A VIEW FROM ACROSS THE POND: AN AMERICAN PERSPECTIVE ON THE SCL *DELAY AND DISRUPTION PROTOCOL*

A paper given to a meeting of the Society of Construction Law in London on 8th May 2006

Richard H Lowe, Evans M Barba and Gregory B Lare

May 2007

D78

www.scl.org.uk

A VIEW FROM ACROSS THE POND: AN AMERICAN PERSPECTIVE ON THE SCL *DELAY AND DISRUPTION PROTOCOL*

Richard H Lowe, Evans M Barba and Gregory B Lare

Introduction

On 16th October 2002 the SCL published its *Delay and Disruption Protocol*.[1] This paper focuses on its purposes, philosophy and structure, and on its approach to:

1. The preparation and maintenance of schedules and records;
2. Float and concurrent delay; and
3. Entitlement to time extensions and compensation for delays.

In discussing the Protocol's treatment of these three issues, we shall summarise its approach and then compare that to the current American approach, as reflected in the leading treatises and case law.

The Protocol's purposes, philosophy and structure

Purposes

First, the Protocol seeks to provide useful guidance to construction professionals on issues that commonly arise when one party seeks to recover from another a time extension or additional compensation for delays on a project or for additional resources used to complete a project.

Second, it seeks to guide construction professionals on avoiding unnecessary disputes relating to requests for time extensions or additional compensation, and on resolving such disputes. The Protocol states that it 'represents a scheme for dealing with delay and disruption issues that is balanced and viable'[2] and 'contains guidance as to matters which should be addressed when the contract is being drafted and negotiated'.[3]

One of SCL's stated goals is that owners and contractors will eventually adopt the Protocol's guidance as 'the best way to deal with delay and disruption

1 Obtainable via www.eotprotocol.com. The Protocol was produced by a drafting sub-committee formed by a group of eleven members of the Society of Construction Law; see its Introduction I and page 51.
2 Introduction B.
3 Introduction C.

issues'.[4] The Protocol readily recognises that it is a document created as the result of certain compromises and 'represents a set of balanced views on a number of issues, some of which do not have absolute answers'.[5] Further, it specifically states that it is not a contract document and is not meant 'to take precedence over the express terms of a contract' or to 'be a statement of the law'.[6]

Philosophy

The overall philosophy of the Protocol is that requests for time extensions or additional compensation arising out of delays or disruption should be resolved during the course of the project, as close in time as possible to the event giving rise to the request for additional time or compensation.[7] To achieve this, the Protocol provides substantial guidance on the preparation and maintenance of schedules and other project documentation, as well as procedures for requesting and determining requests for additional time or compensation arising out of delays or disruption.[8] In this way the parties to a construction contract can avoid unnecessary disputes over requests for additional time or compensation arising out of delays or disruption, and resolve any such disputes efficiently during the course of the project.[9]

Structure

The Protocol is divided into six sections:

1. Introduction;
2. A statement of Core Principles relating to delay and compensation;
3. Guidance Section 1 (on the Protocol's position on Core Principles and on other matters relating to delay and compensation);
4. Guidance Section 2 (on preparing and maintaining programmes[10] and records);
5. Guidance Section 3 (on dealing with extensions of time during the course of the project); and
6. Guidance Section 4 (on dealing with disputed extension of time issues after completion of the project – retrospective delay analysis).

---

4 Introduction D.
5 Introduction D.
6 Introduction B.
7 See eg Core Principle 3.
8 See Guidance Sections 2 and 3.
9 Introduction E: 'Delay and disruption issues that ought to be managed within the contract all too often become disputes that have to be decided by third parties (adjudicators, dispute review boards, arbitrators, judges etc). The number of such cases could be substantially reduced by the introduction of a transparent and unified approach to the understanding of programmed works, their expression in records, and identifying the consequences of delay and disruption'.
10 The Protocol often uses the English term 'programme' instead of the American 'schedule'. Both terms are used in this paper, depending on the context.

The Protocol also contains four Appendices:

- A – Definitions and glossary
- B – Model specification clause
- C – Model records clause and
- D – Graphics illustrating points in the Protocol.

The Introduction sets out the purpose of the Protocol, its goals, what it is (and is not) and how it was prepared. The section entitled 'Core Principles relating to delay and compensation' is precisely what it says: the 'core statements of principle' relating to issues arising out of requests for time extensions or additional compensation resulting from delays or disruption. There are twenty-one principles, which can be summarised as follows:

ISSUE	**CORE PRINCIPLE/S**
The preparation and maintenance of project schedules and other records	1, 11
The purpose of, entitlement to, and procedures for granting extensions of time	2-6
Float, as it relates to time and compensation for delays	7-8
The concept of concurrent delay and its effect on entitlement to an extension of time and, possibly, compensation for delays	9-10
Retrospective delay analysis	12
The mitigation of delays and losses	13
The link between time extensions and compensation for delays	14
Valuing changes	15
The relevance of tender[11] allowances to evaluating the costs associated with delay or disruption	17
Calculating the compensation due for delays	18
Global (ie total cost or total time) claims	19
Acceleration	20
Disruption, as distinct from delay	21

11 The Protocol uses the English term 'tender' instead of the American 'bid.'

Guidance Section 1 gives the Protocol's reasons for taking the positions advocated in the Core Principles, as well as guidance on issues that often arise when requesting or determining requests for time extensions or additional compensation resulting from delays or disruption. Guidance Section 2 makes suggestions on preparing and maintaining project schedules and other records, and using those schedules and records in the context of requests for time extensions or additional compensation. Guidance Section 3 provides procedures for determining requests for time extensions or additional compensation during the project; finally, Guidance Section 4 does likewise for similar requests after completion of the project.

The preparation and maintenance of schedules and records

The Protocol places significant emphasis on the importance of properly preparing and maintaining schedules and other project records to avoid (and then efficiently resolve) disputes relating to requests for time extensions or additional compensation resulting from delays and disruption. Demonstrating this, the first Core Principle in the Protocol deals with this topic, as does an entire guidance section; and the Protocol puts forward two model clauses on schedules and other project records.[12] The importance of preparing and maintaining accurate schedules and other project records to resolving disputes arising out of delays or disruption has also been noted by American courts and commentators.[13]

Core Principle 1 of the Protocol, entitled 'Programme and records,' provides as follows:

---

12 See Section 2.1: 'Many EOT [extension of time] disputes would be avoided if the parties properly monitored and recorded progress of the works during the course of construction'; also Appendix B (Model specification clause) and C (Model records clause).

13 See eg Philip L Bruner & Patrick J O'Connor Jr, *Bruner & O'Connor on Construction Law* (Westlaw, 2002 and annual updates), vol 5 at §15:124: '… the starting point for [analysing time impacts] is a valid as-planned 'baseline' schedule that has been properly and frequently updated'; they note that CPM analysis requires use of contemporaneous records like daily job logs, job meeting minutes, correspondence, e-mails, photos, weather records etc. Jon M Wickwire and others (eds), *Construction Scheduling: Preparation, Liability and Claims* (Aspen, 2nd ed 2003 with 2005 update) emphasise at §8.07 the importance of preparing and maintaining project schedules and other project documents; and Adrian L Bastianelli, Andrew D Ness and Joseph D West (eds), *Federal Government Construction Contracts* (Chicago, ABA Forum on the Construction Industry, 2003) say at page 429: '… schedules that have never, or only rarely, been updated during the course of the project, particularly where there were changes in circumstances normally significant enough to require such changes, may preclude the schedule from serving as an acceptable basis for measuring delays'. See also *Blinderman Constr Co v United States*, 39 Fed Cl 529, 585 (1997), aff'd 178 F 3d 1307 (Table) (Fed Cir 1998): schedule useless for proving delay claim where contractor did not design schedule so that the critical path could be discerned and where revisions to the schedule were 'indiscernible and unaccompanied by explanatory text'; *Fortec Constructors v United States*, 8 Cl Ct 490, 504 (1985): schedule not acceptable basis for measuring delays where not updated during the course of the project; and *Appeal of Coffey Constr Co*, VABCA Nos 3361, 3432, 3473, 93-2 BCA (CCH) ¶25,788 (11th February 1993).

