

ANDREW E. WHITE
Director

navigant.com

About Navigant

Navigant Consulting, Inc. (NYSE: NCI) is a specialized, global professional services firm that helps clients take control of their future. Navigant's professionals apply deep industry knowledge, substantive technical expertise, and an enterprising approach to help clients build, manage and/or protect their business interests. With a focus on markets and clients facing transformational change and significant regulatory or legal pressures, the Firm primarily serves clients in the healthcare, energy and financial services industries. Across a range of advisory, consulting, outsourcing, and technology/analytics services, Navigant's practitioners bring sharp insight that pinpoints opportunities and delivers powerful results. More information about Navigant can be found at navigant.com

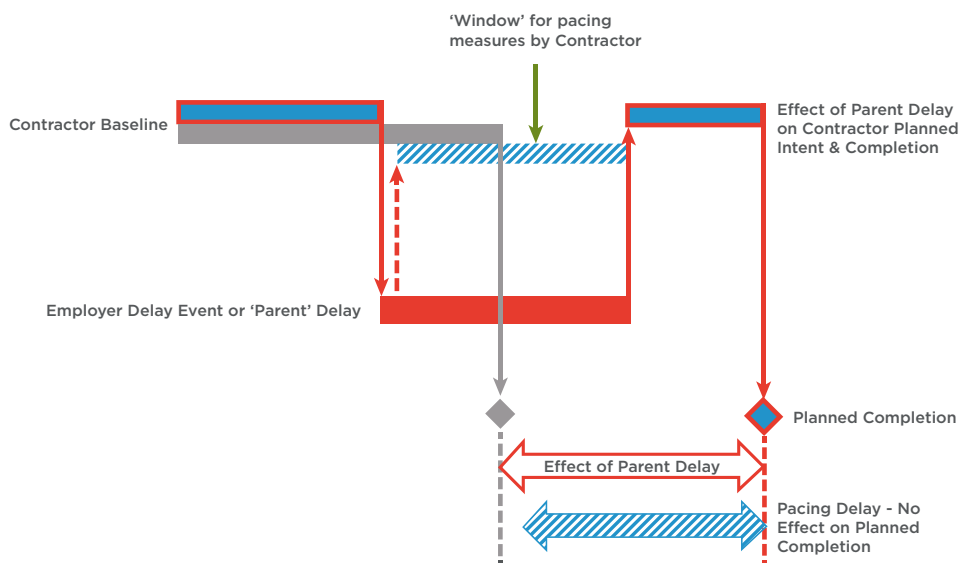
PACING - 'WHY HURRY UP AND WAIT'

'Why hurry up and wait?' is sometimes used to summarize pacing. However, this only serves to demonstrate and perpetuate misunderstanding around the principle of pacing and Contractor entitlement. Perhaps a more appropriate description of the risks to a successful demonstration of pacing can be provided by Parkinson's Law (i.e. *'work expands so as to fill the time available for its completion'*).

In the event of Contractor pacing, the Contractor reduces its rate of progress or 'relaxes' its performance of the Works to 'pace' the Employer delay event, **but only to the extent that the pacing delay does not delay the planned completion of the Works**. The act of pacing is a reaction to an Employer delay, but crucially, the effect of the Employer delay event remains the operative cause of delay, or put another way, the Contractor pacing delay consumes float created by the Employer delay, sometimes referred to as the 'parent' delay.

However, the pacing of delay is not an act restricted to the Contractor. We are all probably familiar with the situation of drawings or design information being issued later than originally planned, but on analysis of actual events, did not cause delay to the progress of the works, given intervening Contractor delay events. However, the term 'pacing' tends not to be applied to this situation. Pacing is generally seen as a Contractor defence to

Figure 1. Effect of Pacing Delay



Employer allegations that it failed to progress¹ the Works during the currency of an Employer delay and, consequently, this has reduced or negated Contractor entitlement to an extension of time request.

Consequently, most pacing defenses are presented retrospectively, many months or even years after the event.

