focus.'¹³

Another downside of using adjuncts to teach a subject such as construction law is that it is likely to impact negatively on scholarly inputs to the field, as practising lawyers are significantly less likely to publish and, when they do so, tend not to publish in general law reviews.¹⁴ Mainstreaming construction law within law schools requires the involvement of tenured faculty who can teach, research and publish in this discipline.

IV EXISTING SCHOLARSHIP ON TEACHING CONSTRUCTION LAW TO LAW STUDENTS

While there is a plethora of literature about teaching construction law to non-law students,¹⁵ there is a dearth of literature about teaching construction law to law students. This is no doubt reflective of the fact that construction law has, for some time, been a firm feature of most architecture, building and engineering courses, whereas it is still a rarity in university law programs.

Philip Bruner recently undertook a scholarly analysis of the historical emergence of construction law.¹⁶ The article traces the origin of standard form contracts, the enactment of legislation regulating payments on a construction project, the development of construction law principles by the courts and the advancement of specialised construction dispute resolution procedures. In a short section devoted to construction law scholarship, Bruner notes that legal scholars pay little attention to the law relating to construction, and suggests that this may be due to legal scholars being

unwilling to acquire practical understanding of the complexities of construction process and

hence have been unable to develop significant capability to contribute to the development of law undergirding the construction industry.¹⁷

The result is that 'American academicians continue to contribute little to the teaching and development of construction law.'¹⁸ It is time for legal scholars to play a role in the advancement of construction law through education and research in this important discipline.

The teaching of construction law was put under the spotlight in the summer of 2009, when *Construction Lawyer*, the journal of the American Bar Association (ABA) Forum on the Construction Industry,¹⁹ devoted one of its quarterly issues to the topic. Two attorneys who practise in the area of construction law, and who also teach construction law courses, contributed short articles. Allen Overcash, an Adjunct Professor of Construction Law at the University of Nebraska Law School, argued the case for teaching construction law to law students on two grounds: first, it is important the legal professions have an understanding of the construction industry and the laws that govern it. Overcash noted that construction is the largest single industry in the United States, employing more than 5 per cent of the country's workforce. Second, the peculiar legal problems faced by the construction industry are not covered elsewhere in the curriculum.²⁰ While a student studying contract law may encounter some construction cases in their casebook, construction contracts are invariably not a focus of the subject. Furthermore, construction disputes are rarely decided by simply interpreting the express terms of a written contract, and require 'an intensive investigation of the facts of the project and the relationship of the numerous parties who are attempting to perform the project'.²¹ Thus, Overcash concludes, a graduate who attempts to advise a client with a construction problem, based only on the contract interpretation skills they acquired through studying contract law, will struggle to provide effective advice. It is for this reason that 'new attorneys are not popular with potential construction clients'.²² This fact adds weight to the case for an increase in construction law offerings within law schools.

Overcash further justifies the teaching of construction law within law schools on the basis of the transferable skills law students will learn. Most construction contracts involve the parties entering into long-term relationships to complete complex projects. Such contracts are markedly different from the single transaction contracts that dominate deals relating to the sale of goods or real estate transactions. The relational contract theory that students learn when studying construction law is likely to benefit them in other areas of legal practice that involve long-term relationships such as franchises, leases and business partnerships.

The second article on the teaching of construction law was contributed by Lawrence Melton, another practising construction attorney who also teaches construction law. He asserted that law students must understand construction terminology if they are to understand construction law and he describes how, in his first class, he distributes a list of 236 construction terms which he describes as the 'construction lawyer's toolbox'.²³ Melton outlines how he teaches construction law using the problem-based learning model. Providing real world construction problems for students to work through provides a unique opportunity to teach analytical processes that will help law students develop into

competent practitioners.²⁴

Melton concludes by advocating that construction law 'should be taught in law schools because it is a reality-based and dynamic subject'²⁵ and is an ideal tool for exposing students to the application of complex legal concepts to complex practical problems.

It is regrettable that the only recent scholarship on the teaching of construction law has come from practitioners rather than academics, and appears in journals whose target audience is construction lawyers, rather than legal scholars. In many ways, Overcash and Melton are 'preaching to the choir' in advocating the teaching of construction law to a readership of construction lawyers. This article is an attempt to engage legal scholars with the idea that construction law is a legitimate and worthwhile area of legal scholarship, and a subject that can enrich and invigorate a law school curriculum. If construction law is to become a mainstream part of legal education, those already working in the field must reach out to those who are not a part of the construction law speciality.

V WHAT KNOWLEDGE AND SKILLS DO CONSTRUCTION LAWYERS NEED?

Like many complex areas of human endeavour, the construction process has spawned its own unique customs, practices and technical vocabulary.²⁶ As a result, a lawyer wanting to practise in the area needs to understand how the industry operates, be familiar with the language used, and have an appreciation of the issues that frequently arise (and how they can best be avoided, managed or resolved). Construction clients expect their lawyers to have at least a rudimentary understanding of technical aspects of construction and industry practices and processes, so that they do not have to spend time educating them about the basics. A construction law subject should therefore ensure that law students learn and understand how the construction industry operates, who the players are, and the roles they play in the construction process.

In addition, it is obviously vital that construction lawyers understand and can apply the law set out in court decisions. These include terms that courts have implied into construction contracts, based on principles of torts, equity and industry practice.²⁷ The decision in many a building case has turned on whether the court has found there to be an implied term in the parties' construction contract, eg, that materials incorporated into the structure will be of merchantable quality,²⁸ or that the design of the building will be fit for purpose.²⁹ Thus, students should learn about key construction cases that have influenced the development of construction law.

Not only do construction lawyers need to understand the construction industry and its processes, and be familiar with construction law jurisprudence, but they also need to know and be able to advise clients about the legislation regulating construction. In most jurisdictions, there are statutes and codes that govern safety on construction sites, licensing of persons involved in construction, payment obligations and insurance requirements. All of these laws affect the way parties to a construction project conduct themselves and manage their relationships. It is therefore essential that a construction lawyer be able to advise clients about the impact of the regulatory framework on their project.