> 'To reduce the number of disputes relating to delay, the *Contractor*[14] should prepare and the *Contract Administrator*[15] (CA) should accept a properly prepared *programme*[16] showing the manner and sequence in which the Contractor plans to carry our the *works*.[17] The programme should be updated to record actual progress and any *extensions of time* (EOTs)[18] granted. If this is done, then the programme can be used as a tool for managing change, determining EOTs and periods of time for which *compensation*[19] may be due. Contracting parties should also reach a clear agreement on the type of records that should be kept …'[20]

Guidance Section 2, entitled 'Guidelines on preparing and maintaining programmes and records,' provides contracting parties with specific guidelines for preparing and maintaining schedules and records on a project, so that the parties can accurately and efficiently deal with requests for time extensions as they arise throughout the course of a project. These guidelines are memorialised in the 'Model specification clause' and 'Model records clause' appended to the Protocol.[21] Guidance Section 2 suggests, *inter alia*:

- regardless of the size of the project, the contractor should submit and the CA should accept a properly prepared CPM schedule identifying all relevant activities (design, manufacturing, procurement, on-site construction) as early as possible in the project;[22]

---

14 The Protocol underlines those terms which appear in its Appendix A (Definitions and Glossary) the first time that they appear in its text. Such terms are italicised in this paper, rather than underlined, with the definitions added in footnotes. Accordingly, Appendix A defines the Contractor as 'The party responsible for carrying out the works', and notes that because 'the Protocol is applicable to sub-contracts as well as main contracts ... when it is being applied to a sub-contract, it is the sub-contractor that is being referred to as the 'Contractor' in the Protocol'.

15 Appendix A defines the Contract Administrator (CA) as: 'The person responsible for administration of the contract, including certifying what extensions of time are due or what additional costs or loss and expense is to be compensated. Depending upon the form of contract the person may be referred to by such terms as Employer's Agent, Employer's Representative, Contract Administrator, Project Manager or Supervising Officer or be specified as a particular professional, such as the Architect or the Engineer. The CA may be one of the Employer's employees'. English law may place a greater duty upon a CA to act independently as between an owner and a contractor than American law. See eg *Scheldebouw BV v. St James Homes (Grosvenor Dock) Ltd*, [2006] EWHC 89 (TCC), [2006] BLR 113, 105 Con LR 90, 22 Const LJ 394 and *Costain Ltd v Bechtel Ltd*, [2005] EWHC 1018 (TCC), [2005] TCLR 6.

16 Appendix A states that the programme 'illustrates the major sequencing and phasing requirements of the project' and is 'otherwise known as the schedule'.

17 Appendix A defines the works as '… what the Contractor is obliged to construct'

18 The Protocol uses the abbreviation EOT for 'extension of time', which the Appendix A defines as 'Additional time granted to the Contractor to provide an extended contractual time period by which work is to be, or should be completed and to relieve it from liability for damages for delay (usually liquidated damages)'.

19 Appendix A defines compensation as 'The recovery or payment of money for work done or time taken up whether by way of valuation, loss and/or expense or damages'.

20 Core Principle 1.

21 Appendix B (Model specification clause) and Appendix C (Model records clause).

22 Sections 2.2, 2.2.1.1, 2.2.1.3 and 2.2.1.4.

- along with its schedule, the contractor should submit a *method statement*[23] describing how it plans to perform the work required by the contract;[24]
- the *Accepted Programme*[25] should be updated regularly[26] and should be the means by which actual against as-planned progress is monitored and can be used to determine whether the Contractor is entitled to an EOT;[27]
- because of the importance of preparing and maintaining an accurate project schedule, the CA may consider declaring the contractor in default for failing to meet its contractual obligations regarding the project schedule;[28]
- the parties should reach clear agreement in their contract on what kind of records are to be kept.[29]

In Guidance Section 2, the Protocol notes that 'Most standard forms of contract contain inadequate requirements for generating an Accepted Programme and/or keeping it up to date':[30] also true of the major standard form contracts used in the USA for *private* projects.[31] By contrast, most contracts for major *public* projects in the USA contain CPM scheduling specifications.[32] Notably, the Protocol recommends that the Accepted Programme be saved electronically at intervals of no longer than one month, and that these monthly updates be 'archived as separate electronic files':[33] a

---

23 Appendix A defines a method statement as 'A written description of the Contractor's proposed manner of carrying out the works or parts thereof, setting out the assumptions underlying the programme, the reasoning behind the approach to the various phases of construction and listing all the work encapsulated in the programme activities. It may also contain the activity duration calculations and details of key resources and gang strengths'.

24 Section 2.2.1.2.

25 Appendix A defines Accepted Programme as the programme 'accepted by the CA'.

26 Sections 2.2.1, 2.2.1.5 and 2.2.4.

27 Section 2.2.2.

28 Section 2.2.5.

29 Section 2.4.1.

30 Section 2.2.1.

31 See eg American Institute of Architects, Document A201 (1997), *General Conditions of the Contract for Construction* at §3.10.1 (obtainable via www.aia.org; Associated General Contractors of America, Document No 200, *Standard Form of Agreement and General Conditions Between Owner and Contractor* (AGC 2000 edition) at ¶6.2 (obtainable via www.agc.org; Engineers Joint Contract Documents Committee, Document C-700, *Standard General Conditions of the Construction Contract* (EJCDC C-700, 2002) at ¶¶2.05-2.07 and 6.04 (obtainable via www.nspe.org/ejcdc; and Design-Build Institute of America, Document No 535, *Standard Form of General Conditions of Contract Between Owner and Design-Builder* (DBIA #535) at §2.1.3 (obtainable via www.dbia.org. None of these documents contain specific requirements regarding the type of schedule to be used or how it is to be maintained and updated, although such requirements may be found in specifications or other contract documents that are a part of the parties' contract.

32 Evans M Barba, 'Prospective and Retrospective Time Impact Analysis', Construction Briefings (Thomson/West, USA), July 2005 at page 1.

33 Section 2.2.1.5.

requirement not found – although it should be – in any of the major standard form contracts used in the USA for private projects.

Float and concurrent delay

Float

The Protocol defines 'float' as 'the amount of time by which an activity or group of activities may be shifted without causing delay to a contract completion date' or 'the time available for an activity in addition to its planned duration'.[34] These definitions are essentially identical to the US definition of 'float' as 'the amount of time an activity can be delayed without extending the project's completion date',[35] so we can move to consider the similarities between the Protocol's and the American approaches with respect to determining entitlement to a time extension.

In Guidance Section 1.3, entitled 'Float as it relates to extensions of time,' the Protocol recognises that the question of who 'owns' the float on a project can often lead to disputes between the parties to a construction contract.[36] It goes on to state accurately and concisely the positions usually advanced by contractors and employers[37] (ie owners or upper-tier contractors) as to why the contractor or the project should own the float. Having explained that ownership of float can be a cause of disputes, the Protocol recommends parties to address this in their contract, noting that this is rarely already done in standard form contracts.[38] This advice applies equally to construction professionals in the USA. Like the standard forms mentioned in the Protocol, none of the most widely used standard form contracts in the USA for *private* projects contains a provision addressing which party owns the float on a project.[39] By contrast, most *public* contracts for substantial projects in the USA contain a provision specifying that the project owns the float.[40]

---

34 Section 1.3.2 and Appendix A.

35 See Barry B Bramble & Michael T Callahan, *Construction Delay Claims* (Aspen, 3rd ed 2000 and annual supplements) at §11.02; also Bastianelli (see note 13) at page 427 (internal quotations and citations omitted): 'Float, in the context of construction scheduling, is the amount of time any given activity or path of activities may be delayed before it will affect the project completion time'; and Wickwire (see note 13) at §8.02: '*Float* is the contingency time associated with a path or chain or activities ... Float is measured by comparing the start or finish of an activity on an early- and late-date basis'. Barba (see note 32) at page 3 defines 'total float' as 'contingency time associated with a path or chain of activities, and represent[ing] the amount of time by which the early finish date of an activity may be delayed without impacting upon the critical path and thereby delaying overall completion of a project'.

