



Aerial view of wind turbine under construction. Credit: P. Heitmann/Shutterstock

# Energy arbitrations in the construction sector

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## Introduction

The world of energy arbitration is immense and growing. This is a direct consequence of the mounting need for energy in a modern technologised and industrialised world, which has led to a rapid rise in the construction of energy infrastructure.<sup>1</sup>

The world of energy arbitration is changing. The relative use of different energy sources has evolved over the long term, having witnessed the primacy of oil, rise of natural gas, and stagnation and decline of coal. Regardless of which fuel source is utilised, there is a constant need to construct new energy facilities capable of extracting fuel sources, converting them into energy and distributing them to the end-user. Arbitrators who before were attuned to the nuances of gas pricing and electricity offtake agreements

now have to come to terms with the reality of renewable energy and solar power. Of course, as is well known, the commercial and scientific considerations involved in these are significantly different from those involved in traditional energy sources.

Finally, the world of energy arbitration is complex. Given the critical infrastructure that these facilities provide, an energy construction project often involves multiple parties, a very long-term time horizon and the existence of state entities. It is not uncommon for disputes to be heavily fought, with not only billions of dollars on the line, but also the future of power within a region.

It is against this backdrop that this brief article seeks to provide some context as to the types of disputes that typify this area of energy arbitration. Of course, it is not possible in an article of this length to cover this entire topic

comprehensively. Instead, first, some brief words regarding arbitration in the energy sector, and then the consideration of three key themes in this space: (1) time; (2) cost; and (3) quality. For each theme, this article first explores issues of risk and the manner in which these can be addressed through contract drafting and, second, examines the legal and contractual principles that frequently arise in contentious energy arbitration disputes.

## Energy arbitrations

There is no question that commercial arbitration has emerged as the primary forum for the resolution of disputes in projects for the construction of energy facilities. International enforceability provides a key advantage in an industry that frequently brings together for each project a vendor and range of specialist contractors from different parts of the world. Procuring the expertise of an experienced energy industry practitioner to preside over a dispute neutralises the risks associated with resolving highly technical disputes in forums that are unsophisticated in international commercial matters. Its prevalence has also increased due to the inclusion of arbitration clauses in leading standard form contracts, such as the FIDIC Conditions of Contract for Construction (the 'Red Book'), Contract for EPC/Turnkey Projects (the 'Silver Book') and Contract for Plant and Design-Build (the 'Yellow Book').<sup>2</sup>

There are unique commercial considerations that apply to energy projects. These include pre-construction considerations, and post-construction uses and demands that are unique to energy facilities. These considerations also encompass political factors that can influence legal and economic policy, such as terms of trade, subsidies and taxes. In many cases, there are governmental third parties involved, which raises additional issues. What these projects all have in common, however, is the core need for the mobilisation of resources and expertise for the design and construction of facilities, albeit with risk allocation provisions that account for these additional risks.

Accordingly, it is of critical importance that parties, when selecting their arbitrators, do so with an awareness of the array of contractual clauses and legal principles that are unique to energy construction disputes. The purpose of this article is to provide a broad overview of these issues of risk and the laws and issues of contract that underline disputes between

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energy project participants when they do arise. It is hoped that this will serve as a guide that familiarises readers with the landscape in this area.

## Time

### *Time-related risk*

It is often said that time is everything in construction. The adverse effects and losses that flow from delay in a project's completion are often wide ranging and severe. They can include an increase in costs for the contractor; lost production and revenue for the owner; adverse effects on the payback of loans to financiers; cashflow and subsequent solvency issues of the project; knock-on delays in multi-phase projects; and breaches of ancillary arrangements to the original contract upon which the project's viability depends (eg, offtake agreements and contracts for inputs). This final category is highly significant in construction projects for energy facilities. Facility owners, more often than not, have entered into a binding offtake agreement to supply energy at a specified level to an offtake partner from the date of project completion, and become liable to liquidated damages and other claims in the event that they are unable to meet this commitment in a timely manner.

