

Avoiding hammer blows to programming analysis in delay disputes

William Kerr
HKA

Jeremie Witt
CMS Law

Samuel McCarthy
Barrister

Petrina Macpherson
MinterEllison

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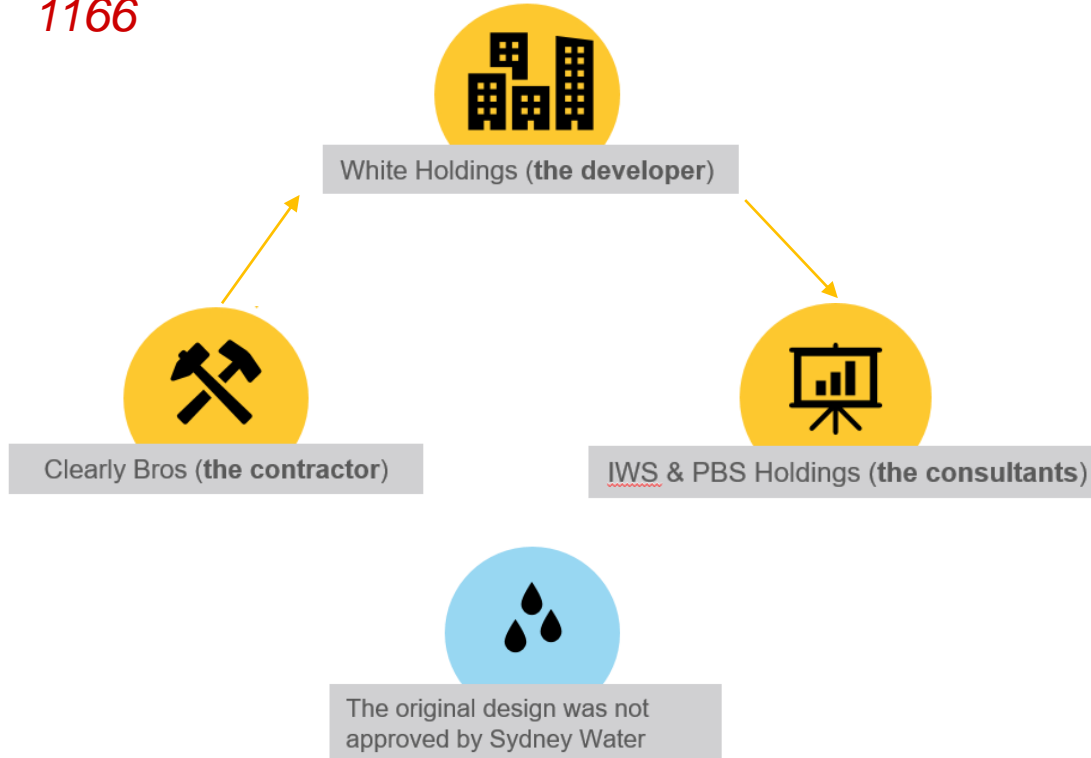
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Agenda for today

- Overview: *White Constructions Pty Ltd v PBS Holdings Pty Ltd [2019] NSWSC 1166*
- Preparation of reliable delay analysis – William Kerr
- Key considerations in getting the best delay expert report - Jeremie Witt
- Cross examination of delay experts – Sam McCarthy
- Questions and discussion

White Constructions Pty Ltd v PBS Holdings Pty Ltd [2019] NSWSC 1166



- 100 lot subdivision – uneven topography and hard rock surface
- Consultant engaged to prepare sewer design
- Original sewer design not accepted by Sydney Water
- Contractor made a delay claim due to delay in approval of the sewer design
- Developer sued Consultant for breach of contract



Key issues before Hammerschlag J.

- Would the project have been completed but for the delay associated with the sewerage design?
- Did White suffer a loss as a result of that delay?
- Which method of delay analysis was appropriate for this case?
- Fact versus opinion?



20/08/2020

Preparation of reliable delay analysis

William Kerr
Principal



Delay analysis – mathematical exercise or dark art?