36 Section 1.3.2.

37 Appendix A defines the Employer as 'The party under the contract who agrees to pay for the works', adding that 'when [the Protocol] is being applied to a sub-contract, it is the main contractor that is being referred to as the Employer in the Protocol'.

38 Section 1.3.3.

39 None of standard forms AIA Document A201 at §3.10.1, AGC 200 at ¶6.2, EJCDC C-700 at ¶¶2.05-2.07 and 6.04 and DBIA Document No. 535 at §2.1.3 (for all these forms, see note 31) contain specific language on ownership of float, but the

The Protocol then recognises that where a contract contains language stating that a contractor will only be entitled to a time extension where an *Employer Delay*[41] postpones completion beyond the contract completion date, the likely result is that the project owns the float.[42] On the other hand, where the language in a contract suggests that the contractor is entitled to a time extension whenever the employer causes a delay, the contractor probably owns the float.[43]

The Protocol then discusses the 'unfairness' that can result when either the project or the contractor owns the float.[44] Where the project owns the float, the employer can cause delays and use up all the float, resulting in the contractor paying liquidated damages as a result of a later-caused contractor delay, which would not have been critical had the employer not used up all of the float.[45] On the other hand, where the contractor owns the float, the contractor may be entitled to a time extension, notwithstanding the fact that employer delays may not have actually delayed the project at all.[46] The Protocol then notes that because the issue of who owns the float has a significant effect on whether the contractor will be entitled to a time extension, the issue is likely to be the source of disputes between the parties if not addressed in their contract.[47]

Next the Protocol provides guidance in Core Principle 7 for those situations where the parties have failed to specify in their contract who owns the float:

> 'Unless there is an express provision to the contrary in the contract, where there is remaining float in the programme at the time of an Employer Risk Event, an EOT should only be granted to the extent that the *Employer Delay* is predicted to reduce to below zero the *total float*[48] on the *activity* paths affected by the Employer Delay …'[49]

Thus the Protocol takes the approach that, where the parties have not specified in their contract who owns the float, the project owns the float, with 'the effect

---

specifications or other contract documents that are part of the parties' contract may contain such a provision.

40 See Wickwire (see note 13) at §9.08[E], also Barba (see note 32) at pages 4-5.

41 Appendix A defines an Employer Delay as 'any delay caused by an Employer Risk Event' and an Employer Risk Event as 'An event or cause of delay which under the contract is at the risk and responsibility of the Employer'.

42 Section 1.3.3.

43 Section 1.3.3.

44 Section 1.3.4.

45 Section 1.3.4.

46 Section 1.3.4.

47 Section 1.3.4.

48 Appendix A defines total float as 'The amount of time that an activity may be delayed beyond its early start/early finish dates without delaying the contract completion date'. This is nearly identical to the American approach, where Wickwire (see note 13) at §3.10 defines total float as 'the amount of time an activity can slip without affecting the project completion date, or a fixed milestone date that it the basis for any float computation'. See also Barba (see note 32) at page 4.

49 See also Section 1.3.1.

that float is not time for the exclusive use or benefit of either the Employer or the Contractor'.[50] The Protocol notes that its approach is 'consistent with current judicial thinking ... that an Employer Delay has to be critical … before an EOT will be due'. In concluding Guidance Section 1.3 discussing float, the Protocol recognises that '… accurate identification of float is only possible with the benefit of a proper programme, properly updated'.[51]

Construction professionals, commentators and courts in the USA take an approach to float identical to the approach advocated in the Protocol. As an initial matter, US construction professionals would agree that the parties to a construction contract should address the issue at the time of contracting.[52] Further – after initially taking the approach that the contractor, rather than the project, owned the float – courts and commentators in the USA have adopted the approach in the Protocol that, in the absence of a contract provision stating otherwise, the project owns the float.[53] In fact, this principle has become so well established that 'almost all significant public procurements include contract clauses providing that the float is not for the exclusive benefit of any one party to the project'.[54] Finally, US commentators have also recognised the importance of regularly updating the schedule to accurately determine float.[55]

Concurrent delay

The Protocol defines 'true concurrent delay' as 'the occurrence of two or more delay events at the same time, one an Employer Risk Event, the other a

---

50 Section 1.3.6.

51 Section 1.3.8.

52 Barba (see note 32) notes at page 4 that owners often include a provision in contracts stating that the project owns the float 'in order to clarify the owner's position'.

53 See eg Bruner & O'Connor (see note 13), vol 5 at §15:125: 'It is now well settled that, unless otherwise provided in the contract, float is not owned by any party and thus is a time resource available to be utilised by all parties working on the project' (citing cases). See also Bastianelli (see note 13) at page 428 (internal quotations and citation omitted): 'Overall, however, the position of most commentators who have addressed the subject is to embrace the shared resource approach mentioned previously: Unless specifically defined in the contract specifications, float is a resource that belongs to the project and is available for all parties to use'.; and Barba (see note 32) at page 4 and notes 7-10: 'Early decisions held that the contractor, not the owner, owned schedule float. As critical path method delay analysis began to grow in terms of its acceptance by courts and boards, however, these tribunals departed from their traditional view and approach to float ownership issues, focusing not on 'who owned the float' per se but on whether the delay(s) in question affected the project's critical path'; he goes on to state that the current approach of courts and boards is that 'the project owns the float'. See also *Williams Enters Inc v Strait Mfg & Welding Inc*, 728 F Supp 12 (DDC 1990), aff'd in part, remanded in part on other grounds, 938 F 2d 230 (DC Cir 1991); *Weaver-Bailey Contractors Inc v. United States*, 19 Ct Cl 474, 481 (1990), reconsideration denied 20 Cl Ct 158; *Appeal of MCI Constructors Inc*, DCCAB No D-924, (1996); *Appeal of Blackhawk Heating & Plumbing Co*, GSBCA No. 2432, 75-1 BCA (CCH) ¶11649 (1975); *Appeal of Dawson Constr Co*, GSBCA No 3998, 75-2 BCA (CCH) ¶11563 (1975).

54 Wickwire (see note 13) at §9.08[E]; Barba (see note 32) at page 5 notes similarly.

55 See eg Bruner & O'Connor (see note 13), vol 5 at §15:125: 'Regular updates of the CPM schedule allow the parties to actually compute the float lost or gained on non critical activities as well as time lost or gained on the critical path'.

Contractor Risk Event,[56] the effects of which are felt at the same time.'[57] This definition of concurrent delay is essentially identical to the US definition of concurrent delay as 'two or more independent causes of delay during the same time period'.[58] The Protocol notes: 'The term concurrent delay is often used to describe the situation where two or more delay events arise at different times, but the effects of them are felt ... at the same time', suggesting that this is more correctly termed 'the 'concurrent effect' of sequential delay events'.[59] It is not entirely clear what this phrase, as used in the Protocol, means; we assume it describes the situation where two or more delay events do not begin or end at the same time, but for some period of time both or all of the delay events are causing a critical delay. American commentators recognise this situation also as a concurrent delay.[60]

Having established that the Protocol's definition is the same as in the US, we move to the similarities and differences between the Protocol's approach to concurrent delay and the American approach. Core Principle 9, entitled 'Concurrent Delay – its effect on entitlement to extension of time,' provides as follows:

> 'Where *Contractor Delay to Completion* occurs or has effect concurrently with *Employer Delay to Completion*, the Contractor's concurrent delay should not reduce any EOT due …'

Core Principle 10, entitled 'Concurrent Delay – its effect on entitlement to compensation for prolongation,' provides as follows:

> 'If the Contractor incurs additional costs that are caused both by Employer Delay and concurrent Contractor Delay, then the Contractor should only recover compensation to the extent it is able to separately identify the additional costs caused by the Employer Delay from those caused by the Contractor Delay. If it would have incurred the additional costs in any event as a result of Contractor Delays, the Contractor will not be entitled to recover those additional costs …'[61]

Thus the Protocol takes the approach that where a contractor delay is concurrent with an employer delay, the contractor is entitled to an EOT but no compensation (often referred to in the USA as 'time – no money'), unless the

---

56 Appendix A defines a Contractor Risk Event as '… an event or cause of delay which under the contract is at the risk and responsibility of the Contractor'.