Time-related risks are generally allocated to the contractor. A detailed project schedule encompasses key milestones,<sup>3</sup> including a 'notice to proceed' date, 'practical completion' date, and ultimately, 'final completion'. The critical path of activities is evident from this schedule, as is the level of float available to absorb some delay in the project's performance. Where critical delay to a project occurs, the contractor finds itself subject to an owner's claim for general and liquidated damages.

Despite this default position, a contractor may find itself aggrieved and the project delayed as a result of an owner's acts of prevention, which may include active obstruction of the site; failure to provide designs, materials or other obligations that a contractor needs to perform its scope of works; or imposing variations or change orders on the contractor.

Additionally, neutral delays in the form of force majeure fall to the contractor in

accordance with the default position under the common law. By contrast, the FIDIC suite confers upon the contractor a right to seek an extension of time in respect of neutral delay events.<sup>4</sup> The characterisation of an event as force majeure can form the subject of heated negotiation.

### *Time-related disputes*

#### OWNER CLAIMS FOR LIQUIDATED DELAY DAMAGES

Construction contracts often include a liquidated damages clause as the principal (or exclusive) remedy available to compensate an owner for a contractor's failure to achieve timely completion. Such a remedy levies from the contractor an agreed monetary sum that scales per day/week, subject to an agreed cap fixed at a percentage of the contract price (often 10–20 per cent). This sum represents a genuine pre-estimate of the losses that an owner will suffer as a result of delayed completion, and is compensatory rather than punitive in nature. The main rationale behind liquidated damages clauses is to avoid the complex task of proving losses resulting from delay individually in accordance with general principles of contract recovery.

In a number of recent landmark decisions, there has been judicial recognition of a broad range of losses, both monetary and non-monetary in nature, that may be taken into account when calculating the rate of liquidated damages payable for delay. The concept of protectable 'legitimate interests' was introduced in *Cavendish*,<sup>5</sup> and the approach of the Australian High Court in *Paciocco*,<sup>6</sup> was broadly consistent with this.

#### PENALTIES AND PREVENTION

Claims for liquidated delay damages are, however, subject to two key limitations: the doctrine of penalties and the prevention principle.

Under the common law, the doctrine of penalties dictates that where a liquidated damage clause stipulates an amount wholly disproportionate to the value of the construction contract such that it takes the form of a payment *in terrorem*, courts will not

enforce the clause.<sup>7</sup> The test for what constitutes an *in terrorem* clause differs substantially across each common law jurisdiction.<sup>8</sup> The fundamental proposition of law is that a liquidated damages clause must be compensatory in nature and not punitive. By contrast, in civil law jurisdictions, a liquidated damages clause that is disproportionate to actual losses suffered is not struck out as void, but rather, civil courts will adjust the sum stipulated in the clause to accord with the actual losses suffered. This position is perhaps less arbitrary, although it circumvents to some degree the objective of liquidated damages clauses being to avoid having to calculate actual losses.

The prevention principle states that an owner will not be entitled to claim liquidated damages against a contractor for a period of delay that is infected with delays that are the responsibility of the owner. For instance, where a project falls ten days behind schedule, seven of which fall to causes that are the responsibility of the contractor, and three to causes that are the responsibility of the owner, the owner will altogether lose the right to claim liquidated damages in respect of the full ten-day period. The results of this principle may, at times, appear arbitrary, and a contrast can be drawn with the approach taken by civil courts that apportion delay losses. The severe consequences for an owner are further magnified where the parties' agreement specifies that liquidated damages are an exclusive remedy for delay, which may preclude a party from claiming general damages in the alternative.<sup>9</sup>

This scenario is frequently overcome by an owner by granting an 'extension of time' to the contractor in respect of periods of owner-caused delay. Such an extension must be sourced within the contract documentation, and often involves a regime that requires a contractor to give notice of owner-caused delays, often within specified time limits, which are then assessed and granted or declined by the project owner or a site engineer.