The construction industry ‘enjoys’ a reputation of being highly adversarial and litigious. A construction project is often viewed as no more than a precursor to a major piece of litigation. Indeed, there are instances where a construction dispute has lasted longer than the construction project itself.³⁰ For these reasons, there is a focus on developing techniques and practices that reduce the risk of a dispute arising during a construction project, and resolving any disputes that do arise in an efficient and timely manner. Students studying construction law should engage with these state-of-the-art dispute minimisation processes which are generally reflected in bespoke contract clauses.

Any construction law course offered within a university law school should be designed to cover the above four components; that is, to teach students about:

- i) the way the construction industry operates;
- ii) construction law jurisprudence;
- iii) the regulatory framework governing construction; and
- iv) techniques to avoid, manage and resolve construction disputes.

VI A MODEL CONSTRUCTION LAW SYLLABUS?

In late 2009, the ABA Construction Forum requested that any of their members already involved in teaching construction law, or with an interest in teaching construction law, identify themselves. Eighty-three members made contact, several with ideas about how to increase the teaching of construction law in law schools. One respondent stated:

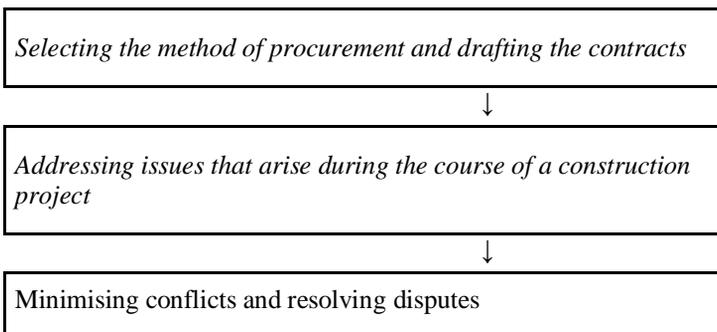
The propagation of construction law courses and ... the teaching of construction law in general would benefit from the following ... Develop a model syllabus for proposing courses to schools that have not offered construction law before. ... Develop detailed lesson plans, both to persuade law schools that this is a cognizable area for teaching, and to help new teachers.³¹

The curriculum outlined below is intended to respond to these suggestions. It is informed by the author’s experience working as a construction lawyer in the United States (Los Angeles), England (London) and Australia (Melbourne) for approximately 20 years, before moving into academia where, for the past decade, she has been teaching construction law within university law schools as well as in architecture, engineering and building faculties. During this period, it has become clear to the author that the construction law that law students need to learn is markedly different from the construction law that architecture, engineering and building students need to learn. The latter need to develop skills that will help them recognise when a legal issue has arisen on a project, how to respond to that issue, how to protect their interests, and how to best assist their legal team to deal with problems when they do arise.³² This can be contrasted with law students, who need to have an in-depth understanding of the intricacies of construction law so as to be able to represent and advise clients regarding construction law issues.

The difference between teaching construction law to law students and teaching construction law to non-law students has been likened to the medical training that paramedics receive compared with the training that medical students receive. Paramedics need enough medical knowledge to be able to deliver first aid until a patient can be transferred to a doctor; builders, architects and engineers need to know just enough legal

‘first aid’ to effectively manage a crisis until a construction lawyer is engaged. However, construction lawyers, like doctors, need to have the expertise to fix the problem.³³

Just as doctors need to understand the workings of the human body they are committed to healing, so too do construction lawyers need to understand the workings of the industry they are committed to serving. Thus, a component of a construction law syllabus for law students needs to include learning about the way the construction industry operates, including the relationships between different sectors, the types of contracts used, the sort of problems that regularly arise, and the means of avoiding, managing and resolving those problems. With this in mind, the following syllabus has been developed, which has been used successfully by the author in an Australian university law school for the past six years. The ordering of the various topics within the course is designed to broadly follow the order of a construction project, namely:



This structure provides students with a logical progression of learning that reflects the reality of construction projects and construction law.

The practise of construction law is highly practical, and the teaching of construction law should be similarly practical. Thus, the incorporation of case studies and contractual-based scenarios is recommended.³⁴ In this way, students learn about construction law while at the same time developing an understanding of construction processes and terminology. The author has found that, when it comes to teaching construction law, the use of problem-based learning³⁵ is beneficial because it provides students with plenty of opportunities to think critically, analyse real world problems, and come up with their own solutions. To achieve this, the author conducts three-hour classes, with the first two hours consisting of a lecture and the third hour devoted to hands-on, practical problem-solving. This is done by way of small group exercises. This method of teaching gives students an opportunity to apply what they have learnt, and gives lecturers a chance to see whether the students have correctly understood the key concepts. This is consistent with the recommendation of Christudason, who advocates breaking classes into groups of four to five students to discuss problems and present their findings to the rest of the class.³⁶ This teaching method promotes deep rather than surface learning,³⁷ and leads to students being motivated to *understand* the material, not just to rote learn and reproduce in an exam the content of a lecture. The problem-based teaching approach that

is used to deliver the following construction law syllabus is designed to encourage students to actively participate with the content, rather than being passive recipients of knowledge. An example of one of the problems given to students to work through in small groups is set out in topic seven below, ‘Variations’.

It is intended that two to three hours be dedicated to each of the following topics.³⁸

<i>Topic</i>	<i>Content</i>
<i>1. Introduction to construction law and the construction industry</i>	<i>Overview of course; overview of industry; nature of construction law; procurement methods; standard form contracts; tendering; and introduction to risk allocation in construction contracts.</i>
<i>2. Traditional construction contracts</i>	<i>Fixed price/lump sum contracts; design & construct; schedule of rates; and subcontracts.</i>
<i>3. Alternative construction contracts</i>	<i>Alternative construction contracts/relationship contracting — alliancing and partnering.</i>
<i>4. Time issues</i>	<i>Practical completion requirements and extension of time clauses.</i>
<i>5. Payment issues</i>	<i>Contract provisions relating to payment and statutory regimes including mechanic’s liens and stop notices (USA) and security of payment (Australia).</i>
<i>6. Quality of work issues</i>	<i>Defective work discovered during construction and/or after completion.</i>
<i>7. Variations/changes</i>	<i>Changes to the scope of works.</i>
	<i>continued ...</i>

<i>Topic</i>	<i>Content</i>
<i>8. Construction site visit</i>	<i>Students are given a tour of a construction site and briefed about the works by the project team.</i>
<i>9. Latent conditions</i>	<i>Risk allocation for unforeseen ground conditions and contractual requirements upon discovery of a latent condition.</i>
<i>10. Insurance</i>	<i>Analysis of different types of insurance required during construction and issues relating to claims on insurance policies.</i>
<i>11. Security for performance</i>	<i>Bank guarantees and bonds provided by contractors to owners.</i>
<i>12. Dispute avoidance processes</i>	<i>Dispute review boards; dispute adjudication boards; and dispute resolution advisors.</i>
<i>13. Dispute resolution</i>	<i>Different forms of ADR used for the resolution of construction disputes and issues relating to construction arbitration and litigation.</i>
<i>14. Revision and exam preparation</i>	<i>How it all fits together.</i>

Each of these topics is considered in some depth in the following sections A to N.