Delay analysis is a logical process that seeks to determine the incidence and extent of delay

- It is often confused by:
 - Jargon
 - The number of different methods with different terminology used to describe them

Delay analysis can fail when:

- The relationship between cause and effect is irrational or not explained
- The conclusions reached are inconsistent with what actually transpired

Key Lessons

[White Constructions Pty Ltd v PBS Holdings Pty Ltd [2019] NSWSC 1166]

- Method selection and execution
- Difficulty understanding programming expert reports
- Approach to factual causes of delay

Methods Selection – Factors

Factors that influence delay analysis method selection:



The contract



Time constraints



Quality and availability of project records and programs



Appropriate and logical choice

White Constructions Pty Ltd v PBS Holdings Pty Ltd at [195]:

“Mr [REDACTED] opinion, upon which I propose to act, is that neither method is appropriate to be adopted in this case.”

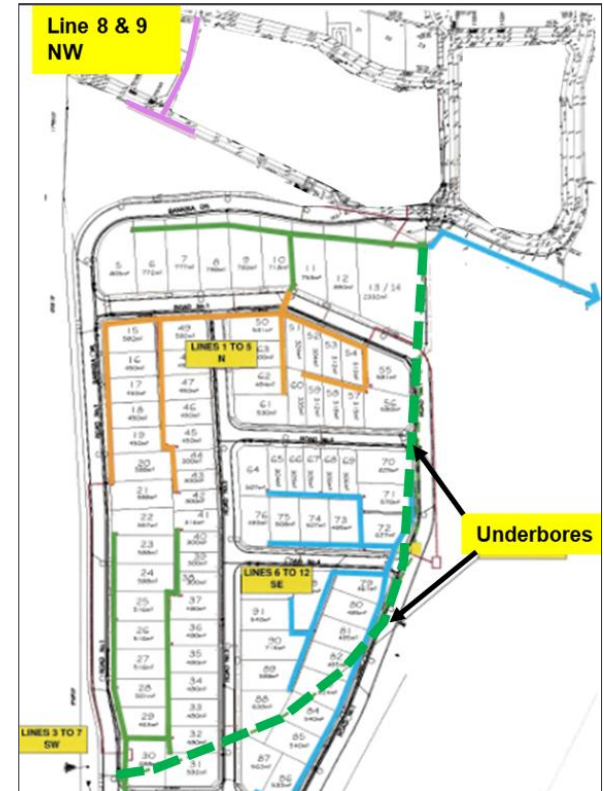
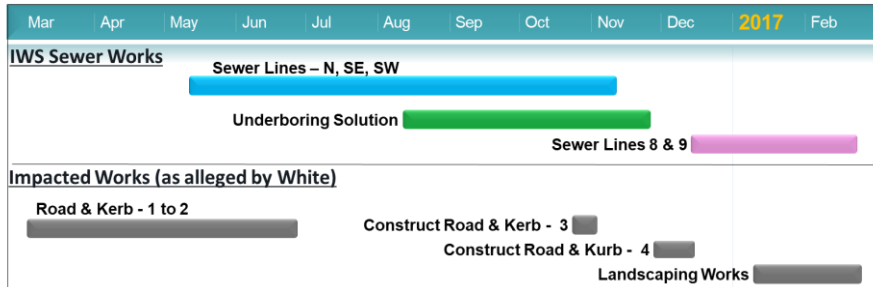
Methods Selection – the questions they ask

Some of the methods may seek answers to different questions...

Method	Analysis Type	Question(s) Asked
Time Impact Analysis	Cause and Effect	“Assess the likely impact to completion adjudged at the time of the event started?”
Windows Analysis (Time slice or As-planned vs. as built)	Effect and Cause	“Assess the actual critical path to completion viewed contemporaneously throughout the works? What were the actual causes of delay?”
Collapsed As-Built Analysis	Cause and Effect	“But for the claimed event(s) what would be the actual completion date?”