In civil law jurisdictions, there is no explicit equivalent of the prevention principle. Instead, civil courts rely on the principles of good faith and fair dealing to give effect to the universal principle that one shall not benefit from his or her own wrongdoing. Some countries, such as China and South Korea, provide codified authority for courts to adjust any liquidated damages amounts to be better apportioned between the loss

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caused by the owner's preventing conduct and the contractor's delay.<sup>10</sup> Others, such as Germany and France, provide authority that a party will not be liable for non-performance or delay where it resulted from an external cause not attributable to that party. Any failure to do so may disentitle the contractor to an extension entirely or permit the contract administrator to reduce the period of extension accordingly.<sup>12</sup>

**CONTRACTOR CLAIMS FOR DISRUPTION**

Disruption disputes are concerned with a contractor's loss of productivity as a result of some form of disturbance by the employer. These disputes will commonly centre on the 'uneconomic working' of the contractor as a result of the employer's conduct.<sup>13</sup> The right of claim may be defined by contract, or as a breach of an implied term of contract that the owner will not prevent or hinder the contractor in the execution of its work.<sup>14</sup> The Society of Construction Law (SCL) Protocol comments that '[m]ost standard forms of contract do not deal expressly with disruption'.<sup>15</sup>

Contractors making disruption claims are required to demonstrate a connection between the alleged disruptive event and the increased costs associated with their loss of productivity

or 'uneconomic working'. This generally requires a comparison between the tender schedule and delivery mechanisms, and the adapted schedule and mechanisms as a result of the disruption. There are a variety of methods by which disruption and productivity costs can be calculated, and the law is not prescriptive of any one method over another.

A common approach is the 'measured mile' approach, in which the contractor compares its rate of productivity in an undisrupted part of the project to the rate of productivity in the disrupted part of the project. Productivity is measured by the number of hours taken to produce a unit of work. This approach may be impracticable where a project has been disrupted from its inception, meaning that there is no baseline productivity from which to measure the disruption. As an alternative, the tender usually specifies an expected level of productivity, and a loss of productivity is realised where the actual productivity rate is less than the planned productivity rate.

Claimants should also be wary that when selecting baseline periods of undisrupted work to compare with disrupted work, there must be a reasonable degree of comparability between the specific work and surrounding circumstances at both ends of the project.



The value of any comparison is otherwise substantially diminished. For example, the undisrupted laying of foundation cannot be used as a measurement for the disrupted piping fabrication of a project.

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#### CONTRACTOR CLAIMS FOR PROLONGATION

Prolongation disputes involve contractor claims for costs associated with delay as a result of owner-based action. They can comprise of a broad range of overhead costs, opportunity costs and additional direct costs. These are often determined by reference to the tender schedule and any express provisions contained in the construction contract setting out terms of recovery of prolongation costs.

A contractor claiming prolongation costs needs to first prove the causation of delay and form of the prolongation. In arbitrations involving energy facilities, this frequently requires the engagement of programming experts to analyse and identify the delay, often through a schedules-analysis approach, and then a quantum expert to particularise the various cost items.

Cost items that are often claimed as prolongation costs include direct costs associated with additional performance days, such as labour costs, utility expenses and security expense; indirect home office overheads incurred by the contractor's corporate management, job site and engineering support personnel costs; idle equipment costs; and mitigation costs.<sup>16</sup>

#### SUSPENSION OF WORKS BY A CONTRACTOR

Primacy is given to the contract for matters concerning the suspension of works by a contractor. The contractor's right to suspend is generally tied to financial concerns, namely, non-payment or a failure by the owner to show evidence of its financial arrangements.<sup>17</sup>

A contractor has no common law right to suspend work.<sup>18</sup> An exception occurs where the non-payment may be characterised as repudiatory conduct or in breach of an essential term of the contract, in which case, the contractor may accept the repudiation of the contract and terminate.<sup>19</sup>

In the event of a dispute, there will often be allegations of 'wrongful suspension' and claims for damages to compensate for losses flowing therefrom. The liability that may follow may be substantial. A contractual right to suspend works must therefore be exercised with caution.