A Introduction to Construction Law and the Construction Industry

Construction is a very important industry that contributes 4.1 per cent of GDP in the United States³⁹ and 6.1 per cent of GDP in Australia.⁴⁰ It is also a very diverse industry, with projects ranging from small residential jobs, such as the renovation of a kitchen or the building of a pergola, to engineering feats such as the ‘Big Dig’ (which included the construction of a multitude of tunnels, bridges and highways designed to overcome Boston’s traffic congestion problems) and the Channel Tunnel (which connects England and France). The learning objective of the first class is that students develop an understanding of the variety of projects, people and skills that make up the construction industry. This is important, because to understand the construction industry, students need to understand not only the different types of construction, but also the roles and responsibilities of the people who work on construction projects.

There are an array of different procurement methods utilised by the construction industry, ranging from traditional approaches, where the owner engages a professional to do the design, and then gets contractors to bid on that design, to alternative methods where the parties engage in a form of relationship contracting where there might be no fixed price and no fixed date for completion. The aim of this class is that students learn about the pros and cons of these varied procurement methods, and the legal ramifications of the different arrangements, so that they are in a position to advise future clients about project delivery methods.

All construction work involves risk, and a fundamental principle that underpins all aspects of construction law is risk identification, allocation and management. For example, which party should carry the risk for occurrences such as unforeseen ground conditions, adverse weather and workplace injuries? One of the learning objectives of this class is that students develop an understanding of the Abrahamson model of risk allocation, which says that a party should carry a risk if:

- the risk is within the party's control;
- the party can transfer the risk; for example, through insurance;
- the preponderant economic benefit of controlling the risk lies with the party in question;
- to place the risk upon the party in question is in the interests of efficiency, including planning, incentive and innovation efficiency; and
- if the risk eventuates, the loss falls on that party in the first instance.⁴¹

If students understand the principles of risk allocation, it makes it easier for them to understand that a construction contract is a tool for allocating risks and a framework for how the parties should respond to a risk that eventuates.

The construction industry relies heavily upon standard form construction contracts, such as those developed by organisations including Standards Australia, the Royal Australian Institute of Architects and the Master Builders Association. Students should learn about the role that standard form contracts play, the importance of understanding the provenance of a standard form contract, and the hazards inherent in amending standard form contracts. By acquiring such knowledge, students are better placed to advise clients on the selection of an appropriate contract for their project, and any modifications to a standard form that should be considered.

B Traditional Construction Contracts

Traditionally, the construction process begins with an architect or engineer preparing the design, contractors bidding for the work, and finally the construction being undertaken. This is generally done pursuant to a fixed price/lump sum contract whereby the contractor undertakes to complete the works within an agreed time period and for an agreed amount.

This traditional process of 'design, bid, build' does not allow for fast-tracking of work, because construction cannot begin until the design is fully complete and documented. Furthermore, there is no opportunity for contractors to contribute their experience and skills into the design, since they only become involved once the design is

fully complete. For these reasons, an alternate system of design and build (D & B)⁴² was developed. As the name suggests, D & B involves a single entity taking responsibility for both the design and construction. This method of procurement appeals to owners, not only because it allows for construction to begin earlier, but also because there is a single point of responsibility; that is, if any problems arise, it does not matter whether they are caused by defective design or poor construction, the same entity is responsible. This removes the ‘finger-pointing’ that is often the first response to the discovery of any problem.

Students should also be introduced to other forms of construction contracts, which, although less common than the fixed price/lump sum contract, are still traditional forms of contracts they are likely to come across in the practice of construction law. These include cost-plus contracts, where the contractor undertakes the work and is paid the actual cost of the work (labour and materials) plus a fee, generally a percentage of the cost; and schedule of rates contracts which are used where the precise scope of the works cannot be quantified at the time the contract is entered into.

The learning objective of this topic is to ensure that students have a solid understanding of the way in which the construction industry operates; in particular, its practices when it comes to construction contracts. This class is designed to provide students with the knowledge and skills necessary to practice in the area of construction law. Understanding the contractual framework that applies to the majority of construction projects is a basic component of such knowledge acquisition.

C Alternative Construction Contracts

The traditional forms of construction contracts, examined in the previous topic, have a poor track record when it comes to minimising conflicts and disputes about construction projects. They are perceived as facilitating an adversarial culture of ‘us versus them’, whereby a ‘win’ for the owner is a ‘loss’ for the contractor, and vice versa. It is for this reason that the construction industry has spearheaded alternative forms of construction contracts, designed to facilitate better relationships between the parties to a construction project and therefore better project outcomes.

These alternative forms of contracting are collectively referred to as ‘relationship contracting’ and generally cover different arrangements, such as partnering, alliances and managing contractor. All forms of relationship contracting are underpinned by the principle that cooperative relationships between the parties to a construction project produce superior results for everyone. However, they all seek to achieve this goal through slightly different processes. For example, alliancing projects see the parties sharing all ‘pain and gains’ through the development of a risk/reward matrix, while managing contractor arrangements replace fixed budget and time obligations with a ‘best endeavours’ requirement.

Alternative contracts are generally suitable only for large projects because of the costs associated with setting them up and changing the culture from adversarial to collaborative. The learning objective of this topic is that students, as potential future construction lawyers, become familiar with these contracts and how they differ from traditional construction contracts, so that they can advise clients about their use in

appropriate circumstances.

D Time Issues

This lecture represents the beginning of the coverage of the second topic area — ‘issues that can arise during the course of construction’. The majority of construction disputes arise in three key areas; namely, time, money and quality. For the owner, these are invariably the most important aspects of a project. The generally accepted wisdom is that an owner can only ever have two of the three elements. Thus, if they want the job done quickly and cheaply, they will sacrifice quality. If they want a high quality job done quickly, it will be very expensive, and if they want a high quality job done cheaply, it will take a long time. Owners invariably want all three, and it is perhaps for this reason that the majority of construction disputes relate to time, cost and quality.

