# **Evaluating Extension of Time Claims**

Tan, H.S.A. King<sup>\*</sup>s College London, University of London (email: adriastan@yahoo.com)

#### Abstract

Claims and disputes under construction contracts will invariably involve a myriad of complex issues under countless unique scenarios where legal case precedents and straightforward interpretation of the contract provisions do not always offer instant panacea. Significantly, techniques involving evaluating extension of time claims have evolved over the years with a plethora of methodology, protocol, practice guideline and recommendation together with expertly prepared publications. This paper offers a perspective into how such claims are being documented, submitted and analysed; especially in the context of the evolving construction fraternity still yearning for a unified approach and procedure in preparing and assessing such claims.

**Keywords:** delay and disruption claims, extension of time, concurrent and culpable delay, liquidated damages

### 1. Introduction

Prolongation and extension of time claims for delay and disruption under construction contracts tend to tread on the same root problems over time, and it is somehow not easy to arrive at some kind of universal approach to dealing with the numerous possible situations and contractual frameworks. To avoid unnecessary disputes arising, it is important to understand common issues like contractual procedures of preparing, submitting and assessing claims; the treatment of float and of concurrent delays; the importance of construction programmes and the mechanism of updating programmes; and the keeping of accurate and contemporaneous records.

### 2. Completion time

When a time for completion is specified, and unless expressed otherwise, it is not deemed to be of the essence of the contract. Specifying that ,time is of the essence" means that the obligation to perform by that date is essential to the contract. Any failure to meet the date gives the employer the right to treat the contract as being at an end. Most construction contracts recognise that completion may be delayed by unforeseen and unanticipated circumstances. The risks of such delays are borne either by the employer or contractor. These risks are usually allocated by the time extension clauses, which enable a new completion to be set, so the liquidated damages clause can continue to operate from this new date.

The contractor has a contractual obligation to regularly and diligently proceed with the works, to use his best endeavours to prevent or mitigate any delay in the progress of the works, and to prevent the completion of the works from being delayed beyond the completion date. This does not necessarily extend to requiring the contractor to add extra resources, or to work outside its planned working hours, in order to reduce the effect of an employer risk event, unless the employer agrees to compensate the contractor for the costs of such mitigating measures.

#### 2.1 Contractual basis for extension of time

Contractual provision for extension of time is an important mechanism in dealing with extending the period in which the contractor has to complete the works due to various delay factors beyond his control, wherein the contractor is relieved from a liability to pay liquidated and ascertained damages. It also allows the contractor to re-programme the works, and provides the employer with a new date to take possession of the site. Without this mechanism, the contractor's obligation would be simply to complete the works by the contract completion date. And if there were any delay factor which is beyond his control, time becomes at large. This means the contractor would complete the works within a reasonable period of time, and the employer loses his rights to recover liquidated damages for late completion.

#### 2.2 Application and grant of extension of time

The purpose of granting an extension of time is to fix the period by which the completion date ought to be extended, depending on the incidence of relevant events and measured by the standard of what is fair and reasonable. The revised date is not the date by which the contractor ought to have achieved completion, but within which the contractor ought fairly and reasonably to have completed the works<sup>1</sup>. Ideally, an application for an extension of time should be dealt with as close in time as possible to the relevant event. Such impact of the employer risk events should ideally be assessed as the work proceeds both in terms of extension of time and compensation.

Where the full effect cannot be reasonably predicted or assessed, an incremental extension of time is then granted for the prevailing predictable effect, and the status reviewed at regular intervals and the extension increased if it becomes justified. In some cases, an in-principle approval to an extension of time is given, and the extension granted as soon as the delay event has ceased to operate, or it becomes apparent. In any event, it would be contractually fatal, in such circumstances, for the contractor to be denied any entitlement to an extension of time, and be coerced into complying with the unadjusted completion date.

### 3. Condition precedent

Many contracts contain clauses stipulating a notice of delay by the contractor as a condition precedent to the award of an extension of time, which requires submitting of a notification with details of any claim for additional time within a prescribed number of days of becoming aware of the relevant event. If the contractor fails to comply, any appropriate relief under the contract is forfeited, and the clause would have the effect of preserving the employer's right to liquidated damages for delay that would otherwise have been lost by an extension of time. The liquidated damages therefore remained payable by the contractor where there was a consequent delay in completion. Very often, a contractor in reality does not immediately know the real cause for claim until after the events have lapsed. Notwithstanding, the prudent contractor should be constantly vigilant and to give the earliest possible warning to the owner, of his intent to claim and the anticipated grounds for doing so. This way, the contractor is able to preserve his rights to claim until such time as the necessary information can be collated and appropriate analyses conducted.