#### RELIEF FOR FORCE MAJEURE

A contractor may seek an extension of time on the grounds of force majeure under most standard form contracts for major construction works.<sup>20</sup> The elements for a successful claim for relief includes that an event occurred that was unforeseeable and beyond the reasonable control of either party. The party seeking relief is often required to comply with notice requirements and mitigate the impact of the neutral delay events on the project. Specific examples of force majeure events that may impact energy projects include sudden shortages in the supply of labour or materials, labour strikes, weather conditions, economic events and government actions. As mentioned earlier, a contractor's entitlement to relief for force majeure is founded solely in the contract. The default allocation of neutral risks at common law falls against the contractor.<sup>21</sup>

#### Cost

##### *Cost-related risk*

The need to complete work within budget is known as the cost risk. Projects for the construction of energy facilities generally adopt a lump sum fixed price contract structure based on careful negotiation and cost assessment, which naturally places cost risk on the shoulders of the contractor. There are two categories of exceptions to this default position. The first category comprises cost overruns that the law mandates will not be borne by the contractor, such as those flowing from an owner's acts of prevention or breach of contract. The second category comprises cost overruns arising from neutral events for which the contractor is not responsible according to the terms of the relevant contract. The parties are free during the negotiation of the terms of the contract to allocate risk for neutral delays in whatever manner they see fit.

There are a multitude of issues that can arise over the course of the project that result in inflated costs, some of which arise from intentional conduct, others from factors that were completely unforeseeable. Explored below are some of the common claims and issues that arise in this context.

*Cost-related disputes*

GENERAL DAMAGES

General damages seek to restore an aggrieved contractual party to the position he/she would have been in had the contract been properly performed.<sup>22</sup> They are compensatory in nature.

The seminal case of the modern understanding of general damages is the English High Court case of *Hadley v Baxendale*.<sup>23</sup> The judges established what is today referred to as the ‘two limbs’ of damages: direct losses, or those that arise naturally out of the breach, and indirect losses, or those that arise as a result of the breach that are said to be within the contemplation of both parties at the time of the contract’s inception.

These fundamental principles provide the basis for a range of claim types, including for costs of ‘disruption’, ‘acceleration’ and ‘prolongation’, as well as costs to correct and/or complete the works. They are, however, subject to the aggrieved party’s obligation to take reasonable measures to mitigate its losses.<sup>24</sup>

CONTRACTOR GLOBAL AND TOTAL COST CLAIMS

A contractor who suffers cost overruns as a result of events that are the responsibility of the owner may seek to recover these costs using the total cost method.<sup>25</sup> This method allows the causation of the various heads of loss to be proven collectively, where it would otherwise be impracticable to disentangle them.<sup>26</sup> The principles of law governing total cost claims as espoused by the courts are many.<sup>27</sup> Four elements have emerged in Canadian jurisprudence:<sup>28</sup>

- the contractor’s tender was reasonable;
- the actual cost is fair and reasonable;

- the overruns resulted from changes/overruns; and
- there is no other practical method available to quantify the damages.

Formulations of the requirements in Australia,<sup>29</sup> the United States,<sup>30</sup> and the United Kingdom<sup>31</sup> are broadly consistent with this position. These jurisdictions also share the fact that there is an extremely high threshold to be met before a total cost claim will succeed. Accordingly, it is preferable, in the majority of cases, for a contractor to particularise and separately prove its heads of loss.

ACCELERATION DAMAGES

Acceleration claims arise where the contractor has incurred additional costs for expediting construction pursuant to the owner’s instruction. The question of whether the contractor is entitled to acceleration costs is ultimately one of contract interpretation and depends on whether the contractor or owner is responsible for the need to accelerate.

In general, acceleration costs comprise the total cost of performing the work in the ‘accelerated’ manner, less the costs of performing the work at the rate specified in the contract. It has been recognised that the specific costs that may be incurred by a contractor accelerating construction may include premium pay, costs of additional tools, equipment, labour and overtime.<sup>32</sup> Thus it is critical that the contractor records all relevant costs incurred during the ‘accelerated’ period, such as the cost of additional resources and amount of overtime worked.