The learning objective of this topic is to introduce students to the way time is managed and regulated on a construction project so that they are in a position to assist their clients to manage issues relating to time and delay within the contractual framework.

Topics covered should address:

- i) key terminology — for example, ‘date *for* practical completion’, ‘date *of* practical completion’, ‘program’, ‘critical path’ and ‘float’;
- ii) the numerous possible causes of delays on a construction project — for example, inclement weather, unforeseen ground conditions, and changes to the scope of works (variations) — and which party carries the risk for these delays;
- iii) the contract mechanisms for dealing with delays — for example, extensions of time and acceleration; and
- iv) the means of managing risks related to time — for example, liquidated damages, delay damages and early completion bonuses.

These topics give students a solid foundational understanding of the important role that time plays in a construction project, and the important role the building contract plays in trying to manage time-related risks. This knowledge will assist students to help their clients respond appropriately to time-related issues and claims.

E Payment Issues

Lord Denning MR famously described cash flow as the life blood of the construction industry.⁴³ As a result, issues regarding late or non-payment of claims provide fertile grounds for disputes. At peak periods of construction, contractors can expend huge sums of money on labour and material in a very short period of time. If reimbursement of these outlays does not occur in a timely manner, contractors can quickly become insolvent. It is for this reason that all construction contracts contain provisions that govern payments to the contractor, and most jurisdictions have legislative regimes to provide contractors (and subcontractors) with some level of security for payment. These range from mechanics’ liens and performance bonds, to the use of bank guarantees and regulatory regimes that provide for the speedy adjudication of payment disputes and judicial enforcement of adjudicators’ awards.⁴⁴

Thus, students should not only learn about the contractual framework for payments during construction, but also the legislative security of payment regime applicable to the students' jurisdiction. Thus, the learning objective for this class is that students should be able to understand and apply the contractual and statutory laws governing payments to be made during the course of construction.

F Quality of Work Issues

Allegations of defective work provide another fertile ground for disputes. Issues that students should learn about regarding quality of work include the following. What warranties (express and implied) does the contractor provide to the owner regarding the end product? What obligations (and rights) does the contractor have to remedy allegedly defective work — both during construction and after completion? What remedies can an owner pursue under the contract, and elsewhere? What is the measure of damages for defective work: rectification costs or diminution in value?

In order to answer these questions, students will need to have a comprehensive understanding of the way defective work is commonly dealt with in construction contracts, as well as potential extra-contractual causes of action, such as negligence or breach of any statutory duties. The learning objective for this class is therefore that students can effectively analyse and apply the contractual clauses governing the quality of work on a project as well as relevant common law and statutory provisions.

G Variations/Changes

It is extremely rare for a construction project to be completed strictly in accordance with the contract drawings. Invariably, changes are required. This may be because the owner has changed its mind regarding an aspect of the design; the ground conditions are not what were anticipated and therefore a re-design is required; or the original design has proven to be incomplete or impractical when it comes time to build the structure. Construction contracts anticipate that changes will be required as the building progresses and include clauses allowing for variations. Notwithstanding that all parties anticipate that there will be variations during a construction project, they are still a frequent cause of disputes. Conflicts arise about whether a component of the work is a variation or part of the original scope of works; whether it is a reasonable variation; whether a variation clause can be used to delete work to give to others; the value of the variation; whether the procedural requirements for the variation have been complied with; and whether the contractor is entitled to an extension of time to complete the project because of the additional work.

The purpose of this class is therefore to ensure that students understand what a variation is — including how the term has been defined in various standard form contracts and by the relevant jurisprudence — so that they can advise clients about the drafting and implementation of contract clauses relating to variations, and effectively assist in resolving disputes about changes to the scope of works.

As discussed above, this construction law syllabus is designed to be taught using a

problem-based learning approach. In order to illustrate the practical application of this approach, a problem relating to variation that students work through in small groups is set out below. This exercise gives students an opportunity to analyse and apply a variation clause to a practical scenario. The exercise is designed to assist students to develop contract interpretation skills as well as deepen their understanding of the complexity of variation problems that can arise during construction.

Class Exercise — Variations⁴⁵

A regional sewerage authority entered into a contract under which the contractor was to carry out various sewerage works consisting of the construction of 840m of sewer, including 19 manholes and the 47 house connection branches.

The contract contained the following clause:

40.1 Variations Permitted.

At any time prior to practical completion the engineer may order the contractor to —

- (a) increase, decrease or omit any portion of the work under the contract;
- (b) change the character or quality of any material, equipment or work;
- (c) change the levels, lines, positions, or dimensions of any part of the work under the contract;
- (d) execute additional work;
- (e) vary the program or the order of the work under the contract;
- (f) execute any part of work under the contract outside normal or agreed upon working hours;

and the contractor shall carry out such variation, and be bound by the same conditions, so far as applicable, as if the variation was part of the work under the contract originally included therein.

The extent of all such variations shall not, without the consent of the contractor, be such as to increase or decrease the moneys otherwise payable under the contract to the contractor by a reasonable amount.

No variation shall vitiate or invalidate the contract, but the value of all variations shall be taken into account and the moneys otherwise payable under the contract shall be adjusted as provided under CL404.

The engineer shall give the contractor notice of variations in sufficient time before the time they are to be carried out to allow for proper replanning of the work under the contract by the contractor.

The regional sewerage authority (through the engineer) directed the contractor to carry out additional works by way of a variation. The extra works had the effect of:

- increasing the amount of excavation required by about 60 per cent;
- increasing the sewer length from 840 to 1181 metres (approx 40 per cent);
- requiring 27 manholes rather than the original 19;
- requiring 90 per cent more concrete; and
- increasing the number of house connection branches from 47 to 91.

The original contract price was \$30 867.40; the total extended price of the new design was \$43 200. This constituted an increase of \$12 332.60 or 40 per cent.

The contractor seeks your advice as to whether it must comply with the variation directed by the superintendent.