White Constructions v PBS Holdings – common sense approach

- White alleged that the late approval of the underbore solution disrupted its works
- Hammerschlag J – *The only appropriate method is to determine the matter by paying close attention to the facts, and assessing whether White has proved, on the probabilities, that delay in the underboring solution delayed the project as a whole and, if so, by how much.* [197]



White Constructions v PBS Holdings – problem with records

White sought to rely on the affidavit evidence - difficulty is this evidence was couched in generalities

202 White sought to rely on the affidavit evidence of Mr Joel Carter, who worked as the site foreman and supervisor for Cleary Bros. He gave evidence about delays and disruptions to the works due to the delay in the sewer approval. He described the works as “delayed, piecemeal and disrupted”. The difficulty is that his evidence is couched in generalities such as:

- The works were not carried out in the sort of continuous manner that, in my experience, is usual for a subdivision. Rather Cleary Bros was required to do the most work it could on any given day and in response to available work fronts. It was the availability of work fronts which drove where work was carried out on any given day and determined the number and type of crews used. Therefore while the work was “more or less continuous” in the sense that on most days works were conducted, the works were not carried out in the same manner and with the same amount of people as I would have liked to have carried them out in if I was not restricted by the availability of work fronts.

- The electrical and NBN subcontractor, Transelect, was not able to complete its works in an efficient manner.

White Constructions v PBS Holdings – problem with records

Although the diaries were comprehensive and well kept they were insufficient for proving causation

- Focus was on the activities happening on site not particular consequences of the issues
- E.g. “Waiting for sewer design to be approved...” [212] does not identify the adversely affected activities

Court was not directed to much of the “raw data”

- Inference was because there is limited evidence for the claimed events
- Examination of the diaries reveals claimed activities was adversely affected by causes not favourable to White’s case

Project records: considerations



- Things to consider:
 - Which evidence proves the program activities are complete?
 - How is the rate of progress measured on each activity?
 - If “disruption” occurs, what is the measure of productivity loss compared to the plan?
 - What are the causes of an event and which program activities have been affected?

What is a good site daily record?

Document activities happening...

Contractor Progress Reporting & Planning Specification

DAILY ACTIVITY REPORT

Contract #: _____ Date: _____
Contractor: _____ Shift: Day

Weather: Fine Rain (Heavy Rain)
 Wind

Works undertaken

Plant – Hours worked, downtime, maintenance, internal movements

Material – Quantities delivered & installed

Labour – Hours worked & downtime, work locations & activities performed

Weather – Trade specific impacts of inclement weather

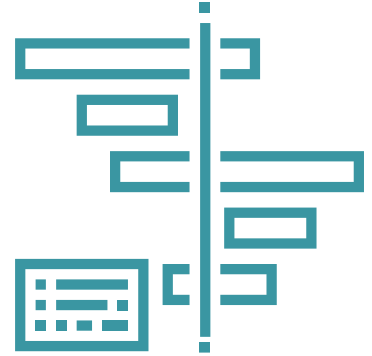
Progress – Scheduled work complete or not - if not, why not?

Relevant Photos – date/time stamped include description of the location & context

- Advances in project controls mean that a integrated searchable database of records is possible
- Advances in Building Information Modelling (BIM) and 3d scanning may alleviate issues in capturing of activities & delay events
- The focus should be on documenting the causes of delay and disruptive events and their consequences

Programs – what is good practice?

- Program should reflect all scope of works per the contract
- Activities should be logic linked to reflect sustainable interdependencies
- Apply the resources to activities
- Ensure the critical sequences and and total float are understood by the project team
- Ensure the calendar reflects the non work periods
- Allowance for contingencies e.g. inclement weather
- Identify the key Client deliverables and review periods
- As-built programmes should be supported with evidence for the dates relied on
 - E.g. inspection and/test records, site diaries, photos



In closing

- There are many variations on the methods, but it's very risky going away from a recognised method of analysis
- Be cautious with proceeding with a mechanical analysis that has no basis in fact... You only get one shot
- Program analysis can be useful for assessing the effect of a delay but must ensure accuracy and objectivity
- The causal link between delaying events and their consequences had to be proved based on the “raw data” and not solely on programming analysis
- Key ingredients of any reliable delay analysis are the “raw data” in the project records