57 Section 1.4.4.

58 Bramble & Callahan (see note 35) at §1.01[D]. See also Wickwire (see note 13), who at §8.03 defines concurrent delay 'as a situation in which two or more delays are occurring at the same time during all or a portion of the delay periods being considered'); Bastianelli (see note 13) at page 424 as 'where the overall project has unquestionably been delayed, but there are two or more possible explanations of the underlying cause of the delay …'; and Barba (see note 32) at page 5 as 'when two or more separate delay events occur during the same time period'.

59 Section 1.4.6.

60 See eg Wickwire (see note 13) at §8.03, recognising that the delays do not need to be equal in duration, but rather 'equal in duration for all or a portion of the delay periods being considered'; and Barba (see note 32) at page 7.

61 See also Section 1.10.

contractor can demonstrate that any additional costs claimed were caused specifically by the employer delay rather than the contractor delay. This is identical to the American approach, as summarised by Bruner & O'Connor:

> '… where both parties contribute to the delay neither can recover damage, unless there is in the proof a clear apportionment of the delay and expense attributable to each party.'[62]

Consistent with the Protocol's fundamental principle that requests for extensions of time should be addressed as close in time to the event giving rise to the delay, it encourages the parties to deal with concurrent delays at the time delay events occur, rather than focusing on 'an 'after the event' analysis of cause and effect of the different delays, and/or which of a number of delays is the dominant one'.[63] At the same time, however, the Protocol recognises that the issue of a contractor's entitlement to *compensation* for a concurrent delay can usually only be determined retrospectively, ie after the effect of the delay events has occurred.[64]

The Protocol readily acknowledges the contradiction, but fails to explain why the issue of entitlement to a time extension in the context of a concurrent delay can be determined prospectively 'at the time the delay events occur', while the issue of compensation cannot usually be determined until after the effect of the delay has already occurred.

We submit that in the context of concurrent delay it is extremely difficult, if not impossible, to determine entitlement to a time extension prospectively. Further, in many instances it is unlikely that the parties to a construction contract will be able to resolve issues of concurrency prospectively, as it would require the contractor to admit that it is delaying the project at the time it is seeking a time extension.

Time extensions and compensation for delays

Requests for extensions

As stated above, one of the fundamental principles of the Protocol is that requests for time extensions should be made and resolved at the time of the delay event giving rise to the request for a time extension, or as close as possible to that time. Accordingly, Core Principle 3 provides, in part:

---

62 Bruner & O'Connor (see note 13), vol 5 at §15:121, quoting *William F Klingensmith Inc v United States*, 731 F 2d 805, 809 (Fed Cir 1984). See also Bramble & Callahan (see note 35) at §11.04; Bastianelli (see note 13) at page 424; and Barba (see note 32) at page 5. See also *Blinderman Constr Co v United States*, 695 F 2d 552 (Fed Cir 1982); *Aetna Cas & Sur C v Butte-Meade Sanitary Water Dist*, 500 F Supp 193 (DSD 1980); and *Titan Pacific Constr Corp v United States*, 17 Cl Ct 630 (Cl Ct 1989).

63 Section 1.4.11.

64 Section 1.10.5 states that 'The loss and/or expense flowing from an Employer Delay cannot usually be distinguished from that flowing from Contractor Delay without ... [1.10.5.2] an *as-built* programme demonstrating the work and sequence actually carried out and the as-built critical path' [*emphasis added*].

> 'Applications for EOT should be made and dealt with as close in time as possible to the *delay event* that gives rise to the application … The parties should attempt so far as possible to deal with the *impact* of Employer Risk Events as the work proceeds, both in terms of EOT and compensation.'[65]

Apparently in an effort to encourage this behaviour, the Protocol has developed a unique approach: to deny an owner any benefits if he waits until the end of a project to determine the contractor's entitlement to additional time. To that end, the Protocol recommends in Core Principle 12 that in deciding entitlement to a time extension retrospectively, the judge, arbitrator or other decision-maker of a dispute over entitlement to a time extension 'should so far as is practicable put him/herself in the position of the CA at the time the Employer Risk Event occurred ... [and] then determine what (if any) EOT entitlement could or should have been recognised by the CA at the time'.[66]

The Protocol's approach demonstrates a willingness to forego the accuracy of determining entitlement to time extensions based upon whether an event *actually* delayed the project, in an effort to force employers to resolve requests – by depriving employers of the benefit of using as-built data to argue that an employer delay did not actually delay the project. Specifically, to that end Section 4.19 states:

> 'The Protocol considers that the process of dealing with disputed EOT issues after the completion of the project should not replicate and validate that 'wait and see' approach, and that is why it considers that, in deciding EOTs, adjudicators ... should so far as is practicable put themselves in the position of the CA at the time the Employer Risk Event occurred.'[67]

Core Principle 4 and Guidance Section 3.2.6 echo these principles, stating that EOTs 'should be granted to the extent that the Employer Risk Event is *reasonably predicted* to prevent the works being completed by the then prevailing contract completion date …' [*emphasis added*]

Dealing with time extensions during the course of the project

Guidance Section 3 of the Protocol, entitled 'Guidelines for dealing with extensions of time during the course of the project,' sets out the Protocol's recommended procedure for 'efficiently and accurately' resolving such

---

65 Core Principle 3; see also Section 1.2.4.

66 Section 4.19, repeating part of Core Principle 12. The use of the term 'occurred' could lead to confusion, because it is not clear whether it means at the start of the Employer Risk Event or at some time during the delay caused by this. An extra phrase 'at the start of the Employer Risk Event' would clarify the point.

67 Section 4.19, which also provides: 'it is not good practice for CAs to 'wait and see' what the full effect of an Employer Delay is, and justify not granting an EOT if the Contractor, by making efforts beyond that which are required of it under the Contract, overcomes the Employer Delay'.

requests.[68] It begins by noting that in order to use its recommended procedures, the parties must have followed the Protocol's recommendations on preparing and maintaining schedules and other project records,[69] laid out in Guidance Section 2 and discussed above.

Guidance Section 3 then describes its recommended procedure for addressing requests for time extensions during the course of a project. This involves a *prospective* time impact analysis (TIA)[70] to determine a contractor's entitlement to a time extension,[71] ie a TIA performed as of the start of a delay or of a change in the work. By contrast, a *retrospective* TIA would be one performed after the delay has ended or the changed work has been performed. The Protocol's prospective TIA procedure requires the contractor to submit a schedule 'sub-network'[72] (usually referred to in the US as a 'fragnet') to be inserted into the schedule update closest in time to the alleged Employer Risk Event, showing the 'actual or anticipated effect of the Employer Risk Event'.[73] The schedule sub-network should be 'accompanied by such documents and records as are necessary to demonstrate the entitlement to an EOT'.[74] The Protocol provides general guidance as to how the schedule is to be updated prior to insertion of the sub-network and how the sub-network is to be prepared and inserted into the updated schedule,[75] requiring the contractor and employer to agree on the sub-network.[76]

Although the Protocol appears to advocate performing *prospective* TIAs *only* to determine entitlement to time extensions during the course of a project, it is not clear whether it is ever appropriate to perform a *retrospective* TIA in the same situation. For example, Section 3.2.6 provides that 'the Updated Programme should be the primary tool used to guide the CA in determining the amount of the EOT' and that '… the EOT should be granted to the extent that the Employer Risk Event is *predicted* to prevent the works being completed by the then prevailing contract completion date' [*emphasis added*]. However, Section 3.2.2 provides that the sub-network to be inserted into the Updated Programme should show 'the *actual* or anticipated effect of the Employer Risk Event ...' [*emphasis added*]. Further, Section 3.2.11,

---

68 Section 3.1.

69 Sections 3.1 and 3.2.11.

70 Section 3.2.11: 'The methodology described in this section [Guidance Section 3] is known as 'time impact analysis'.

71 See Barba (see note 32), who at pages 13-15 describes the procedure for performing a retrospective TIA and at pages 8-10 gives an example of a contract clause providing for both prospective and retrospective time impact analyses during the course of a project. We suggest that the Protocol could be improved by specifying the procedures for performing both prospective and retrospective TIAs in Appendix B, the 'Model specification clause'.