On the other hand, any express provision seeking to bar a contractor's entitlement to relief can be construed as *contra proferentem*''. Under the prevention principle'', neither party can do anything to prevent the other from performing the contract. In *London Borough of Merton v Stanley Hugh Leach Ltd*<sup>2</sup>, it was held that such a clause would not be enforceable, and in *Gaymark Investments Property v* 

<sup>&</sup>lt;sup>1</sup> Balfour Beatty v Chestermount Properties (1993) 62 BLR 1; (1993) 9 Const LJ 117

<sup>&</sup>lt;sup>2</sup> (1985) 32 BLR 51

*Walter Construction Group*  $Ltd^3$ , it was deemed inequitable that the contractor be exposed to liquidated damages as a result of a failure to comply with the notice requirement, with the employer effectively being paid for his own delay.

In some circumstances, the contractor can also prove his rights of claims through ,constructive notification", rather than a written notice. This means the employer ought reasonably to have known that the work is being delayed even though not specifically being notified formally. The contract administrator is often viewed to owe a duty to the contractor, and should be empowered as such, to prospectively grant an extension of time in respect of a risk event even where the contractor has failed to submit a delay notice. As such, extension of time should be granted to the extent that an employer's risk event is reasonably predicted to prevent the works being completed on time. In the Victorian case of *Peninsula Balmain Property Ltd v Abigroup Contractors (No. 2)*, the court may find that the power conferred upon the superintendent to grant an extension of time of his own volition was to be exercised in the interests of both parties, and is thus obliged to act honestly and impartially when deciding whether to exercise this power.<sup>4</sup>

### 4. Record keeping

Record keeping is generally required for protecting contractual rights and useful for some form of post-contract review. The importance of establishing a documentation system is that it ensures that both the employer and contractor maintain a complete, contemporaneous, chronological and provable record of what happened on site, the problems and their impact upon progress, schedule and cost. The success of a delay and disruption claim always depends on the relevant party's ability to submit full and complete information. All records need to identify actual costs and delays associated with each entitlement, in order to establish that additional costs or delays were caused by the delay event. Substantiation is invariably required to verify the relevant quantities, costs and the effect on programme and progress of the works.

If all these are neither practical nor possible, it may well be that a global approach to the entitlement may be taken. Global claims are those where a global or composite sum, however computed, is put forward as the measure of damages or of contractual compensation where there are two or more separate matters of claim or complaint, and where it is said to be impractical or impossible to provide a breakdown or sub-division of the sum claimed between those. The claims are not based on any specific loss to a specific breach of contract, but are based on a composite loss as a result of all the breaches alleged, or presumably as a result of such breaches as are ultimately proved.<sup>5</sup> But such

<sup>&</sup>lt;sup>3</sup> [1999] NTSC 143

<sup>&</sup>lt;sup>4</sup> Peninsula Balmain Property Ltd v Abigroup Contractors (No. 2) [2006] VSC 491

<sup>&</sup>lt;sup>5</sup> John Holland Construction v Kvaerner R.J. Brown Pty Ltd [1996] 82 BLR 83

global claims are generally disapproved and rejected by the courts, tribunals, arbitrators and lawyers<sup>6</sup>. If there are prevailing contractual protocol on application and submission of claims, and if a failure to do so results in the pursuit of a global claim, it is not difficult to see that this would be another aggravating factor for a tribunal to consider when determining the merits of a global claim. Notwithstanding that, global claims have still survived and remain popular with contractors.

### 5. Construction programme

A construction programme is usually a contractual requirement, but would neither constitute as part of a contract document, nor as a mandatory stipulation as to how works should be carried out. In the absence of specific terms stating otherwise, the contractor is generally free to choose for himself as to how he goes about constructing the works so as to achieve the objective of completing by the contractual finish date.

<u>As-Planned Schedule</u>. The initial construction schedule is usually considered as the baseline schedule, presented in network format which clearly shows the interrelationships of the activities. It is advantageous that the as-planned (baseline) schedule be as detailed as possible in order for delays, as they occur, to be incorporated into the schedule in representative locations.

<u>As-Built Schedule</u>. The as-planned schedule is updated with progress-to-date information up to the date of the start of the alleged delay. Each updated schedule serves as the as-built schedule for analysing any alleged delay and provide a new baseline as-planned schedule for the next delay.