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William Kerr
williamkerr@hka.com
0437 438 449

HKA.COM

Key considerations in getting the best delay expert's report for the client

Jeremie Witt
July 2020



Selecting your expert

- Choice of expert can make/break your client's case; picking the right one is critical.
- Key issues to be considered in selecting a delay expert include:
 - Conflicts (actual, perceived and potential)
 - Expertise/experience
 - Recent performance
 - History with the project, parties and decision maker
 - How the expert performs under pressure

Briefing the expert

- What is the expert being asked to opine on?
- What analysis (if any) has been done already?
- What evidence/records are available?
- What does the contract require (if anything) in relation to delay analysis?

SCL Protocol / Methodology

- The “correct” methodology to use is impacted by a number of technical and practical considerations, but given some recent case law it’s worth considering what the courts have had to say on both the SCL Protocol and the choice of delay analysis methodology.
 - *Alstom v Yokagawa Australia (No 7)* [2012] SASC 49
 - *White Constructions Pty Ltd v PBS Holdings Pty Ltd* [2019] NSWSC 1166

Alstom v Yokogawa Australia (No 7)

- [2012] SASC 49
- Bleby J's comments in this case have often been misconstrued.
 - e.g. I have heard it suggested that this case somehow elevated the SCL Protocol and gave it some special legal standing in the Australian courts. That is clearly not the case, and is not a view that the SCL has encouraged.
 - Bleby J's findings are in fact consistent with Hammerschlag J's judgment in *White Constructions Pty Ltd v PBS Holdings Pty Ltd*.

Alstom v Yokogawa Australia (No 7)

- The “Resource Analysis” methodology relied on by Alstom’s delay expert for Mechanical Completion was rejected not because it was not referred to in the SCL Protocol, but because (amongst other reasons) Bleby J held at [1282]:

The first problem with this method is that it is not an accepted method of delay analysis for construction programming practitioners. Mr ██████ had never encountered this particular method before. It is not mentioned in the Protocol as a recognised method of delay analysis. Mr ██████ also agreed that this method, to the best of his recollection, was not mentioned in the text *Delay and Disruption in Construction Contracts* by Keith Pickavance, which Mr ██████ himself described as the most comprehensive work on the subject of which he is aware, and an extract from which was relied on by Alstom for other purposes. Nor was Mr ██████ aware of any documented reference to this particular method in any other text on construction law. It seems to have been a creature of ██████ alone. I am satisfied that the Resource Analysis method is not a method recognised within the engineering profession. It should be rejected for that reason alone.

Alstom v Yokogawa Australia (No 7)

- Bleby J's judgment also took issue with the methodology used by Alstom's expert because it was divorced from the facts.

At [1285]:

No allowance was made by Mr [REDACTED] for the slippage of Alstom's mechanical work against the March 2002 program. His As-planned graph for mechanical work shows completion by July 2003. The graph for actual completion of mechanical work is shown as being completed in December 2003 with no explanation as to the reason. Yet Mr [REDACTED] assumes that on the basis that the YDRML work has slipped when compared with the March 2002 program then this must be the fault of YDRML. The Resource Analysis method simply does not demonstrate any cause and effect. It assumes that because there has been a shift in the planned work, that is solely the fault of YDRML, without giving any consideration to the fact that YDRML was reliant on Alstom for the progress of much of its work.

Similarly, at [1287]:

These demonstrated the fundamental flaw in the assumption under which Mr [REDACTED] was operating, namely that YDRML was delayed solely due to YDRML's failure. Mr [REDACTED] bar charts were not used as planning instruments but only as a graphic means of demonstrating the shortcomings of Mr [REDACTED] method and as a means of demonstrating actual delay based on contemporaneous records where it was agreed that Alstom's programs could not be used for constructing a critical path.

White Constructions Pty Ltd v PBS Holdings Pty Ltd

- Hammerschlag J's judgment does not render the SCL Protocol, or any form of delay analysis methodology inutile.
- It simply means that analysis on a methodology referred to in the SCL Protocol is not enough, of itself, to establish that methodology is suitable in the circumstances.