72 Appendix A defines a sub-network as '… a group of activities or durations, logically linked', adding that '… in the Protocol [the sub-network] ... is to be used to illustrate the work flowing directly from an Employer Risk Event'.

73 See Section 3.2.2.

74 See Sections 3.2.2 and 3.2.13: 'Although the programme should be the primary tool for guiding the CA in his determination of EOT, it should be used in conjunction with the contemporary evidence to ensure that the resulting EOT is fair and reasonable'.

75 Sections 3.2.7 and 3.2.8.

76 See Section 3.2.9.

describing the methodology for a TIA, recommends that this methodology be used 'wherever the circumstances permit, *both for prospective and (where the necessary information is available) retrospective delay analysis*' [*emphasis added*].

The statements in Sections 3.2.2 and 3.2.11 – suggesting or specifically stating that *retrospective* delay analysis may be appropriate under certain circumstances for determining entitlement to a time extension during the course of the project – are difficult to reconcile with the use of the term 'predicted' in Section 3.2.6 and the procedure in Guidance Section 3, which generally looks only at the impact of the Employer Risk Event to the contractor's projected *planned* performance of the Work. So it is not entirely clear from Guidance Section 3 whether it is ever appropriate to seek or determine entitlement to a time extension during the course of a project by performing a *retrospective* TIA.

Significantly, the Protocol does not explain why a retrospective TIA could not be performed during the course of a project when a contractor is seeking or an employer is determining entitlement to a time extension. It is certainly possible to do so;[77] but perhaps such an analysis during the course of a project would be inconsistent with the Protocol's core principle, mentioned above and discussed further below, that adjudicators should, to the extent practicable, determine entitlement to a time extension by putting themselves in the shoes of the CA at the time the delay occurred.

Dealing with time extensions after completion of the project

Guidance Section 4 begins by recognising the fundamental tenet that an accurate and properly updated project schedule and proper record-keeping are essential to performing an accurate retrospective delay analysis,[78] as numerous US courts and commentators have also done.[79] In situations where the parties have not followed the Protocol's recommendations on preparing and maintaining accurate schedules and records, it suggests that the method used to analyse and assess delay and prolongation after a project is completed will be largely dictated by the following factors: 'the relevant conditions of contract; the nature of the causative events; the value of the dispute; the time available; the records available; the programme information available; [and] the programmer's skill level and familiarity with the project'.[80]

The Protocol identifies four possible methods for performing a retrospective delay analysis:

1. The as-planned versus as-built method;
2. The impacted as-planned method;
3. The collapsed as-built method; and

77 See note 71.
78 Section 4.1.
79 See note 13.
80 Section 4.2.

4. The Protocol's own TIA method.[81]

The Protocol advocates Method 4 as 'the best technique for determining the amount of EOT that a contractor should have been granted at the time an Employer Risk Event occurred'.[82]

It is unlikely that American adjudicators would accept either Methods 2 or 3, unless perhaps the parties' contract specifically required one of these. And the Protocol's own TIA method (Method 4), as discussed below, is fundamentally different from the retrospective delay analysis methods common and accepted in the USA.

Method 1: as-planned versus as-built

The as-planned versus as-built method of retrospective delay analysis involves comparing the contractor's as-planned schedule against a properly reconstructed as-built schedule.[83]

> 'The actual comparison process involves the effort of determining the actual 'as-built' critical path from the reconstructed 'as-built' schedule and the extent to which the contractor's 'as-planned' performance was impacted by identifiable time impacting events.'[84]

The as-planned versus as-built method of delay analysis is typically used 'when detailed project schedule updates do not exist, or they exist but are flawed to the extent that they cannot be relied upon to support a delay analysis.'[85]

The Protocol describes the as-planned versus as-built method as a useful 'starting point in relation to other, more complex methods of analysis.'[86] American commentators would be likely to dispute this characterisation of the as-planned versus as-built method, because they generally recognise this method as more accurate than the impacted as-planned or collapsed as-built methods discussed below. With respect to use of the as-planned versus as-built method, Section 4.12 of the Protocol states that this method may be appropriate '… where an as-planned programme and an as-built programme exist or the as-planned programme was regularly updated but little information is available in relation to the network logic followed'. Although it is not entirely clear what the Protocol means by there being 'little information ...

---

81 Sections 4.3-4.8.

82 Section 4.8.

83 Bruner & O'Connor (see note 13), vol 5 at §15:132.

84 See note 83, also Baker (see note 110), who notes that the analyst uses the project documents to establish a detailed record of the as-built work, identifies and documents any revised logic from the as-planned sequence in the as-built work and determines delays 'in a sequential manner through comparative analysis of the critical as-built work to the critical as-planned work'.

85 Baker (see note 110); see also Bruner & O'Connor (see note 13), vol 5 at §15:132, who note that the as-planned versus as-built method is usually used where the CPM schedule was not updated during the course of the project.

86 Section 4.5.

available in relation to the network logic followed' notwithstanding regular schedule updates, we assume that this means that the schedule was not updated properly so as to allow the parties to use the more accurate TIA method. Nevertheless, the Protocol's statement that the as-planned versus as-built method may be appropriate where there is as-planned and as-built information, but the schedule has not been properly updated, is consistent with the US approach.

American commentators agree that the as-planned versus as-built method of retrospective delay analysis is more accurate than either the impacted as-planned or the collapsed as-built methods. The accuracy of the as-planned versus as-built method, however, depends upon the accuracy of the as-built information, as well as the accuracy of any contemporaneous schedule updates.

Method 2: impacted as-planned

The impacted as-planned method of retrospective delay analysis involves taking the contractor's as-planned baseline schedule and inserting owner or upper-tier contractor delays to demonstrate how the contractor's baseline schedule was impacted by those delays.[87] The Protocol suggests that this method may be appropriate under certain circumstances, eg where:

1. The parties' contract provides that the contractor is entitled to relief for the 'likely effect of an Employer Risk Event';[88]
2. 'there is neither a planned network programme nor as-built records'; or
3. 'there is a good as-planned network programme but it has not been updated with progress and there are no as-built records'.[89]

The Protocol does, however, recognise the flaws inherent in the impacted as-planned method:

> '… the usefulness of the ... technique is restricted due to the theoretical nature of the projected delays that are determined using this technique

87 Baker (see note 110) states: 'The impacted as-planned ... method makes use of the schedule that was created at the start of the project – the as-planned schedule. The analyst inserts delay activities into this schedule to allegedly represent the impacts to the work caused by the particular delay events. These inserted activities cause the project completion date to be extended'. See also Bruner & O'Connor (see note 13), vol 5 at §15:134 and Bramble & Callahan (see note 35) at §11.07[C]: 'The [impacted] as-planned method measures not the effect of the delay on the contractor's actual performance but rather the effect on the contractor's planned or intended performance. Under the [impacted] as-planned method, the various delays are formulated as events with time durations and added to the as-planned network schedule, without regard to when the delays may have or actually occurred'.