There is currently no consensus among relevant consultants, contractors and employers concerning how acceleration claims



should be calculated. Possible methods include a global or total cost approach, a time impact methodology and/or formulaic approaches, as specified in the contract.<sup>33</sup>

#### CONTRACTOR CLAIMS FOR LATENT CONDITIONS

There are a range of neutral issues that lead to cost overruns (and delay). A few that should be considered include unforeseen physical ground conditions that are common given the exotic locations at which energy facilities are often built.

The time and cost risk associated with hidden ground conditions falls by default to the contractor. However, the allocation of risk for latent defects under several standard

f o r m s ,  
including  
the FIDIC  
suite, are  
i n s t e a d  
subject to  
an objective  
test of whether  
the condition was  
reasonably foreseeable  
by an 'experienced contractor'.<sup>34</sup> This  
is a complex inquiry that may require  
the expertise of an arbiter with  
an astute technical  
understanding to resolve.<sup>35</sup>

#### LIMITATION AND EXCLUSION CLAUSES

Limitation and exclusion of liability clauses are often featured in construction contracts in order to protect

a party from incurring excessive liability for delayed or defective performance.

A popular limitation or exclusion clause is that which limits or excludes the recoverability of indirect or consequential losses.<sup>36</sup> An aggrieved contractor may thereby be limited to claiming direct losses.<sup>37</sup> The characterisation of losses as 'direct' or 'indirect' often forms a point of contention between disputing parties, and so astute contract drafters are often explicit in what type of loss is not recoverable, for example, they list 'loss of earnings' as an excluded or limited loss.

Exclusion of liability clauses are given their ordinary meaning, but in the event of a dispute, ambiguity will be interpreted *contra proferentem*.<sup>38</sup>

#### Quality

##### *Quality-related risk*

A further fundamental risk in construction is that of defects in the contractor's performance and/or in the ultimate facility under construction. The risks associated with quality fall broadly into two categories: (1) the risk that performance does not comply with express contractual stipulations for materials and workmanship (commonly by reference to accepted industry standards, eg, the internationally recognised International Organization for Standardization [ISO] standards); and (2) the risk that the ultimate facility is not fit for purpose (ie, suitable to meet targets and earn revenue upon completion). These involve technical inquiries that are often within the purview of an independent 'project engineer'.

The adverse consequences of sub-quality construction of energy facilities are wide ranging.

Where defects result in output falling short of production targets, this can result in third-party liability on the part of the project owner to an offtake partner and/or financier. Where major projects for national infrastructure are involved, the risks can be magnified and shortfalls in power or water supply may have repercussions for local industry and communities.

*Quality-related disputes*

BREACH OF CONTRACTUAL STANDARDS OR 'FITNESS FOR PURPOSE'

Where a contract includes a fitness for purpose obligation, the contractor is under an obligation to ensure that the completed works will be fit for their intended purpose. In construction projects where the contractor was also procured to undertake the design phase, such a quality standard is usually implied into the contract.<sup>39</sup> To avoid ambiguity, best practice dictates that the owner should specify expressly in clear terms the essential requirements for the ultimate project facility. Some desired purposes are capable of definite assessment; examples are having a 'design life' of a certain number of years or particular outputs from the construction of a power plant.<sup>40</sup> In other cases, however, the contract may require the project to have the capacity to achieve certain results in a range of conditions.<sup>41</sup>

Determinations that materials or workmanship breach specified contractual standards, on the other hand, entail a comparison against a fixed baseline. This is a technical inquiry of fact in the first instance, but the issue of remedies for breaches of building and design standards involves additional questions of contract and law that are addressed below.