PACING PRINCIPLES

Certain judicial tests have evolved across different jurisdictions to validate pacing arguments, such as:

- a. The Employer (parent) delay event caused critical delay to the progress and completion of the Works i.e. the parent delay caused float to occur within the paced activities.
- b. Evidence of knowledge, and consequently, a reaction by the Contractor in implementing pacing measures against the parent delay. This raises the issue of knowledge or ability to forecast the period of the parent delay (cause) and consequently a reasonable assessment of the effect, to allow pacing measures to be proportionate and realistic in the circumstances.
- c. Notice by the Contractor of its intention to pace but not further delay the Works;
- d. Demonstration that the Contractor would in any event, have completed the paced activity in accordance with its baseline intent, or at the very least, earlier than the pacing measures would have achieved, in order to establish the net effect of the parent delay absent Contractor pacing measures; and

- e. The alleged pacing did not cause further delay to the completion of the Works and in the event of the Employer mitigating the parent delay, the Contractor resumed baseline productivity (i.e. the pacing measures were suspended and did not become a cause of critical delay).

PACING, CONCURRENCY AND CONCURRENT DELAY

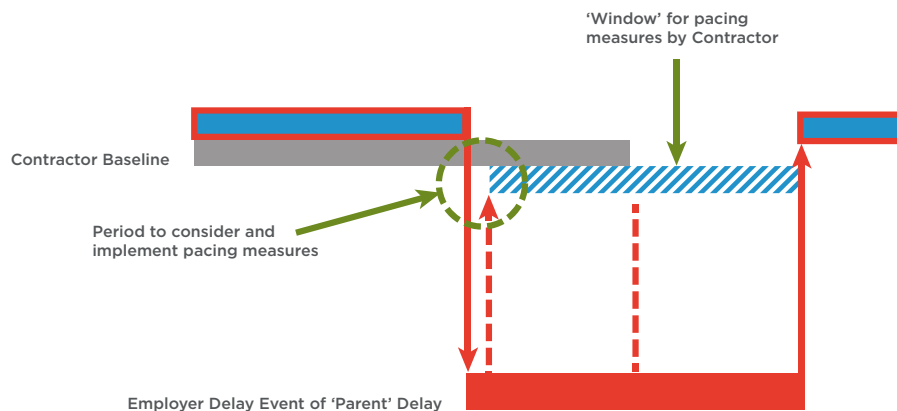
The term 'concurrent delay' is often used interchangeably with pacing, has a number of definitions and consequently, is equally subject to misunderstanding. Below are two definitions of concurrent delay:

*'...a period of project overrun which is caused by two or more effective causes of delay which are of approximately equal causative potency.'*²

*'Where the Contractor Delay to Completion occurs or has effect concurrently with Employer Delay to Completion.....is the occurrence of two or more delay events at the same time, one an Employer Risk Event, the other a Contractor Risk Event, and the effects of which are felt at the same time'*³ [emphasis added]

Generally, a period of time will be required to implement pacing measures (i.e., react to the parent delay). It is therefore unlikely that a pacing delay will represent a concurrent delay. However, a pacing delay will occur within the concurrency of the parent delay.

Figure 2. Time Necessary To Consider Pacing a Parent Delay



1. For example, FIDIC Conditions of Contract for Construction 1999 'Red Book' '...proceed with the Works with due expedition and without delay.' [Sub-Clause 8.1] '...the Contractor shall proceed in accordance with the programme...' [Sub Clause 8.3]

2. 'Concurrent Delay' 2002 and 'Concurrent Delay Revisited' 2012, John Marrin QC

3. Society of Construction Law - Delay and Disruption Protocol 2002, UK

NOTICES AND RECORDS

Under most standard forms of contract, the Contractor has an obligation to proceed with the Works without delay and/or in accordance with the programme.⁴ Therefore, in the event of the Contractor planning to pace the Works as a reaction to an Employer delay event, a notice should be issued given that it effectively plans to delay its progress and not to proceed in accordance with the programme (albeit without causing further critical delay) whilst protecting entitlement to an extension of time absent the pacing measures.