88 Section 4.4.

89 Sections 4.9-4.10.

and uncertainty as to the feasibility of the Contractor's as-planned programme.'[90]

American courts and commentators have almost unanimously rejected this method of performing a retrospective delay analysis.[91] As Bruner & O'Connor point out: 'it completely ignores the contractor's actual performance and all time impacts other than those selected'.[92] Its theoretical approach assumes that the entire project was constructed as originally planned – often a highly dubious assumption. In summary, 'because the 'impacted as-planned' method is a theoretical approach that overlooks actual job history, it is recognised as a legally unacceptable method of proof'.[93] In light of the almost unanimous rejection of this method by US courts and commentators, it is unlikely that, in the absence of extraordinary circumstances, any American adjudicator would accept it as appropriate.

The Protocol's suggestion that the impacted as-planned method might be appropriate in situation 1. above – where the parties' contract provides that the contractor is entitled to relief for the 'likely effect of an Employer Risk Event' – is probably inapplicable to the vast majority of US construction contracts and disputes. As noted above, US courts and commentators agree that contractors must prove a delay to the critical path to be entitled to a time extension or additional compensation. Moreover, American standard form contracts do not contain provisions allowing the contractor to recover for the 'likely effect' of an Employer-caused delay – this is a concept foreign to US courts and commentators.

Further, it is not clear from Guidance Section 4 why an impacted as-planned analysis would be appropriate in situations (b) and (c) above.[94] In such situations, US courts and commentators might well conclude that the

---

90 Section 4.6.

91 See Bruner & O'Connor (see note 13), vol 5 at §15:134. Bramble & Callahan (see note 35) comment at §11.07[C]: 'The [impacted] as-planned method has disadvantages and is generally disfavored by both practitioners and courts', a view shared by Wickwire (see note 13) at §9.06[D], Bastianelli (see note 13) at page 430 and Baker (see note 110). However, Bramble & Callahan add: '… there are limited situations in which the [impacted] as-planned method may appropriately be used … [eg] when delays occur in the project before any (or very little) actual progress has been achieved or when no actual information is available after project records have been lost, destroyed, or, more likely, cannot be re-created'. See also *Titan Pacific Corp v United States*, 17 Cl Ct 630 (Cl Ct 1989), aff'd 899 F 2d 1227 (Fed Cir 1990); *Appeal of Gulf Contracting Inc* ASBCA Nos 30195 et al, 89-2 BCA (CCH) 21,812 (1989), aff'd sub nom *Gulf Contracting Inc v United States*, 23 Cl Ct 525 (Cl Ct 1991), aff'd 972 F 2d 1353 (Fed Cir 1992).

92 Bruner & O'Connor (see note 13), vol 5 at §15:134. See also Wickwire (see note 13) at §9.06[D]: 'This approach, which purports to present a fair picture of responsibility for owner delays on the project by impacting the original CPM on the project solely with owner delays encountered during performance, suffers from one fatal flaw: It ignores what actually happened on the project, including excusable delays and delays by the contractor. Actual performance by all parties must be considered'.

93 Bruner & O'Connor (see note 13), vol 5 at §15:134.

94 Sections 4.9-4.10.

contractor simply does not have sufficient documentation to prove entitlement to a time extension, no matter what method of delay analysis is used.[95]

Similarly, the Protocol's concept of proportionality (that the assessment of the impact of delays depends upon the level of detail in the contractor's schedule and should take into account the size and complexity of the project[96]) is not accepted by American courts or commentators. Although an employer could always agree to accept something less than proof of a delay to the critical path in granting a contractor a time extension or additional compensation, it is unlikely that an adjudicator in the USA would accept anything less than proof of a delay to the critical path before granting a contractor a time extension of additional compensation.

Method 3: collapsed as-built

The collapsed as-built method of retrospective delay analysis 'begins with an as-built schedule, either contemporaneously updated during construction or reconstructed from contemporaneous records after the fact',[97] then removes from this the time impacts to critical path activities attributable to the other party. This results in a 'collapsed as-built' schedule that identifies when the project would have been completed 'but for' the delays of the other party. The Protocol suggests that it may be appropriate 'where there are good as-built records but the as-planned programme was not produced in adequate detail or not produced at all'.[98]

American courts and commentators have not unanimously rejected the collapsed as-built method.[99] Although it has the realism of being based on

---

95 See eg Bruner & O'Connor (see note 13), vol 5 at §15:120: '… liability for and relief from the consequences of time impacts are dependent entirely upon proof of causation, duration and 'control' of time impacting events. Recovery of damages by either contracting party requires proof that the other party 'controlled' a time impacting event that was the sole cause of the damages'; at §15:121 they list elements that a contractor asserting a compensable delay claim must prove and at §15:129 note the significant difficulties inherent in performing an accurate delay analysis without an as-planned baseline schedule. See also Bastianelli (see note 13) at page 428: 'To recover on a delay claim, the contractor is required to prove with 'reasonable certainty' that its operations have been delayed. More specifically, to meet this burden, contractors with few exceptions must identify the specific event causing the delay, identify the delayed activities and the specified period they were delayed, and demonstrate that the delayed activities actually delayed completion of the overall contract (that is, they extended the critical path)'. See also *Sauer Inc v. Danzig*, 224 F 3d 1340, 1345 (Fed Cir 2000); *PCL Constr Servs Inc v United States*, 47 Fed Cl 745, 801-802 (2000) and *GM Shupe Inc v United States*, 5 Cl Ct 662, 728 (1984).

96 Section 3.2.10.

97 Bruner & O'Connor (see note 13), vol 5 at §15:135. Bastianelli (see note 13) states at page 432 that the collapsed as-built method involves removing government-caused delays from the as-built schedule to show the date by which the project would have been completed if not for the government-caused delays; see also Wickwire (see note 13) at §9.06[B].

98 Sections 4.3, 4.11 and 4.13.

99 Baker (see note 110) notes that the collapsed as-built method 'gives the analyst great latitude to manipulate the analysis to produce the desired results' and 'is highly subjective because the analyst creates the as-built schedule, assigns preferential logic,

actual durations and sequences of all construction work activities, and focuses only on time impact events clearly outside the claimant's 'control', US commentators have highlighted its significant flaws, eg:

- it does not 'address the need to address the issue of time extensions on a real-time basis as required to address events on the project';[100]
- it is not 'forward looking, chronological, and cumulative';[101]
- 'to collapse the schedule, the analyst typically is forced to insert after-the-fact logic ties that may not reflect the thinking of the contractor during actual performance';[102]
- 'adjustments for anomalies in the adjusted schedule require experienced judgment that is beyond the capability of many analysts and may be subject to dispute by experienced experts';[103]
- the method is 'susceptible to manipulation through oversight of concurrent causes of delay';[104]
- it 'fails to consider the as-planned schedule upon which the contractor based its estimate for the project';[105]

Notwithstanding these significant drawbacks to the collapsed as-built method, it still may be viewed as a valid method of retrospective delay analysis.[106]

---

chooses the delay issues to address, creates a 'fragnet' to represent those issues, determines how those 'fragnets' tie-in and affect the work, and then removes the delays in some chosen sequence'.

100 Wickwire (see note 13) at §9.06[B]. See also Bruner & O'Connor (see note 13), vol 5 at §15:135.

101 Wickwire (see note 13) at §9.06[B]. Bastianelli (see note 13) notes at page 432 that the collapsed as-built method 'does not take into account the ways the contractor would have proceeded differently except for the government's delay'.

102 See note 100.

103 Wickwire (see note 13) at §9.06[B]. Bastianelli (see note 13) notes at page 432: '… limitations in the available as-built information generally require the analyst to make numerous assumptions regarding what the relationships between activities would have been absent government-caused delays. These assumptions are difficult if not impossible to verify ... and the outcome of the analysis is usually quite sensitive to the specific assumptions that have been made'.