CHALLENGES TO THE PROJECT ENGINEER OR CONTRACT ADMINISTRATOR

The project engineer is frequently the neutral arbiter called on to resolve disputes over quality at the project site, armed with the power to issue certificates as to time, cost and quality, such as certificates for payments, certificates as to the achievement of milestones or certificates as to the quality of works. The status of that certificate is determined by contract, but also in accordance with applicable rules of law. Important aspects of the project engineer's role, which provide fertile

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ground for challenges to certificates as to the quality of works, include the following:

- first, the duty of independence and impartiality, by avoiding conflicts of interest and associations that might give rise to bias or the appearance of bias; a breach of these requirements can have the effect of invalidating certificates;
- second, acting in accordance with procedural fairness, by affording due process and a right to be heard to each interested party; this right may, however, be curtailed or eliminated where the contract so provides; and
- third, the potentially final and binding nature of certificates. The character of the engineer's certificates is a question of interpretation of the contract terms, and specifically, whether the parties intended the engineer or administrator's certification to be a final and binding determination of quality of work. If this is found to be the case, grounds for challenging the quality of works are narrow and may include a manifest error, fraud, bad faith or gross negligence. Parties may wish to specify in their contracts the grounds on which the certificate may be revoked.

DEFECTS LIABILITY PERIOD

A common feature in construction contracts is a 'defects liability/notification period',<sup>42</sup> within which the owner can direct the contractor to remedy any defects in the work brought to the contractor's attention. The contractor needs to comply with a properly made request in line with the notice requirements in order to avoid breaching the contract. Principles of waiver and estoppel may preclude an owner from directing the contractor to correct defects to which the owner has previously, by word or conduct, acquiesced.

Where latent defects manifest many years down the track and demonstrate an earlier breach of contract by the contractor, the owner may pursue a claim for damages in tort of contract, subject to potential time bars under statutes of limitations.



## OVERVIEW OF REMEDIES FOR DEFECTIVE WORK

Subject to applicable terms of contract, the following remedies are available to an owner in respect of defective construction services:

- Damages amounting to the cost of rectifying the defective work are the primary remedy available to an owner. An important qualification on this remedy is that awarding damages in the sum of rectification costs would not be unreasonable having regard to the cost and benefit of undertaking the work. This inquiry into reasonableness affords the arbiter a broad discretion to take into account all relevant circumstances, but will require consideration of whether the aggrieved party suffers real loss, and whether the cost of remedial works is disproportionately large compared to the cost of the original works.<sup>43</sup> Importantly, it requires an inquiry into ‘reasonableness in relation to the particular contract and not at large’.<sup>44</sup>
- Specific performance, as a remedy reserved for the exceptional circumstances where an award of damages would be inadequate (eg, where urgent repair work is needed and the contractor is the only party capable of performing the work within the required time).<sup>45</sup>

Other categories of damages may be sought, including delay claims and claims for additional costs, as covered earlier in this article. Also relevant are the laws of waiver and estoppel as they apply to potential acquiescence by the owner to defects in the contractor’s work, by word or conduct.

## Conclusion

As is clear, the issues that arise in construction arbitrations concerning energy facilities consist of the same fundamental claims, contractual issues and legal principles as the broader world of construction disputes. The energy industry brings with it additional complexity in the form of international players and risks, and strict production-driven scheduling and performance. This article has sought to provide a brief introduction to many of these issues, and the associated commercial risks.

## Notes

- \* This article is an adaptation of an earlier paper that can be found at: Doug Jones, ‘Construction Arbitrations Involving Energy Facilities: Power Plants, Offshore Platforms, LNG Terminals, Refineries and

Pipelines’ in J William Rowley (ed), *The Guide to Energy Arbitration* (Global Arbitration Review 2017). The author gratefully acknowledges the assistance provided in the adaptation of this article by his legal assistants George Pasas and Anne Wang.