<u>Software</u>. All parties should agree on the software that is to be used for the programme, which should show a critical path network and all the necessary logic links with a listing of all leads and lags. The programme should also be able to dynamically respond to changes in order to achieve the desired effect of the suggested requirement for updating.

**Float**. Contractors often take the view that float is theirs to be expended as they wish, and any benefit of float should not be attributed to the employer, since it is the provision that they have made in programming the job to give themselves some degree of flexibility. On the contrary, float should be viewed as a project resource. In practice, this means that whoever causes delay first will get the benefit of the unused float.

In Ascon Contracting Ltd v Alfred McAlpine Construction Isle of Mann Ltd<sup>7</sup>, the position of the court is that it is the project which owns the float. This means if a contract programme has a built-in flexibility that allows certain items to overrun their allotted time without affecting the completion

<sup>&</sup>lt;sup>6</sup> Wharf Properties v Eric Cumine Associates [1991] 52 BLR 8 at [15]

<sup>&</sup>lt;sup>7</sup> [1999] 66 Con LR 119; CILL 1583 & LTL 2/11/99

date then the contractor is not entitled to an extension of time until such time has been fully utilised. Hence, where delay occurs due to an employer risk event, an extension of time should be granted where the effect of that delay would be to reduce the remaining float attributable to the affected activities below zero. If, as a result of an employer delay event, the contractor is prevented from completing the works by his planned finish date, the contractor would in principle be entitled to be paid the costs directly caused by such event, notwithstanding that there is no delay to the contract completion date, and provided that the employer must be aware at the time of contract of the contractor's intention to complete before the contract completion date and that such intention is then realistic and achievable.

### 6. Types and causation of delay

Naturally, all contractor-caused delays, as well as those which are deemed to be the risks of the contractor, whether expressed or implied in the contract, are neither compensable nor entitling the contractor to an extension of time. Delays involve either time or cost compensation, and not necessarily both at the same time. Compensable delays are normally those which result from an act or neglect of the employer or his agents. Delays which neither the contractor nor the employer had control, since neither caused the delay and since both parties have been affected by the delay, only time extension is warranted. The contractor is only entitled to additional time and money in so far as that additional time and money has been caused by something which entitles him to time or money.

<u>The Devlin Approach</u>. If a breach of contract is one of two causes of a loss, both causes cooperating and both of approximately equal efficacy, the breach is sufficient to carry judgment for the loss. This approach if applied to delays would always favour the contractor if one of the concurrent delay was a breach of contract on the part of the employer or his agents. For this approach to be applicable, the other causes of delay would have to be a neutral event and not one which the contractor was responsible.

**First Past the Post**. This approach adopts the logic that where delays are running in parallel the cause of delay which occurs first in terms of time will be used for adjusting the contract period. Other causes of delay will be ignored unless they affect the completion date and continue on after the first cause has ceased to have any delaying affect. In this case only the latter part of the second delay will be relevant to the calculation of an extension of time. This is an appropriate method of resolving the issue of concurrent delays provided there were no delays caused by the employer, and where one of the concurrent delays can be attributed to the employer the courts are determined to ensure the contractor does not incur liquidated and ascertained damages.

<u>The Dominant Cause Approach</u>. In some cases where there is more than one cause of delay, there could be one delaying event which is more influential than the others, or it may be that one cause of delay affects a greater area of the works than the others. This being the case the more dominant cause of delay would be treated as the only matter causing the delay. In recognising that a complex interaction between the consequences of the various causes of loss might make it extremely difficult or even impossible to ascertain with accuracy the effects of any single causative event, the court

approved of the dominant cause approach in the case of John Doyle Ltd v Laing Management (Scotland) Ltd<sup>8</sup>, when it was said: "The question of causation must be treated by the application of common sense to the logical principles of causation. ... In this context it is frequently possible to say that an item of loss has been caused by a particular event notwithstanding that other events for which the employer is responsible can be described as the dominant cause of an item of loss, that will be sufficient to establish liability notwithstanding the existence of other causes that are to some degree at least concurrent".

**The Burden of Proof Approach**. This applies when one of the causes of delay is due to a breach of contract on the part of the contractor such as delay caused by a domestic sub-contractor. Where this type of situation arises the contractor cannot escape the consequences. If part of the damage is shown to be due to a breach of contract by the employer, the contractor must show how much of the damage is caused otherwise than by his breach of contract, failing which he can recover nominal damages only.