H CONSTRUCTION SITE VISIT

There is an ancient proverb that says ‘[t]heory without practice is as lifeless as practice without theory is thoughtless’.⁴⁶ In order to ensure that construction law students are neither lifeless nor thoughtless, a visit to a construction site mid-way through the course is highly recommended. The tour of the construction site is preceded by presentations from people working on the project — generally, the site manager employed by the contractor and a representative of the principal or superintendent. These people generally talk about the nature of the contract (for example, whether it is fixed price or cost-plus), the role that the contract plays in the day-to-day running of the project, the relationships between the various parties involved in the project (for example, the owner, contractor, architect, engineers and subcontractors) and the issues that have been encountered on site to date (for example, latent conditions, variations/changes or time delays). The tour of the site generally begins with students receiving an induction which emphasises the importance of safety on site and the need for students to follow all directions of the site workers.

Problem-based learning provides students with an opportunity to apply the law to real construction problems. However, it is no substitute for observing building works firsthand, and talking to the people involved in administering the construction contract and using it to resolve the day-to-day issues that arise during the course of a project. Thus, the site visit provides students with context for the construction law learned in the classroom, and generally enhances their understanding of the subject matter, as evidenced by the following comments from former students of the author:

Enjoyed site visit — especially as this is not something I have had an opportunity to do in the past. Made lectures more realistic as could see practical application.

[The] visit to an actual construction site was a highlight of the subject. It is extremely rare for students to get an opportunity to engage with the practical elements of law outside of the classroom and certainly deepened my understanding of the way that the law relates to the construction industry.

The site visit was great — good to see the operation of the law in practice.

A visit to a construction site is a core component of the construction law syllabus, and a key tool in educating law students about the complexities of construction projects and the inter-relationship between the construction industry and construction law. It also provides an opportunity for a reflective assessment task. After completing the site visit, students are given two weeks to write a 1500-word paper in which they answer the following questions:

- In your opinion, which of the issues presented during the site visit related to construction law?
- What did you learn about these issues?
- How, if at all, did the site visit change your understanding of the process of choosing the most appropriate form of contract, and the role that the building contract plays on a construction project?
- How did the site visit add to your knowledge and understanding of construction law?

The assignment is worth 30 per cent of the marks for this subject. The remaining 70 per cent of the marks are allocated to a final exam which is entirely problem-based. Students' participation in the class exercises throughout the semester prepares them for answering problem questions in an exam. Giving students an opportunity to apply construction law to practical problems in the exam is consistent with the problem-based learning approach adopted through this subject.

I Latent Conditions

One of the great unknowns when undertaking construction is what lies beneath the ground. Soil test and geotechnical reports can be procured, but they only ever indicate what the ground conditions are *likely* to be, and it is not until excavation begins that the *actual* ground conditions can be known. When the actual ground conditions differ from the anticipated ground conditions, it is known as a 'latent condition' or 'differing site condition'. Latent conditions can include the discovery of hard rock, when soft clay was expected; the finding of ancient artefacts; or the detection of contamination in the soil. Latent conditions can be a significant issue on a construction project, because they invariably involve delays while the condition is dealt with, with time and money implications.

This class should therefore consider the definition of a latent condition; which party should carry the risk for latent conditions; and the standard contractual framework for dealing with latent conditions. Differing site conditions often give rise to claims outside of the contract — for example, for negligence or misrepresentation — and students also learn about these aspects of the law. The learning objective for this module is for students to be able to define a latent condition; be capable of advising a client as to how to respond to a latent condition so as to preserve its legal position; and be able to assess the legal

liability for the consequences (time and money) that flow from the latent condition.

J Insurance

Construction is a risky business. It is therefore not surprising that insurance plays an important role in construction projects and, therefore, construction law. The purpose of this topic is to educate students about the different types of insurance that are used by the construction industry; how to analyse insurance and indemnity clauses in construction contracts; how to read and understand insurance contracts; and the duties and responsibilities of both the insured and insurer.⁴⁷

The different types of insurance that students should learn about include professional indemnity insurance, public liability insurance, contractors' works insurance and statutorily required insurances, such as for workers' health and safety. In analysing these different types of insurance, students should become familiar with insurance terminology, such as claims-made policies and occurrence-based policies, subrogation, indemnification, and the duty of utmost good faith.

By the end of this class, students should be able to distinguish between the different types of insurance that are used to help manage risks on construction projects, understand insurance terminology, and be able to interpret and apply the insurance clauses in construction contracts.

K Security for Performance

Construction projects often span many years and, because of this, parties to a construction contract often require a degree of comfort that the other party has the capacity to complete their end of the bargain, and/or that there will be resources available to compensate an innocent party in the event of default by the other party.

It is most common for owners to request that the contractor provide security for performance. This usually takes the form of a bank guarantee, insurance bond, cash retention, or letter of credit. The contract generally specifies that security is provided in order to ensure the due and proper performance of the contract by the contractor. Construction lawyers tend to become involved in security of payment issues concerning the circumstances when an owner can make a call on the security. For example:

- When is an owner entitled to make a claim against a security provided by the contractor?
- Does the contractor have to be in default under the contract before an owner can call on security?
- What if the contractor disputes the owner's entitlement to the sum claimed? In what circumstances will a court issue an injunction restraining a call on security provided by the contractor?
- Can a court issue an injunction against the entity that issued the security; that is, the bank or insurance company?

These questions can generally be answered by reference to the terms of the contract or

court precedents regarding calls on security.

It is less common, but by no means rare, for contractors to require security from an owner. However, it is not unknown for a contractor to require an owner to provide evidence of finance or capacity to pay the entire contract sum. A corporate owner may be requested to provide either a parent company guarantee or personal guarantee from the company officers.

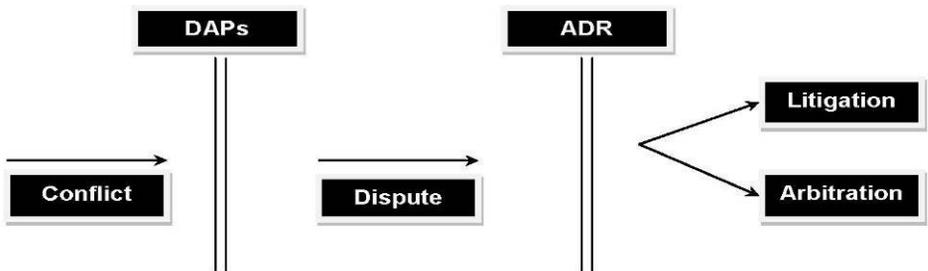
Finally, if there are major pieces of equipment that must be ordered and paid for in advance of delivery to site, a contractor may request an owner to pay for such items prior to installation.