The question of the nature, content and sufficiency of any Contractor notice to pace is beyond the scope of this article, but records may be available to demonstrate actual pacing measures, through the Contractor discharging its obligations under the contract. For example under FIDIC;⁵

a. Sub-Clause 8.3 - Programme Revisions

- i. *'The Contractor...shall submit a revised programme whenever the previous programme **is inconsistent with actual progress or with the Contractor's obligations.....***
- ii. *'Unless the Engineer, within 21 days after receiving a programme, gives notice to the Contractor stating the extent to which it does not comply with the Contract, **the Contractor shall proceed in accordance with the programme, subject to his other obligations under the Contract...***
- iii. *'... The Engineer may require the Contractor or submit an estimate of the anticipated effect of the future event or circumstances, and / or a proposal under **Sub-Clause 13.3' [Variation Procedure].***

b. Sub-Clause 4.21 - Progress Reports *'...monthly progress reports shall be prepared by the Contractor and submitted to the Engineer.....Each report shall include...list of notices given under...Sub-Clause 20.1 [Contractor's Claims]..... **comparisons of actual and planned progress....***

- c. **Sub-Clause 6.10 - Records of Contractor's Personnel and Equipment** *'The Contractor shall submit, to the Engineer, details showing the number of each class of Contractor's Personnel and of each type of Contractor's Equipment on the Site.....'*
- d. **Sub-Clause 13.3 - Variation Procedure** *'If the Engineer requests a proposal....the Contractor shall respond in writing... by submitting;*
 - i. *a description of the proposed work to be performed **and a programme for its execution;***
 - ii. ***the Contractors proposal for any necessary modifications to the programme according to Sub-Clause 8.3 [Programme] and to the Time for Completion....'***
- d. **Sub-Clause 20.1 - Contractor's Claims'***.....The Contractor shall keep such contemporary records as may be necessary to substantiate any claim.....'*

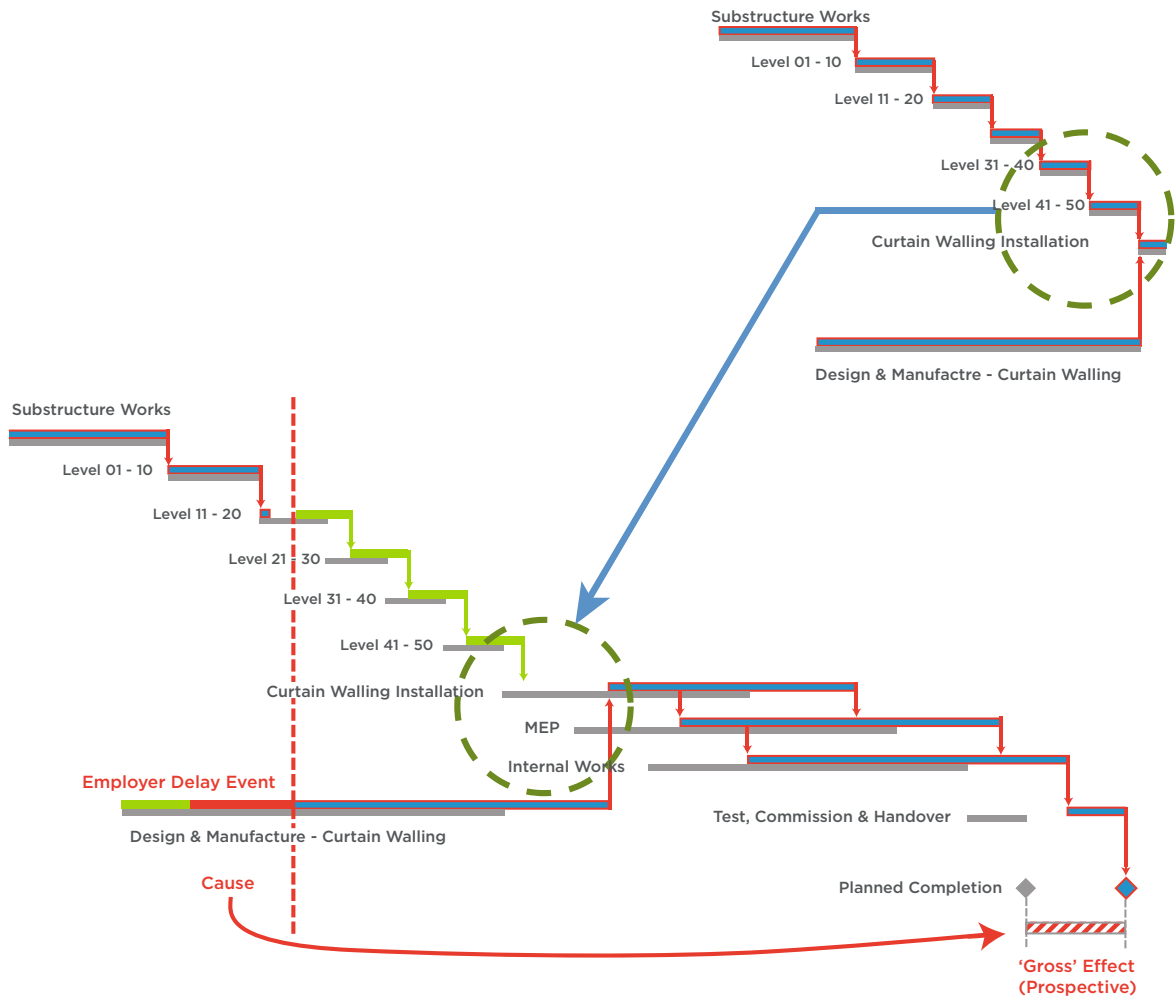
However, in discharging these obligations, as with all planning and programming matters, the depth and quality of information provided will be crucial. Unfortunately, the monitoring of progress and its effect(s), can often be focused on critical delay with the implications of non-critical or out of sequence working, which by definition could include pacing, being overlooked.