#### 6.1 Concurrent and culpable delay

Delay caused by more than one event, when the causes are within the control or the risk of the same party, are called parallel delays, as opposed to concurrent delays when the responsibility is shared by both parties. Where contractor delay or employer delay occurs or has effect concurrently, the contractor's concurrent delay should not reduce any extension of time due. If the contractor incurs additional costs that are caused both by employer delay and concurrent contractor delay, the contractor can only recover compensation to the extent it is able to identify separately the additional costs caused by the employer delay from those caused by the contractor delay.

In *Henry Boot Construction (UK) Ltd v Malmaison Hotel (Manchester) Ltd*<sup>9</sup>, the judge agreed that if there are two concurrent causes of delay, one of which is a relevant event, which is on the critical path, and the other is not, then the contractor is entitled to an extension of time for the period of delay caused by the relevant event, notwithstanding the concurrent effect of the other event. This is a different approach taken by the courts in the past, which have looked for the dominant event, where the most causative delay event is identified to determine whether an extension of time applications as close as possible to the delay event because the "dominant cause" approach encourages a wait and see attitude. The employer cannot take advantage of the contractor's failure to complete on the time where that arises from a matter for which the employer is responsible. In such circumstances, time becomes "at large". Logically, therefore, this argument would always take precedence.

<sup>&</sup>lt;sup>8</sup> [2004] BLR 296

<sup>&</sup>lt;sup>9</sup> [2001] QB 388; [2000] 3 WLR 1824; [2000] APP LR 05/25; 70 Con LR 32

## 7. Analysing delay claims

Most standard forms of construction contracts do not deal adequately with assessing extension of time claims. Techniques used vary, and while most of these techniques are relatively simple to use, they are difficult to operate in practice due to factors such as relevant conditions of contract; the nature of causative events; the value of the dispute; availability of time, records, and programme information; and the programmer's or contract administrator's skill level and familiarity with the project.

<u>As-Planned v As-Built</u>. This method compares the duration of an as-planned activity against the original programme with the as-built duration for that same activity on the as-built programme. The difference in time between the duration on the as-built programme and the duration on the as-planned programme is taken as the period of delay to which a contractor is entitled to an extension of time as a result of a relevant delay event.

**Impacted As-Planned**. This method adds an identified relevant delay event either as a separate activity or onto the duration of an existing activity into the as-planned programme. The as-planned programme with the delay event incorporated is then re-run, to show a resultant revised completion date on what is then called the impacted as-planned programme. The period between the completion date shown on the as-planned programme and that shown on the impacted as-planned programme, is taken as being the period of delay to which a contractor is entitled to an extension of time.

<u>Critical Path Methods</u>. From the as-planned projected procedure, dates are inserted as the project proceeds, such as late provision of information by the employer or additional works. Then under the as-built collapsed network, it takes the as-built programme and deducts the assessed effects of the employer's delay. It then assumes that any remaining delay is the responsibility of the contractor.

<u>Collapsed As-Built (or 'As-Built But For' Method)</u>. This method removes from the as-built programme identified relevant delay events to show what the completion date would have been if those delay events had not occurred. The period between the completion date on the as-built programme and the completion date on the collapsed as-built programme, is taken as being the period of delay to which a contractor is entitled to an extension of time as a result of the relevant delay event.

**<u>Time Impact Analysis</u>**. This primarily uses a window analysis method, based on the analysis of the effects of delay events over the entire length of a project by looking at the events which have affected progress within "windows" of the contract period sequentially, usually at monthly intervals. At the end of each "window" the as-planned programme is updated to take account of any delaying inefficiency which is the contractor"s risk, any necessary logic or duration revisions because of mitigation measures undertaken, together with all relevant events during the period since the last update. The closing of a window in this way forms an as-built programme at the end of that window which effectively becomes the as-planned programme for the next window in sequence. At the end of each window a projection is made to the completion date. At the end of the last window a final

revised completion date is provided which, when compared to the original as-planned completion date, indicates the extension of time entitlement of the contractor.

**First Cause Basis**. This analysis starts from the base of a contract programme, to calculate what would have been the effect of that delaying event alone if there had not been any subsequent delaying events. If there are successive causes of delay, a new contract programme is constructed in respect of the position following every delaying event.

<u>Ultimately Critical Basis</u>. The sequence planned within the original contract programme is largely irrelevant. What matters is what actually happened and to identify the string of critical activities which in total add up to the actual project duration. Some of those activities will be characterised as delay, and some of those activities will be characterised as contract work which was always necessary.