- 1 Indeed, from 1971–2015, total energy consumption across the globe more than doubled: International Energy Agency, *Key World Energy Statistics* (2017).
- 2 See FIDIC 1999 Sub-Clause 20.6. The Second (2017) Editions of the FIDIC contracts are not addressed in this article.
- 3 FIDIC 1999 Sub-Clause 8.2; NEC3 Clause 30.1.
- 4 FIDIC 1999 Clause 19.
- 5 *Cavendish Square Holding BV v Talal El Makdessi; ParkingEye Limited v Beavis* [2015] UKSC 67.
- 6 *Paciocco & Anor v Australia and New Zealand Banking Group Limited* [2016] HCA 28.
- 7 *Clydebank Engineering and Shipbuilding Co v Don Jose Ramos Yzquierdo y Castaneda* [1905] AC 6; *Dunlop Pneumatic Tyre Co Ltd v New Garage Motor Co Ltd* [1915] AC 79.
- 8 For an in-depth consideration of the penalties doctrine across jurisdictions, see ‘The Penalties Doctrine in International Construction Contracting: Where to from here?’ <http://dougjones.info/content/uploads/2017/07/Penalties-Lecture-New-Zealand-SCL-Final-Website-Version-3.pdf>, accessed 2 February 2018.
- 9 *Baese Pty Ltd v RA Bracken Building Pty Ltd* (1991) 52 BLR 130, 139 (Giles J).
- 10 *Contract Law of the People’s Republic of China* (Adopted at the Second Session of the Ninth National People’s Congress on March 15, 1999 and promulgated by Order No 15 of the President of the People’s Republic of China on March 15, 1999) Art 114; *Korean Civil Code* Art 398-2.
- 11 *German Civil Code* (BGB) s 280(1); *French Civil Code* Art 1147.
- 12 *Buildability Ltd v O’Donnell Developments Ltd* [2010] BLR 122; *Ho Pak Kim realty Co Pte Ltd v Revitech Pte Ltd* [2010] SGHC 106.
- 13 *Baulderstone Hornibrook Pty Ltd v Qantas Airways Ltd* [2003] FCA 174, [100]; *Kay Lim Construction & Trading Pte Ltd v Soon Douglas (Pte) Ltd* [2012] SGHC 186, [72].
- 14 See The Society of Construction Law, *Delay and Disruption Protocol* (2002), [1.19.4].
- 15 *Ibid.*
- 16 Wiley R Wright III and Mark Baker, ‘Damages in Construction Arbitrations’ in John A Trenor (ed) *The Guide to Damages in International Arbitration* (Law Business Research 2016).
- 17 FIDIC 1999, Sub-Clause 16.1.
- 18 *Carillion Construction Ltd v Felix (UK) Ltd* [2001] BLR 1, [34]; *Longyuan-Arrk (Macao) Pte Ltd v Show and Tell Productions Pte Ltd* [2013] SGHC 160, [75].
- 19 *Wui Fu Development Co Ltd v Tak Yuen Construction Co Ltd* [1999] HKCFI 93.
- 20 A supervening act or event beyond the control of the parties, also referred to as an ‘act of God’.
- 21 See foundational case of *Company of Proprietors of the Brecknock and Abergavenny Canal Navigation Co v Pritchard* (1796) 6 TR 750.
- 22 *Robinson v Harman* (1848) 154 ER 363, 365; *Clark v Macourt* (2013) 253 CLR 1, [7]; *Bunge SA v Nidera BV* [2015] UKSC 43, [14]; *MFM Restaurants Pte Ltd v Fish & Co Restaurants Pte Ltd* [2010] SGCA 36, [54]–[56].
- 23 [1854] EWHC J70.
- 24 *Lagden v O’Connor* [2004] 1 AC 1067, 1077–1088.
- 25 For a detailed analysis of total cost claims see Steven