104 Bruner & O'Connor (see note 13), vol 5 at §15:135. See also Bastianelli (see note 13) at page 432.

105 Bastianelli (see note 13) at page 432.

106 Bruner & O'Connor (see note 13), vol 5 at §15:135 note that the collapsed as-built method continues to be accepted as a valid method of measuring delay, as does Bastianelli (see note 13) at page 432 (internal citations omitted): 'The collapsed as-built method has been frequently accepted as an appropriate means of delay analysis, though it is not the preferred method today. While accepted, the collapsed as-built method is nevertheless frequently criticised for its potential inaccuracies and the opportunity for abuse of the method'. See also *Appeal of Fischbach & Moore Int'l Corp*, ASBCA No 18146, 77-1 BCA (CCH) ¶12,200 (1977); *Appeal of John Murphy Constr Co*, AGBCA No 418, 79-1 BCA (CCH) ¶13,836. But Bruner & O'Connor also say at §15:124 (citing cases): 'Where actual time impacting events are not proven or a 'contemporaneous' CPM analysis has not been performed, judicial rejection [of this method] is likely'. And at §15:135: 'Failure to account for concurrencies and to assure historical accuracy of the sequencing and duration of work activities will cause the

Nevertheless, a party planning to use the collapsed as-built method of retrospective delay analysis certainly takes the risk that its method of analysis will not be accepted and subjects its analysis to all of the significant criticisms listed above.

Method 4: time impact analysis

The final method of retrospective delay analysis addressed by the Protocol is what it refers to as the 'time impact analysis' method.[107] Section 4.8 says that this method is 'the best technique for determining the amount of EOT that a Contractor *should have been granted* at the time the Employer Risk Event occurred'. The Protocol's Retrospective TIA Method involves looking at the *anticipated effect* of a delaying event on the Contractor's plan for completing the work, based on the actual progress on the project up to the initiation of the delaying event.[108] Specifically, the Protocol's position is that, even when performing a *retrospective* delay analysis, entitlement to a time extension is to be determined *prospectively* based upon the status of the project at the time the delay occurred.[109] For example, Section 4.8 suggests:

> 'Time impact analysis is based on the effect of Delay Events on the Contractor's *intentions* for the *future* conduct of the work in the light of progress actually achieved at the time of the Delay Event.' [*emphasis added*]

Demonstrating that entitlement to a time extension should always be determined by looking prospectively, rather than at what actually occurred on the project after the initiation of the event causing the delay, Section 4.8 goes on:

> 'In this situation [ie looking at entitlement to a time extension prospectively], the amount of EOT may not precisely reflect the actual delay suffered by the Contractor. That does not mean that time impact analysis generates hypothetical results – it generates results showing entitlement.'

Further demonstrating that entitlement to a time extension should only be determined prospectively, Section 4.19 provides:

> 'in deciding entitlement to EOT, the adjudicator … should so far as is practicable put him/herself in the position of the CA *at the time the Employer Risk Event occurred*,' and 'should then determine what (if any) EOT entitlement *could or should have been recognised by the CA at the time*.' [*emphasis added*]

'collapsed as-built' analysis to be rejected'; see *Youngdale & Sons Constr Co v United States*, 27 Fed Cl 516 (1993).

107 Section 4.8.

108 Sections 4.8 and 4.19.

109 Section 4.8.

American methods of performing a retrospective TIA are generally referred to as the 'contemporaneous', 'windows', 'chronological and cumulative' or 'time impact analysis' methods, there regarded as the most accurate ways of performing a retrospective delay analysis.[110] Unfortunately, US courts and commentators have been less than precise in describing the material differences, if any, between these various methods.[111] For purposes of this paper we will define what we understand as 'the American Retrospective TIA Method' as:

> 'a real-time, after-the-fact schedule impact analysis procedure that utilises Critical Path Method (CPM) networking techniques, in conjunction with an analysis of the as-built facts related to a change or delay in the work, to determine the actual number of days of impact to the as-built critical path associated with the change or delay, taking into account the changes' or delays' time relationship to past and any other current delays.'[112]

The American Retrospective TIA Method, although performed *after the project has been completed* or the *delay has ended*, is *not* a 'hindsight' approach to analysis, but is rather a 'forward-looking,' contemporaneous type

---

110 Bruner & O'Connor (see note 13), vol 5 at §§15:130 and 15:136. Bramble & Callahan (see note 35) say at §11.07[B]: 'The best accepted method to measure the effect of a delay is the update impact method ... It has also been called the corps method, time impact analysis, contemporaneous impact, and snapshot technique'; see also Wickwire (see note 13) at §9.06[E] and [F]. Bastianelli (see note 13) says at pages 432-433: 'The time impact analysis and windows methods ... represent the current state-of-the-art method of demonstrating the effect of individual delays on the project as a whole'.); Kenneth R Baker, 'Presenting Delay Claims: Where's the Logic?', Lorman Construction Update (April 2006), downloadable from www.lorman.com/newsletters/, states that the 'contemporaneous analysis' method is usually preferred, but this requires 'project schedules that were updated regularly and reasonably accurately during the course of the project'. See also *Hennessey v United States Agency for Int'l Dev*, 121 F 3d 698, 1997 US App LEXIS 40840 (4th Cir 1997); *Appeals of Donohoe Constr Co*, ASBCA No 47310, 99-1 BCA (CCH) ¶30387 (1999); *SAE/Americon-Mid Atlantic Inc v General Servs Admin*, GSBCA Nos 12294 et al, 98-2 BCA (CCH) ¶30084 (1998); and *Appeal of Cogefar-Impresit USA Inc*, DOTBCA No 2721, 97-2 BCA (CCH) ¶29188 (1997).

111 See eg Bruner & O'Connor (see note 13), vol 5 at §15:130, who describe the 'contemporaneous' analysis method as 'based on contemporaneous records prepared at, or reasonably approximate to, the occurrence of a time impacting event', particularly a 'properly prepared and periodically updated CPM schedule'; and at §15:136 describe the 'window analysis method' as 'a detailed impact analysis of the effect of a time impacting event upon the critical path, using a 'contemporaneous' schedule, either updated during performance or after-the-fact, by viewing the 'window' of time in which an event occurred and analysing its cause and effect upon critical work activities'. Wickwire (see note 13) at §9.06[E] uses the phrase 'Chronological and Cumulative Approach/Time Impact Analysis' to describe a method similar to what Bruner & O'Connor term the 'contemporaneous' analysis method; Bastianelli (see note 13) describes at pages 432-433 the 'time impact' method as 'consider[ing] the state of the schedule both just before the start of and just after the conclusion of each delay encountered, typically relying on monthly updates', and the 'windows method' as 'us[ing] somewhat longer intervals or 'windows' of time, correlating to important interim milestones in the life of the project'.

112 Barba (see note 32), at page 11.

of analysis, because the analyst proceeds from the beginning of the project moving forward in time (on a chronological and cumulative basis) through the project day-by-day to determine the as-built critical path and the number of days of impact, if any, that the alleged delaying events may have had to the as-built critical path.[113]

The Protocol's Retrospective TIA Method differs in one critical way from the American Retrospective TIA Method: the Protocol's method does not look at as-built data after the alleged delaying event occurred, but at whether the contractor 'should have been granted' a time extension at the time the event occurred (ie at the initiation of the delaying event). By contrast, the American Retrospective TIA Method looks at actual as-built performance information and records to determine whether the alleged delaying event actually delayed the project, ie whether the alleged delaying event caused a delay to the as-built critical path. By contrast, the Protocol's Retrospective TIA Method does not take into account what actually happened on the project after the initiation of the delay event.