Crucially, the Contractor needs to demonstrate an intention to pace, in reaction to an Employer (parent) delay event and the actual effect of pacing measures (i.e., the Contractor did not fall behind programme and consume float created by the Employer delay event) as a consequence of delay for which it is culpable. Put another way, is it reasonable for the Contractor to be entitled to an extension of time and relief from damages absent the alleged pacing measures?

4. FIDIC Conditions of Contract for Construction 1999 'Red Book' [Sub-Clause 8.1 & 8.3]

5. FIDIC Conditions of Contract for Construction 1999 'Red Book'

Figure 3. Employer Delay Event



CASE STUDY - HOW DOES PACING WORK IN REALITY?

The following scenario is hypothetical and designed for discussion and does not seek to present a definitive conclusion, but if we take the construction of a 50 floor tower and delay incurred in the design of the curtain walling caused by Employer changes.

The delay to the design of the curtain walling delayed the planned start of installation on site and consequently, the completion of the Works. In the intervening period, progress to the reinforced concrete (“R.C.”) frame incurred delay to the extent that when the curtain walling installation commenced on site, the Contractor had only just completed the construction of the R.C. frame in accordance with the original planned sequence.

Notwithstanding any notice of an intention to pace, issues to consider in demonstrating pacing in this instance would include;

- Employer Delay Event; what is a reasonable assessment of delay to the progress and completion of the Works? Figure 3 illustrates the extent and duration of the Employer Delay Event.
- Evidence and records of the introduction of pacing measures by the Contractor to the R.C. frame construction such that the period of float created by the curtain walling delay was reduced or completely consumed. This may include changes to resources such as labour, management, supervision and work shift hours and working days.

- c. When would the Contractor have completed the reinforced concrete frame construction absent the alleged pacing measures? That is, what is the feasibility of the original planned intent considering issues such as;
- Planned and actual resources;
 - Working calendars (holiday periods, work shift hours and working days)
 - Seasonal constraints;
 - Month of Ramadan;
 - Initial learning curve; and
 - Actual productivity prior to implementation of alleged pacing measures.

In this instance, the Contractor has demonstrated the effect of the parent employer delay on the remaining critical path and, in particular, the float created in the previously critical activity of the concrete frame construction, as shown in Figure 3. The initial analysis of alleged pacing would therefore focus on the period of the alleged parent delay together with the immediate succeeding and preceding periods to identify actual pacing measures.

- d. Demonstration that the alleged pacing measures did not cause any further delay to the completion of the Works (i.e., did not delay the start of the curtain walling installation) as shown in Figure 4.