The learning objective for this topic is that students should be able to advise clients on the myriad of issues surrounding security of performance issues. This means that they should be able to interpret and apply the provisions of standard form contracts relating to security for performance, as well as jurisprudence from the relevant jurisdiction.

L Dispute Avoidance Processes

This class signals the commencement of the final topic of construction law; namely, disputes and how they can be avoided, managed and resolved. As already noted, the construction industry is prone to disputes. However, the industry has recently begun to take proactive steps to avoid disputes, and has been the driving force behind Dispute Avoidance Processes (DAPs), which are designed to stop conflicts escalating into disputes.⁴⁸ Like alternative/appropriate dispute resolution (ADR), DAPs are intended to act as a circuit-breaker that keeps parties out of litigation and/or arbitration. However, unlike ADR, DAPs are in place *before* a dispute has even arisen, in order to minimise the risk of disputes. The role that DAPs and ADR play in the lifecycle of a construction dispute is represented in the following diagram.

Figure 1: Lifecycle of a Construction Dispute



There are three primary models of DAPs available, namely: Dispute Review Boards,⁴⁹ Dispute Adjudication Boards⁵⁰ and Dispute Resolution Advisors.⁵¹ Students should learn about the advantages and disadvantages of each of these early intervention models; what kind of projects they are suitable for; how they can be incorporated into the construction contract; and the legal ramifications of each — for example, do the rules of natural justice

apply to hearings conducted by DAPs? And is the decision/recommendation of the DAP admissible in any subsequent litigation or arbitration?

DAPs are to the legal profession what preventative medicine is to the medical profession; that is, a means of assisting ‘patients’ to stay well and avoid serious health problems. Students studying construction law therefore need to be conversant with DAPs and to develop the knowledge and skills to advise clients on their effective use. The learning objective for this module is therefore that students will enter the legal profession with the skills to assist their clients to manage conflicts in such a way that they do not escalate into disputes. They can do this by advising clients about DAPs and by including clauses relating to DAPs in construction contracts.

M Dispute Resolution

As Chief Justice Warren Berger eloquently stated:

The entire legal profession — lawyers, judges, law teachers — has become so mesmerized with the stimulation of courtroom contest that we tend to forget that we ought to be healers of conflict.⁵²

This class is designed to enable students to become construction lawyers who have the skills to be healers of their clients’ conflicts. It introduces students to the plethora of ADR techniques available for resolving construction disputes, including negotiation, mediation, expert determination and mini-trials (also known as ‘senior executive appraisal’).⁵³ Students should learn about the way each form of ADR works, its advantages and disadvantages, and the different paths to ADR; for example, via a contractual requirement or order of the court. The emphasis should be upon students developing an understanding of the different ADR processes, so that they can assist their clients to make informed decisions about which form of ADR to pursue, and skilfully represent them in the ADR process, if required. The learning objective is for students, as future members of the legal profession, to become healers of conflict rather than guns for hire.

If ADR is unsuccessful in resolving a construction dispute, the parties are likely to end up in litigation or arbitration. Construction litigation is in many ways unique, and often conducted within specialist courts or lists.⁵⁴ The second part of this topic should therefore focus on the aspects of construction litigation that distinguish it from other forms of litigation or arbitration. These include the highly complex and technical nature of most construction disputes, which require specialist expert evidence; the numerous parties that tend to be involved, because of the practice of joining as a party every entity that was involved in the construction project; the document-intensive nature of construction that results in extensive discovery; and the need for superior document-handling systems for trials. Students should learn about the innovative procedures that some courts have developed in order to respond to these aspects of construction litigation, including, for example, ‘outsourcing’ technical aspects of the dispute for determination by a Special Referee, that is, a person with specialist technical skills, such as an engineer.⁵⁵ The trial judge is free to accept or reject the findings of the Special Referee but, in practice, a Special Referee’s report is generally accepted, unless there was a failure to adhere to the procedural requirements or due process.

The learning objective of this class is that students be able to identify and apply the procedural rules that have been developed within the courts to more effectively manage complex construction litigation.

N Revision and Exam Preparation

The final class should be devoted to unifying the disparate topics that have been covered in the course. Students can sometimes struggle to understand how all the different topics fit together, and it is therefore important at the end of the course to reiterate the inter-relatedness of the various issues. Students should not look at the different topics in isolation, but recognise the impact that each topic may have on other aspects. For example, a dispute regarding the quality of work may: (i) involve analysis of relevant contract provisions and risk allocation; (ii) trigger an insurance claim; (iii) lead to a call on security; and (iv) ultimately end up in some form of dispute resolution. It is thus important that students perceive the disparate topics in a holistic way.

VII CONCLUSION

Legal education has recently been criticised for separating theory from practice and for failing to prepare law students for the practice of law.⁵⁶ A course on construction law would address these concerns. It would ensure that students who have completed such a subject would be familiar with the actual landscape of their construction clients, their projects and their problems⁵⁷ and thus be well-placed to assist them with practical, commercial advice.

If one of the purposes of legal education is to prepare students for a vocation as a lawyer, then it is appropriate that law students be exposed to as many areas of legal practice as possible. Law schools are doing a disservice to their students, their academics and the legal profession if they continue to fail to offer construction law as an elective subject. By providing a complex, challenging and practical subject such as construction law, law schools will be enriching their curriculum and fulfilling their role of producing law graduates who have the knowledge and skills to work in diverse areas of legal practice, including advising clients involved in construction, engineering and infrastructure projects. Construction law has for a number of decades been recognised as a legitimate area of legal practice, and it is incumbent upon law schools to acknowledge this and include education about this discipline within the electives they offer their students.

It is hoped that the model syllabus proposed in this article may provide some stimulus for more law schools and legal scholars to consider offering a construction law course. Construction law has become a mainstream part of the legal profession, and it is time it became a mainstream part of the legal academy. It is a development that would be welcomed by those practising in the area of construction law who currently shoulder almost sole responsibility for educating young lawyers wanting to specialise in this area of law.