### 8. Compensation

**Prolongation Costs**. This is based on the actual cost incurred by the contractor: work actually done, time actually taken up, or loss and expense actually suffered. Even if one agrees the rates of compensation which reflected the anticipated activity on site at the time the contract is signed, these would have to be recalculated every time a delay occurred, whether or not an extension of time was granted, because delay inevitably affects the level of activity which the contractor undertakes. Prolongation costs should be recoverable by reference to the period when the effect of the employer risk event was felt, and not by reference to the extended period under the contract. In this case, it will be difficult to pre-agree a daily rate, where that rate will differ at different stages of the construction and where it may increase beyond that envisaged as a result of a combination or accumulation of employer risk events.

**Disruption Costs**. Disruption is defined as ,,disturbance, hindrance or interruption to a contractor's normal working methods", resulting in lower working efficiency and productivity, hindering and interrupting regular progress. When caused by the employer, it should be compensated either under the contract or as damages for breach of contract.

<u>Compensation for Concurrent Delays</u>. The contractor should only be entitled to recover the proven cost of the delay caused to him by the employer. He must be able to separate the costs caused by the employer delay from those caused by his own delay. The effect of this approach is that, concurrent delay will give the contractor an extension of time but no compensation, even though the delay caused by the employer would have given rise to compensation, had it occurred on its own.

<u>Compensation for Lost Float</u>. This happens when the employer delay has deprived the contractor of the benefit of his float. If the contractor had intended to complete any portions of the work before the scheduled completion dates but the employer delay means he only completes by the programmed completion date thus consuming the available float, then he should receive compensation for the extended period that he has been on site, being the length of the consumed float. This concept must

be agreed at the beginning of the contract, identifying the activities to which each part of the float applies.

<u>Acceleration Costs</u>. This can be applicable when the contractor is entitled to an extension of time and is required instead to accelerate the works in order to achieve the scheduled completion date. The contractor may be granted either no extension of time or such lesser extension as may be agreed, and is paid such agreed sum, or a reasonable sum to compensate the contractor for the additional cost of the agreed measures to accelerate the work and the effect of those measures on other aspects of the work together with an allowance for profit. The net effect of the agreed acceleration order will be a variation to the contract. Where the contractor is not advised on any time entitlement, he is under considerable pressure, not knowing if he will be held liable for liquidated damages. Additional plant or labour may be brought in, or overtime incurred. This is known as "constructive acceleration order", which effectively converts a refusal to grant an extension of time into an implied instruction to accelerate. The employer may be liable for the additional costs involved. Of course it would be important for the contractor to have already submitted a written claim.<sup>10</sup>

<u>Claim Preparation Costs</u>. This is also usually the inherent discretion of the arbitrators or the courts to award such costs. But where it can be shown that the contractor, or employer, has been put to additional cost as a result of "unreasonable actions or inactions" in preparing or defending claims, then these costs should be recoverable.

<u>Calculation of Costs</u>. Once the contractor is granted an extension of time with costs, the computation of the recoverable items must also be substantiated with properly maintained records and invoices. Normally, the contractor should prove actual loss from records. Only where this is not possible, and as an exception rather than the rule, will calculation be allowed by reference to formulae such as the Eichleay formula, and the Hudson or Emden formulae. The formula is applied to assess loss where certain things have been established proving that the contractor did actually suffer loss. The contractor must show that it would have secured work on another contractor and would have been recovering overheads from this other project, and that there was profit capable of being earned elsewhere and there was no change in the market thereafter affecting profitability of the work.<sup>11</sup> It must also be established that the contractor was unable to deploy resources elsewhere and had no possibility of recovering the overheads from other sources, e.g., from an increased volume of work. Thus such formulae are likely only to be relevant and of value if the event causing the delay has the characteristic of a breach of contract.<sup>12</sup>.