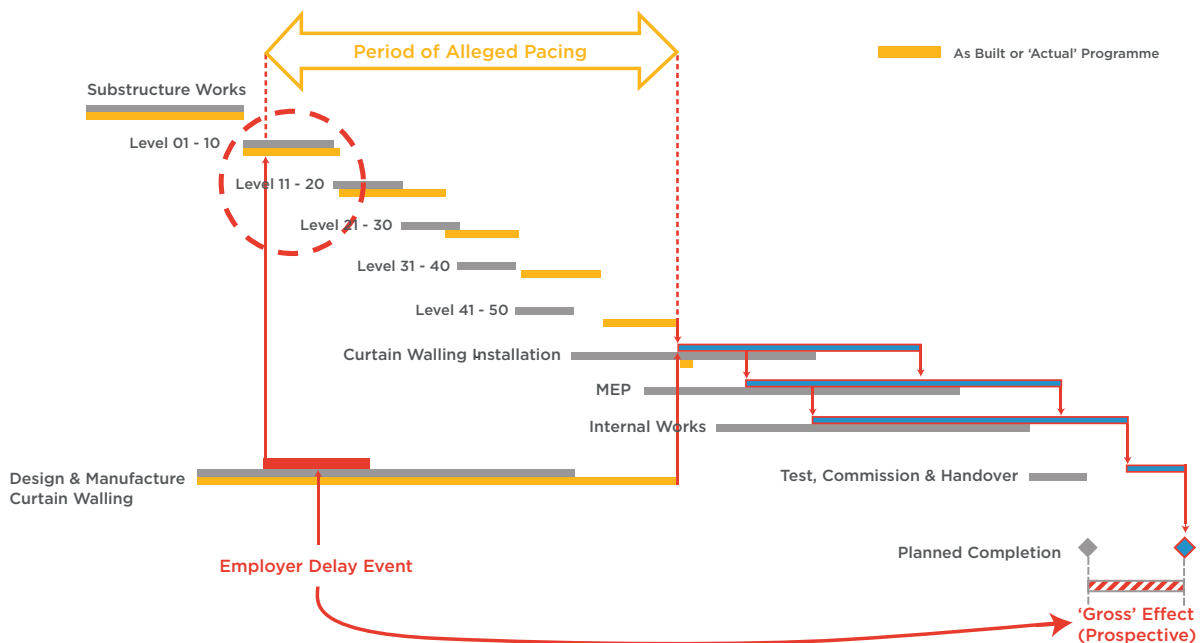
MISTAKEN IDENTITY AND REALITY?

After a thorough examination, it is not unusual for what would initially appear to be a substantial Employer delay event, to actually be a series of discrete Employer delay events and potentially, a series of discrete Contractor pacing actions.

Given a reasonable period to consider and implement measures, and the practical considerations of sustaining pacing measures, pacing is more likely to be associated with medium to long term delay events. This is true especially where the effect of the delay can be reasonably forecast such that the Contractor can implement pacing within a defined 'window' of time.

Post Employer delay event, progress may succumb to the principles of Parkinson's Law, 'work expands so as to fill the time available for its completion' (i.e., delay is incurred on activities that have become non-critical due to the effect of the critical Employer delay, but the Contractor fails to undertake any corrective action in the knowledge that the revised planned completion date is not in jeopardy, despite the delay to the non-critical activities). This circumstance fails to meet the pacing test because of the absence of a notice to pace and actual pacing measures (i.e., the Contractor incurred delay in the course of progress caused by delay events for which it is culpable). An example of this could be an unfeasible programme and/or poor management and execution of the Works.

Figure 4. Employer Delay Event And "Gross Effect"



FINAL THOUGHTS

The retrospective nature of pacing disputes highlights the need for the Contractor to implement and maintain good practices in project time controls throughout the currency of the works. By doing so, this allows the effects of progress and change to be assessed, the programme revised and corrective and/or pacing actions to be implemented contemporaneously.

For a Contractor to protect its entitlement to an extension of time absent pacing measures, the likely effect of the parent delay needs to be assessed in the first instance, allowing the Contractor to consider, notify and then implement pacing measures across a discrete period of time and during a particular period of delay.

Therefore, to end where we started, 'Why hurry up and wait?' suggests that the Contractor is already in culpable delay and is effectively considering acceleration measures to achieve its baseline plan whereas Parkinson's Law, 'Work expands so as to fill the time available for its completion' provides a more realistic description of the circumstances and risks to the successful demonstration of pacing.

ABOUT THE AUTHOR

Andrew White is a Director in Navigant's Global Construction Practice and is based in Doha, Qatar. He is experienced in both the preparation and defence of claims and has been appointed as an Expert for both Employer and Contractor organisations in delay analysis, construction methodologies, project resourcing, and site logistics and has given evidence in report form and under cross examination. Prior to his career in consulting, he spent more than 25 years working for major contractor organisations in various roles from site engineer through projects director, responsible for the commercial, project management and planning function on projects across a variety of industry sectors from inception and feasibility stages through tender, construction and project handover. This includes considerable experience in the management of design and construction contracts and project time controls.