- Stein and Yelena Archiyan, 'The Total Cost Method: Is it Dead Yet? A Cross-Jurisdictional Comparative Analysis' [2016] ICLR 430.
- 26 *Golden Hill Ventures Ltd. v Kemess Mines Inc.* [2002] BCSC 1460.
- 27 *Walter Lilly and Company Ltd v Giles Patrick Cyril Mackay* [2012] EWHC 1773 (TCC).
- 28 *Eco-Zone Engineering Ltd v Grand Falls-Windsor (Town)* [2005] NLTD 197, [238].
- 29 *DM Drainage & Constructions Pty Ltd v Karara Mining Ltd* [2014] WASC 170, [99].
- 30 *Baldi Bros Constructors v United States*, 50 Fed Cl 74 (2001), 80.
- 31 *Walter Lilly and Company Ltd v Giles Patrick Cyril Mackay* [2012] EWHC 1773 (TCC); *William Clark Partnership Ltd v Dock St PCT Ltd* [2015] EWHC 2923 (TCC).
- 32 Overton Currie, 'Avoiding, Managing and Winning Construction Disputes' [1991] ICLR 344, 369.
- 33 R Peter Davison, *Evaluating Contract Claims* (Blackwell 2008).
- 34 For a detailed discussion of latent conditions, see Gordon Smith, 'Latent Conditions and the Experienced Contractor Test' [2016] ICLR 390.
- 35 Recent UK cases on latent conditions include: *Obrascon Huarte Lain SA v Her Majesty's Attorney General for Gibraltar* [2014] EWHC 1028 (TCC); *Van Oord UK Ltd and SICIM Roadbridge Ltd v Allseas UK Ltd* [2015] EWHC 3074.
- 36 FIDIC 1999, Sub-Clause 17.6.
- 37 *Aquatec-Maxcon Pty Ltd v Barwon Region Water Authority* [2006] VSC 117 [103].
- 38 *Elvanite Full Circle Ltd v AMEC Earth & Environmental (UK) Ltd* [2013] EWHC 1191 (TCC), [297].
- 39 *McKone v Johnson* [1966] 2 NSW 471, 472-3; *Jurong Town Corp v Sembcorp Engineers & Constructors Pte Ltd* [2009] SGHC 93, [7].
- 40 See *MT Højgaard A/S v E.ON Climate & Renewables UK Robin Rigg East Ltd* [2017] UKSC 59.
- 41 For a detailed discussion of design life and service life, see Dr Donald Charrett, 'Design life or service life: What's the difference?' [2017] ICLR 16.
- 42 See, eg, FIDIC 1999, Sub-Clause 11.
- 43 *Scott Carver Pty Ltd v SAS Trustee Corporations* [2005] NSWCA 462, [46].
- 44 *Ruxley Electronics Ltd v Forsyth* [1996] AC 344, per Lord Jauncey.
- 45 *Taylor Woodrow Construction (Midlands) Ltd v Charcon Structures Ltd* (1982) 7 Con LR 1 (CA).

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## The eyeWitness mobile app; seeking justice for the worst international crimes

**eyeWitness to Atrocities** begins with a simple vision: a world where the perpetrators of the worst international crimes are held accountable for their actions. As an initiative of the **International Bar Association (IBA)**, with the support from **LexisNexis Legal & Professional**, the eyeWitness to Atrocities app provides a means of documenting human rights atrocities in a secure and verifiable way so that the material can be used as evidence in a court of law.

Every day, around the world, human rights defenders, investigators, journalists and ordinary citizens capture photos and video of atrocities committed by violent and oppressive states and groups. eyeWitness provides these individuals with a tool to increase the impact of the footage they collect by ensuring the images can be authenticated and, therefore, used in investigations or trials.

With the eyeWitness mobile app, users capture photos or videos with embedded metadata that shows where and when the image was taken and confirms that it has not been altered. The images and accompanying verification data are encrypted and stored in a secure gallery within the app. Users then submit this information directly to a storage database maintained by the eyeWitness organisation, creating a trusted chain of custody. Users retain the ability to share and upload copies of their now verifiable footage to social media or other outlets.

The eyeWitness to Atrocities app is available to download for free on Android smartphones. For more information, visit [www.eyewitnessproject.org](http://www.eyewitnessproject.org), follow @eyewitnessorg on Twitter or Facebook, or watch the eyeWitness YouTube channel.