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- ¹ These two countries have been chosen for the study because they both have strong construction industries that contribute significantly to the gross domestic product, and well-established legal professions with a history of practising in the area of construction law. In addition, the author has familiarity with both jurisdictions, having worked as a construction lawyer in California, United States and Melbourne, Australia.
- ² See, eg, in the United States: White & Case, *Practice* (2010) <www.whitecase.com/practices> ('Construction and Engineering'); Morgan Lewis, *Areas of Experience: A–C* (2010) <<http://www.morganlewis.com/index.cfm/fuseaction/practiceArea.listAlpha/nodeID/51fe28f8-210f-442a-b73d-d4255bed92c6/startLetter/a/endLetter/c/>> ('Construction Dispute Resolution, Construction Litigation, and Construction Project Administration & Claim Avoidance'); Morrison Foerster, *Development, Land Use + Construction* (2010) <<http://www.mofo.com/development-land-use--construction-services/>> ('Development, land use and construction'). See, eg, in Australia: Allens Arthur Robinson, *Construction* (2010) <www.aar.com.au/services/const/index.htm> ('Construction'); Minter Ellison, *Areas of Expertise* (2010) <www.minterellison.com/public/connect/Internet/Home/Expertise/> ('Construction'); Clayton Utz, *Construction and Major Projects* (2010) <www.claytonutz.com/area_of_law/construction_and_major_projects/home.page> ('Construction and Major Projects').
- ³ In both Australia and the United States, the vast majority of university engineering, architecture and construction courses offer either compulsory or elective courses on the law relating to construction, engineering and so on. Many professional bodies require that graduates have done some study of construction law before they can be licensed or registered as, for example, an engineer or an architect.
- ⁴ *Paul Henderson Inc v Ark Power & Light C*, 380 F Supp 298, 317 (ED Ark, 1974).
- ⁵ Philip L Bruner, 'The Historical Emergence of Construction Law' (2007) 34 *William Mitchell Law Review* 1, 13–14.
- ⁶ The universities offering a subject on construction law within their law schools include: the University of Texas; University of Arkansas; University of California, Berkeley; University of Hawaii; Duquesne University; University of North Carolina; Arizona State University; University of Nebraska; Whittier Law School; University of San Francisco; University of Alabama School of Law; John Marshall Law School; University of Virginia; Florida Coastal School of Law; University of Richmond; and the University of Denver.
- ⁷ The four Australian universities offering subjects on construction law as part of their LLB or JD programs are: Monash University, University of Melbourne, Murdoch University and University of Notre Dame.
- ⁸ Thomas J Stipanowich, 'Reconstructing Construction Law: Reality and Reform in a Transactional System' [1998] *Wisconsin Law Review* 463, 575.
- ⁹ Matthew Bell, 'Construction Law Graduate Studies around the World' [2009] *Journal of Legal Affairs and Dispute Resolution* 1.
- ¹⁰ See University of Melbourne, *Construction Law* (5 October 2010) <<http://www.masters.law.unimelb.edu.au/index.cfm?objectid=CFBACDCA-1422-207C-BAF9652E1AF7B2D1>>.
- ¹¹ See King's College London, *London MSc Programme: Construction Law & Dispute Resolution* (March 2009) <www.kcl.ac.uk/content/1/c6/06/13/33/MScProspectusv92009.pdf>.
- ¹² Lawrence C Melton, 'What We Teach When We Teach Construction Law' (2009) 29(3) *Construction Lawyer* 8, 9.
- ¹³ Stipanowich, above n 8, 575.
- ¹⁴ The same observation has been made with respect to elder law: Nina A Kohn and Edward D Spurgeon, 'Elder Law Teaching and Scholarship: An Empirical Analysis of an Evolving Field' (2010) 59 *Journal of Legal Education* 414, 430.
- ¹⁵ See, eg, Paula Gerber, 'How to Stop Engineers from Becoming "Bush Lawyers": The Art of Teaching Law to Engineering and Construction Students' (2009) 1(4) *Journal of Legal Affairs and Dispute Resolution in Engineering and Construction* 177–88; D J Doorey, 'Harry and the Steelworker: (or Teaching Law to Non-law Students)' (2008) 14 *Canadian Labour and Employment Law Journal* 107–28; Robert J Morris, 'Not Thinking Like a Non-Lawyer: Implications of "Reorganization" for Legal Education' (2004) 53(2) *Journal of Legal Education* 267–83; Faisal M Arain, 'Leveraging on Information Technology for Teaching Construction Law to Built Environment Students: A Knowledge-Based System (KBS) Approach' (2009) 14(2) *Journal of Construction in Developing Countries* 77.
- ¹⁶ Bruner, above n 5.
- ¹⁷ *Ibid* 20.
- ¹⁸ *Ibid* 21.
- ¹⁹ The Forum on the Construction Industry is the arm of the ABA devoted to educating attorneys about construction law and has more than 6000 members. See ABA, *About Us* <<http://new.abanet.org/Forums/Construction/Pages/Information.aspx>>. The equivalent organisation in Australia is the Society of Construction Law which was formed in 2009 to promote education, study and research in construction law. See Society of Construction Law Australia, *Home* <www.scl.org.au/>.
- ²⁰ Allen L Overcash, 'The Case for Construction Law Education' (2009) 29(3) *Construction Lawyer* 5.
- ²¹ *Ibid* 7.
- ²² *Ibid*.