<sup>&</sup>lt;sup>10</sup> Motherwell Bridge Construction Ltd v Micafil Vakuumtechnik (2002) CILL 1913

<sup>&</sup>lt;sup>11</sup> Alfred McAlpine v Property and Land Contractors (1995) 76 BLR 1, see also Norwest Holst v Co-Operative Wholesale Society [1997] APP LR 12/02

<sup>&</sup>lt;sup>12</sup> Beechwood Development Co [Scotland] Ltd v Stuart Mitchell 2001 SLT 1214, 2001 SCLR 725, (2001) CILL 1727

### 9. Liquidated damages

It is often difficult for an employer to prove the amount of damages as a result of late completion. Hence, an appropriate sum for damages arising from any delay is agreed in advance. This provides certainty for both parties, and does not matter whether the employer's loss turns out to be more or less: the agreed amount is payable. Liquidated damages are often set lower than the amount of potential losses, so as to encourage contractors to tender, and to avoid prices being inflated to allow for the risk of being exposed to unspecified or high damages. However, the courts have always refused to enforce anything in the nature of a penalty. Liquidated damages must therefore be a genuine pre-estimate of the probable losses to the employer, and not to any other party, judged at the time the contract is made. If the amount stipulated is merely a figure chosen as a means of keeping the contractor up to time, and unrelated to any estimate of probable loss, then it is a penalty and unenforceable. The employer can then only recover actual damages.

### 10. Conclusion

Analysing and evaluating delay and disruption claims, and assessing extension of time and cost entitlement with all the multiple causes of delay to multiple activities will always be a highly complex and difficult undertaking. Legal principles are not straightforward in application to particular factual situations and are likely to remain overly simplistic in the approach to real world factual scenarios. However, the effort is crucial in achieving an appropriate outcome to any complex delay case, and it typically requires a great deal of hard work and close cooperation of a highly capable delay analyst, supporting facts and documentation, and experienced parties familiar with the development of the project. Despite the availability of sophisticated software for construction programmes and schedules, and the incredulous simplicity on its use, with established delay analysis techniques, the evaluation of time extension is oftentimes frustrated by the failure to maintain an updated programme, complicated with a woeful lack of contemporaneous records.

#### References

Aeberli, Peter D, The Waiting Game, 2000, 46 Essex Street, London WE8 3CR

Anderson, Richard N.M., Analysing Concurrent Delays, 2008, Construction Law Journal, pg 549

Barnes, Peter, Retrospective Delay Analysis Techniques, Alway Associates

Brewer Consulting, Concurrent Delays, Extensions of Time

Construction Speechly Bircham, Conditions Precedent to Extension of Time Claims, July/August 2003, IHL

Elliott, Robert Fernwick, *Delay and Disruption Claims*, Fernwick Elliott Solicitors, Mediators and Adjudicators

Fried Frank Harris Shriver & Jacobson, Unabsorbed Overhead Claims

Furst, Stephen & Others, Keating on Construction Contracts, 2006 8<sup>th</sup> Edition, London: Sweet & Maxwell

Hollands, David E, *Time for Completion and Liquidated Damages*, 76 Coronation Road, Glenfield, Auckland 10, New Zealand

Hudson, Alfred A., *The Law of Building, Engineering, and Ship Building Contracts*, 2001 4<sup>th</sup> Edition, London: Sweet & Maxwell

Jamieson, Brett K, *Claims Conscience? No ... Just Pursuing Entitlements,* 1996, Dragages et Travaux Publics (HK) Ltd

Keating, Donald, Keating on Building Contracts, 1991 5th Edition, Sweet & Maxwell

Knowles, Roger, *Clear Thinking on Compensation for Delay and Disruption*, James R. Knowles, Langdale House, Gadbrook Business Centre, Rudheath, Northwich, Cheshire CW9 7UL

Ness, Andrew D, *Analysing Concurrent Delays*, Construction & Government Contracts Department, Thelen Reid & Priest LLP

O'Leary, Arthur, Consequences of Late Completion, Liquidated Damages and Bonus Clauses in Construction Contracts

Raper, Tim; Cohen, Lewis; Delay and Disruption Claims, 2003, Speechly Bircham LLP

Revay, Steve O.; Jergeas, George F.; *Quantifying Construction Claims*, 2 Mar 1993, Construction Management and Economics, Vol 11, Issue 2, pp 163-166

Society of Construction Law, *The Society of Construction Law Delay and Disruption Protocol*, October 2002

Wideman, R. Max, *Construction Claims Identification, Communication & Record Keeping*, 1990, TUNS/Revay Seminar, AEW Services, Vancouver, BC

Winter, Jeremy; Johnson, Peter; Mimms, Jacqueline; & Others; *Concurrent Delay – New Case Law; Head Office Overhead and Profit; Acceleration Claims;* 2001, Baker & McKenzie; *Resolving Complex Delay Claims,* A Report on the Meeting of the Society of Construction Law on 6th June 2000 by Samuel Townend