Although US commentators have recognised the desirability of resolving requests for time extensions as they occur during a project, current US case law will likely make it difficult for an American adjudicator to accept the Protocol's guidance to put himself or herself, 'so far as is practicable,' in the position of the person deciding entitlement to a time extension at the time the delay occurred. US courts require a contractor seeking to recover on a delay claim to prove with 'reasonable certainty' that it was delayed, which in almost all circumstances requires proof that the alleged delay actually delayed the completion of the project.[114]

Thus, in situations where the project has been completed – and the adjudicator and the parties have the benefit of the facts regarding what actually happened on a project after the occurrence of a delaying event (ie whether it actually delayed the project) – it may be impossible for a court or arbitrator to do as the Protocol recommends: to place itself in the position of the decision-maker at the time of the initiation of the delaying event and ignore what actually happened on the project. Doing so may result in awarding the contractor with a time extension or additional compensation when the alleged delaying event did not actually cause a delay to the critical path, ie delay completion of the project.[115]

---

113 See note 71.

114 See note 13.

115 The Protocol's retrospective TIA Method is arguably inconsistent with its approach to float as it relates to claims for time extensions. As described above, the Protocol's approach to float is that in the absence of an agreement between the Contractor and the Employer as to who owns the float the project owns the float, with 'the effect that float is not time for the exclusive use or benefit of either the Employer or the Contractor' (Section 1.3.6). The same section then notes that its approach 'is consistent with current judicial thinking ... that an Employer Delay has to be critical ... before an EOT will be due'. However, the Protocol's approach to retrospective TIA would allow contractors to obtain time extensions for alleged delays that may not have, in fact, turned out to be critical.

A Hong Kong case from 2004, *Leighton Contractors (Asia) Ltd v Stelux Holdings Ltd*,[116] illustrates, albeit briefly, the potential problem with the Protocol's Retrospective TIA Method. The Court of First Instance refused the contractor's application for leave to appeal from an arbitrator's award (alternatively to overturn the award and remove the arbitrator for technical misconduct). One of the grounds relied on was that the arbitrator rejected the contractor's expert's use of the Protocol's recommended approach for performing a TIA. Although the court did not reject the Protocol's approach, it did affirm the arbitrator's rejection of the contractor's expert's analysis, which 'focused on the prospect of delay resulting from an event at a given time, regardless of whether the event had actually caused delay'.[117]

Perhaps recognising the potential problem that courts and arbitrators may have with the Protocol's Retrospective TIA Method (ie not considering whether the alleged delaying event actually delayed the Project) the Protocol recommends the parties to a construction contract to agree in advance on the method to be employed for retrospective delay analyses.[118] Our research has not uncovered any case law addressing the issue of whether an adjudicator would enforce such a provision, although agreeing to use the Protocol's Retrospective TIA Method could result in the award of a time extension for an event that did not actually delay the project. Although courts generally enforce the terms of an agreement between two sophisticated parties, there are exceptions to this general rule, such as liquidated damages, 'pay-if-paid,' and 'no damages for delay' provisions, which may not be enforced under certain circumstances.

From a practical standpoint, however, any debate as to enforceability may be superfluous, because it may be too much to expect a court or adjudicator to ignore the reality of whether an alleged delaying event actually delayed the project in determining a contractor's entitlement to a time extension. Most likely, the adjudicator's decision will closely approximate, if not mirror, what actually happened after the occurrence of the delaying event. Any other result would make possible a windfall recovery for the contractor.

The Protocol's apparent approach of sacrificing a degree of accuracy in determining entitlement to time extensions by recommending that an adjudicator avoid looking at what actually happened after the occurrence of a delaying event in the interest of encouraging Employer's to deal with requests for time extensions during the course of the project, can be compared with parties to a construction contract agreeing to use a dispute resolution board to try to resolve disputes as they arise throughout the course of a project. A DRB is not designed to reach the most accurate and thorough resolution of a dispute,[119] but rather to provide a prompt recommendation for resolving the

116 *Leighton Contractors (Asia) Ltd v Stelux Holdings Ltd* (Hong Kong CFI, 2nd September 2004), downloadable from www.hklii.org/cgi-hklii/disp.pl/hk/jud/en/hkcfi/2004/HCCT000029%5f2004.html?query=%7e+leighton http://legalref.judiciary.gov.hk/lrs/common/ju/judgment.jsp.

117 See note 116 at paragraph [30].

118 Section 4.17.

119 This assertion is based upon the premise that lawyers, who may be barred from taking an active role in the proceedings before a DRB, enable parties reach the most accurate

dispute so that the project can continue to move forward. The Protocol's approach to resolving requests for time extensions can be seen as a similar compromise of accuracy and thoroughness for the arguably greater good of keeping the project moving forward.

Conclusions

In general, the Core Principles of the Protocol and the guidance it provides are consistent with current American thinking on delay and disruption claims. There is no disagreement from the US side of the pond that proper preparation and maintenance of schedules and other project records is extremely important for dealing with requests for time extensions as they arise during the course or after completion of a project, and, more importantly, for successfully completing a project. Further, the Protocol's approach to the issues of float and concurrent delay also mirrors current US thinking. Additionally, it is fair to say that courts and commentators on both sides of the pond agree that it is desirable to resolve issues of entitlement to time extensions or additional compensation for delays or disruption during the course of the project. Doing so allows the project schedule to accurately reflect the status of the project, which allows the contractor to effectively manage the project.

Despite these substantial similarities, US construction professionals, courts and commentators would have a hard time adopting the Protocol's view that in deciding entitlement to a time extension the adjudicator should, to the extent possible, put himself or herself in the position of the CA at the time the alleged delaying event 'occurred' and ignore whether the alleged delaying event actually delayed the project. Nevertheless, there may be other mechanisms that the SCL could consider to achieve the goal of encouraging owners to decide or grant requests for time extensions prior to or at the same time as the alleged delaying event. For example, parties could insert one of the following provisions into their contract:

> If the employer fails to consider and respond to a contractor's properly prepared TIA in a timely way, then –
>
> (a) there will be a rebuttable presumption that the contractor is entitled to the time extension in any after-the-fact adjudication; *or*
>
> (b) the employer must pay for the cost to the contractor of preparing an after-the-fact analysis in any after-the-fact adjudication.

Two of the most popular US standard form contracts include provisions that arguably discourage owners from waiting until the end of a project to determine whether a contractor is entitled to a time extension or additional compensation as a result of an owner-directed change. These require the owner to pay half of the contractor's estimated cost of the proposed change,

---

and thorough resolution of their dispute. Some outside the profession may dispute our premise, but it is safe to say that lawyers do ferret out the facts – albeit at a significant cost.

with the parties reserving their rights as to whether and to what extent the contractor is entitled to a time extension or additional compensation.[120] Although the provisions in these contracts deal only with the issue of the increased cost, if any, of the owner-directed change, owners and contractors could extend these provisions to apply to a claimed EOT as well. Further, the same two major standard forms contain provisions requiring the owner and contractor to negotiate in good faith and as expeditiously as possible contractor requests for time extensions or increased costs, if any, resulting from owner-directed changes.[121]

In conclusion, the Protocol certainly advocates a unique and innovative approach for avoiding the much too common problem of owners and upper-tier contractors waiting until the end of a project, or at least the end of a delay, before deciding whether the contractor is entitled to a time extension or additional compensation as a result of the delay. In our opinion, however, American adjudicators would have a difficult time adopting the Protocol's approach in full, because of the emphasis American courts and commentators put on the requirement that contractors prove that a delaying event actually delayed the project before becoming entitled to a time extension or compensation.

Richard H Lowe is a partner at Duane Morris LLP in Philadelphia, PA,
Evans M Barba is the Chairman and CEO of Barba Consulting, Inc in Marlton, NJ and
Gregory B Lare is an associate at Duane Morris LLP in Philadelphia, PA.

120 See AGC 200 (see note 31) at ¶8.2.2 and DBIA Document No 535 (see note 31) at §9.4.3.

121 See AGC 200 (see note 31) at ¶¶ 8.1.2 and 8.2.2 and DBIA Document No 535 (see note 31) at §9.2.2.

'The object of the Society
is to promote the study and understanding of
construction law amongst all those involved
in the construction industry'

MEMBERSHIP/ADMINISTRATION ENQUIRIES
Jackie Morris
67 Newbury Street
Wantage, Oxon OX12 8DJ
Tel: 01235 770606
Fax: 01235 770580
E-mail: admin@scl.org.uk

Website: www.scl.org.uk