- ²³ Melton, above n 12, 9.
- ²⁴ Ibid.
- ²⁵ Ibid 10.
- ²⁶ Bruner, above n 5, 13.
- ²⁷ Overcash, above n 20, 6.
- ²⁸ See, eg, *Young v McManus Childs* [1969] 1 AC 454; *Gloucestershire County Council v Richardson* [1969] AC 480.
- ²⁹ See, eg, *Hill v Polar Pantries*, 64 SE 2d 885 (1951); *Ryan v Morgan Spear Association Inc*, 546 SW 2d 678 (Tex Civ App, 1977).
- ³⁰ See, eg, *Sopov v Kane Constructions Pty Ltd* [2009] VSCA 141 (15 June 2009) which involved litigation that lasted for nine years (including various appeals). The period of construction specified in the building contract was 130 days, although the builder terminated the contract after working on site for one year.
- ³¹ Email from Stephen Hess to Lawrence Melton, 16 March 2010 (copy on file with the author).
- ³² Gerber, 'How to Stop Engineers from Becoming "Bush Lawyers"', above n 15, 180.
- ³³ Ibid 179.
- ³⁴ Arain, above n 15.
- ³⁵ Dorothy H Evensen and Cindy E Hmelo, *Problem Based Learning: A Research Perspective on Learning Interactions* (Lawrence Erlbaum Associates, 2000).
- ³⁶ Alice Christudason, 'Challenges of Teaching Law to Non-Law Students' (Paper presented at the Society of Legal Scholars Conference, 13 September 2004) <www.ukcle.ac.uk/directions/previous/issue10/christudason.html>.
- ³⁷ Carol Bond and Marlene Le Brun, 'Promoting Learning in Law' (1996) 7(1) *Legal Education Review* 1.
- ³⁸ It should be noted that the model syllabus set out here does not include references to cases, legislation or standard form contracts. This is because these vary greatly from one jurisdiction to the next. Therefore, the model syllabus focuses on the general principles of each topic, not regional-specific detail.
- ³⁹ See Donald D Kim, Brian M Lindberg and Justin M Monaldo, *Annual Industry Accounts Advance Statistics on GDP by Industry for 2008* (May 2009) <www.bea.gov/scb/pdf/2009/05%20May/0509_indyacct.pdf>.
- ⁴⁰ See IBISWorld, *Construction in Australia: Australian Industry Report* (19 November 2010) <<http://www.ibisworld.com.au/industry/default.aspx?indid=306>>.
- ⁴¹ Patrick Mead, 'Current Trends in Risk Allocation in Construction Projects and Their Implications for Industry Participants' [2007] *Construction Law Journal* 23.
- ⁴² Also known as design and construct (D & C).
- ⁴³ In the Court of Appeal decision of *Modern Engineering (Bristol) Ltd v Gilbert-Ash (Northern) Ltd* the House of Lords overturned the Court of Appeal's decision, but Lord Diplock expressly cited with approval Lord Denning's reference to cashflow being the lifeblood of the industry: *Gilbert-Ash (Northern) Ltd v Modern Engineering (Bristol) Ltd* [1973] 3 All ER 195 at 215.
- ⁴⁴ See, eg, *Building and Construction Industry Security of Payment Act 2002* (Vic) s 18.
- ⁴⁵ The fact scenario for this class exercise is taken from the case of *Wegan Constructions Pty Ltd v Wadonga Sewerage Authority* [1978] VR 67.
- ⁴⁶ Harold Hongju Koh, *Lex et Veritas* (January/February 2005) Legal Affairs <www.legalaffairs.org/issues/January-February-2005/editorial_koh_janfeb05.msp>.
- ⁴⁷ There are numerous texts and articles relating to construction insurance issues. See, eg, Scott Turner, *Insurance Coverage of Construction Disputes* (West Group, 2nd ed, 2009); W J Palmer, J M Maloney and J L Heffron, *Construction Insurance, Bonding, and Risk Management* (McGraw-Hill, 1996); Jens Knocke (ed), *Post-Construction Liability and Insurance* (Taylor & Francis, 1993).
- ⁴⁸ Paula Gerber, 'Dispute Avoidance Procedures' (2001) 18(1) *International Construction Law Review* 122.
- ⁴⁹ See generally Robert M Matyjas et al, *Construction Dispute Review Board Manual* (McGraw-Hill, 1995); Paula Gerber, 'Construction Dispute Review Boards' (1999) 10(1) *Australasian Dispute Resolution Journal* 9; Shelley Maxwell-Smith, 'Dispute Resolution Boards: Coming to a Project Near You?' (2004) 16(1) *Australian Construction Law Bulletin* 1; G P Owen, *Dispute Boards: Procedures and Practice* (Thomas Telford, 2007).
- ⁵⁰ See generally Gordon Jaynes, 'FIDIC's 1999 Edition of Conditions of Contract: Is the DAB Still a Star?' [2000] *International Construction Law Review* 42; Bryan M Sifert, 'International Construction Dispute Adjudication under International Federation of Consulting Engineers Conditions of Contract and the Dispute Adjudication Board' (2005) 131(2) *Journal of Professional Issues in Engineering Education and Practice* 149–57.
- ⁵¹ See generally Colin Wall, 'The Dispute Resolution Advisor in the Construction Industry' in Peter Fenn and Rod Gameson (eds), *Construction Conflict Management and Resolution* (E & FN Spon, 1992); Sai-On Cheung, 'The Alternative Dispute Resolution Movement in the Construction Industry in Hong Kong' (1999) 10(2) *Australasian Dispute Resolution Journal* 98–112.
- ⁵² US Supreme Court Chief Justice Warren Berger, 'State of the Judiciary Address' (Speech delivered at the American Bar Association, 12 February 1984).
- ⁵³ For further information on ADR for construction disputes see Sai-On Cheung, Henry C H Suen and Tsun-Ip Lam, 'Fundamentals of Alternative Dispute Resolution Processes in Construction' (2002) 128(5) *Journal of*

Construction Engineering and Management 409–17; Kathleen M J Harmon, ‘Resolution of Construction Disputes: A Review of Current Methodologies’ (2003) 3(4) *Leadership and Management in Engineering* 187–201; Richard H Steen and Robert J MacPherson, ‘Resolving Construction Disputes out of Court through ADR’ (2000) 65(5) *Journal of Property Management* 58.

⁵⁴ See, eg, the Technology and Construction Court in England <http://www.hmcourts-service.gov.uk/infoabout/tcc/other_bodies.htm> and the Technology, Engineering and Construction List of the Supreme Court of Victoria, Australia <<http://www.supremecourt.vic.gov.au/wps/wcm/connect/Supreme+Court/Home/Lists+and+Sittings/Specialist+Lists/Technology+Engineering+and+Construction/>>.

⁵⁵ See, eg, in Australia, *Supreme Court (General Civil Procedure) Rules 2005* (Vic) Order 50.

⁵⁶ See, eg, William M Sullivan et al, *Educating Lawyers: Preparation for the Profession of Law* (Jossey-Bass/Carnegie Foundation for the Advancement of Teaching, 2007); Roy Stuckey et al, *Best Practices for Legal Education: A Vision and a Road Map* (Clinical Legal Education Association, 2007).

⁵⁷ Stuckey et al, above n 57, 19.