The factual evidence in the proceeding needs to support the delay case advanced – a methodology alone cannot plug that gap. At [194]:

In this regard, I think that one of the logical flaws in [REDACTED] approach is that it assumes causation rather than identifies actual evidence of it.

- And at [200] – [201]:

[REDACTED] aptly commented that his report does not purport to prove facts. It does not.

This case demonstrates the importance of paying close attention to the actual facts rather than opinions about what the evidence establishes.

White Constructions Pty Ltd v PBS Holdings Pty Ltd

- Hammerschlag J’s judgment acted on the opinion of the court-appointed expert that:

“for the purpose of any particular case, the fact that a method appears in the Protocol does not give it any standing, and the fact that a method, which is otherwise logical or rational, but does not appear in the Protocol, does not deny it standing.”

- Like all judgments, this one needs to be considered in light of the factual background. Here, the experts could not agree on an appropriate methodology and the impression gained from the judgment is that the court felt they were advancing methodology at the expense of evidence.
- Considered together with Bleby J’s judgment, no particular methodology should be seen as being endorsed by the courts, but where a method is novel or does not have widespread acceptance then use it at your peril.

Use of Assistants / Draft Reports

- Although rules vary by jurisdiction, carefully consider the risk of criticism/rejection of a report if a judge/tribunal forms the view that the work done is not really that of the expert.
- This doesn't preclude the use of assistants, but the report must be that of the expert. In *Alstom* (at [1263]) Bleby J expressed concern that much of the report of Alstom's delay expert was written by assistants who did not give evidence and that one of these actually performed all of the analyses and the review of delays in the appendices.
- Again, while jurisdiction specific, also be very careful about any obligation to disclose drafts of expert reports or reports not relied upon – e.g. *Murphy & Ors v Gladstone Ports Corporation Ltd* [2019] QSC 12, UCPR 212(2)

Jeremie Witt

E: jeremie.witt@cms-cmno.com

T: +61 7 3184 9111

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Cross Examination of Delay Experts

Samuel McCarthy

>> Function of experts

- Opinion evidence: bridge between primary facts and conclusion which cannot be reached without application of expertise

Dasreef Pty Ltd v Hawchar (2011) 243 CLR 588

- Criteria for assessing reliability of the evidence to ensure integrity of adversarial process

Dasreef v Hawchar (2011) 243 CLR 588, 609 – 611

- Facts upon which opinion are based, and intellectual process of reasoning leading from fact to conclusion must be explicit and intelligible to enable critical evaluation of conclusions

Makita v Sprowles (2001) 52 NSWLR 705 at [85]

>> Cross Examination of Experts

Usual Object

- Use of forensic techniques to affect the reliability of the expert's opinions

Possible Object

- Establish witness is not properly an expert, or not a witness of credit

>> **Undermining the reliability of the expert's conclusions**

- Factual premises?
- Process of reasoning?

>> Factual premises

- The factual causes of delay are likely to be critically important.
- *White Constructions Pty Ltd v PBS Holdings Pty Ltd* [2019] NSWSC 1166 at [196]:

“...close consideration and examination of the actual evidence of what was happening on the ground will reveal if the delay in approving the sewerage design actually played a role in delaying the project and, if so, how and by how much.”

>> Factual Premises

- Effectively undermining the factual premises
- Establishing the critical facts relied upon by the expert
- How would the expert's opinion change if contrary facts were assumed?
- Proving the contrary facts

>> Factual Premises – CMC WICET at [248(a)]

[248] For the reasons set out in paragraphs [365] – [384] of CMC’s closing submissions I do not accept and cannot rely on Mr ██████ analysis. The flaws in Mr ██████ analysis may be summarised as follows:

- (a) a significant number of factual assumptions made by Mr ██████ about the Contract Works are inconsistent with what actually occurred on-Site as demonstrated by the evidence in particular of Mr Vance, Mr Grey and Mr Barry, whose evidence I generally accept. Mr ██████, for example, adjusts the Baseline Program by allowing an extra 21 calendar days for the construction of the haul road. This is because Mr ██████ asserts the Baseline Program did not include an activity for the construction of the haul road. Mr ██████’s assumption is not correct. Mr Vance’s evidence was that the construction of the haul road was provided for in activity 4RCL-1005.³⁵⁸ Mr ██████ assumes that the construction of the bunds would not have commenced before 24 November 2011. Mr Vance’s evidence, which I accept, was that CMC intended to commence construction of the Reclamation C Bunds by 14 October 2011. Further adjustment is made by Mr ██████ to the Baseline Program on the basis that CMC never planned to achieve the productivity used in the Baseline Program. He asserts that CMC only ever planned to achieve the lower levels of productivity recorded in its target production charts provided with its



Factual Premises – CMC WICET at [248(a)]

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>> Process of Reasoning

- Need for caution
- Identifying defects in logic or errors
- Do facts reveal as important necessary limitations of the delay technique used – some examples:

Impacted as planned analysis

- Is the baseline an appropriate basis for analysis – is it reasonable and logical. Are there changes to the actual progress / original planned intent material to the dispute? (Society of Construction Law Delay and Disruption Protocol at 11.6(a)).

Time impacted analysis

- Is mitigation or acceleration already incorporated into the program analysed so as to distort the project impact of delay? (Society of Construction Law Delay and Disruption Protocol at 11.6)

Retrospective longest path analysis

- Are switches in the critical path during the course of the works likely to affect the analysis? (Society of Construction Law Delay and Disruption Protocol fat 11.6(e))

>> Process of reasoning - *CMC v WICET* at [695]

[695] To the opposite effect Mr ██████ was unable to provide to the Court any rational explanation why he used programs, although more contemporaneous, which had in-built delay. This is demonstrated by the following exchange I had with ██████ in the course of the concurrent evidence:

“HIS HONOUR: Can I actually ask you, Mr ██████ that’s simply not making sense to me ...

MR ██████: Okay.

HIS HONOUR: ... because I know from the lay evidence that there was a considerably delay in obtaining the necessary waterway barrier permit. I know that as a fact.

MR ██████: Yep.

HIS HONOUR: There’s a lot of evidence on that. It is for me, and given that we’re reporting on delay event 1, it is for me presently the most obvious reason why there’s a delay. Mr O’Donnell’s question is really quite simple. Given that the program that we’re looking at has inbuilt in it an anticipation or appreciation of that very delay in relation to permits, why isn’t that an inbuilt delay in this program and then – then, following on from there, why wouldn’t it be a mistake to actually use this program with an inbuilt delay for the purpose of assessing delay?

MR ██████: Yeah. I understand what you say. I understand – I understand the confusion or complication. First and foremost, time impact method is time impact method. That tells us what we are supposed to do. What this program is doing is forecasting all sorts of activities to occur at all sorts of times. I don’t know, your Honour, the reasons why they were forecasting this. It may well have been for this permit issue. It may be that they decided that it was more efficient to do something else before they did this work. I don’t know. All I know is this program doesn’t tell me, and I’ve seen nothing that tells me that this program was structured to build in a delay. It’s just simply a program. It shows a sequence of work.”

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⁷⁸⁸ WICET's Written Closing Submissions, [201].

⁷⁸⁹ WICET's Reply Submissions, [274].

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>> Process of Reasoning

- Weight or admissibility?
- Can the witness give helpful evidence?
- Qualifications generally, or particular experience?

Samuel McCarthy

T +61 7 3008 3972

E SAMUEL.MCCARTHY@LEVEL27CHAMBERS.COM.AU

level27chambers.com.au

Contacts



William Kerr

HKA

T +61 7 3031 6814

williamkerr@hka.com



Jeremie Witt

CMS Law

T +61 7 3184 9111

Jeremie.Witt@cms-cmno.com



Samuel McCarthy

Level 27 Chambers

T +61 7 3008 3972

Samuel.McCarthy@level27chambers.com.au



Petrina Macpherson

MinterEllison

T +61 7 3319 6147

Petrina.Macpherson@minterellison.com