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## Welcome

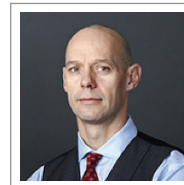
With public consultation due in respect of the proposed Security of Payments (Adjudication) Ordinance and legislation envisaged as early as next year, Hong Kong looks set to join the jurisdictions where adjudication has become a key element of construction dispute resolution. We are pleased to have Peter Fraser QC and David Johnson of Atkin Chambers as our guest writers to look at lessons from other jurisdictions, and how a significant effect might be felt by the construction industry as a whole as well as by legal practitioners.

We are also pleased to have Dr. William Ibbs as our guest writer. Dr. Ibbs is an active consultant and Professor and group leader of the Construction Management program in the Civil Engineering Department at the University of California at Berkeley. Dr. Ibbs looks at cumulative impact claims which stem from the commingling of multiple changes on a project and some lessons learned in their quantification and presentation.

**James B Longbottom**  
Managing Director



## Security of Payment and Adjudication in Hong Kong - the right solution, or simply a solution that is needed quickly?



By **Peter Fraser QC**  
and **David Johnson**  
Barristers, Atkins Chambers

### Introduction

Almost everyone knows the story in the Charles Dickens' novel, *Bleak House*, based upon the fictional case of Jarndyce v. Jarndyce, an English inheritance dispute in the Chancery Division. This had dragged on for so long that "no man alive knows what it means". The real-life Court of Chancery was his inspiration, in particular two cases, one of which "was commenced nearly twenty years ago, in which from thirty to forty counsel have been known to appear at one time". Anyone who believes such timescales are unthinkable now anywhere, though, should read *Nigerian National Petroleum Corp v IPCO* [2008] EWHC 797 (Comm) and consider that the timetable for resolution of a Preliminary Objection (similar to a strike-out application) in the Courts of Nigeria was potentially between five and 10 years; or even 17 to 18 years dependent upon appeals. Happily, things have improved since then, although not in all jurisdictions. Certainly, the modern divisions of the courts both in Hong Kong and the UK are vastly more efficient than the Victorian-era Court of Chancery.

However, the scale and complexity of many construction

disputes means that regardless of efficiency, Court resolution of some disputes is likely to be measured in years not months. Disputes will frequently have a wide number of players of different sizes. For the smaller subcontractor awaiting payment whilst the main parties are engaged in a complex dispute, this can mean being underpaid for a long period of time. Such delays are simply not a viable option for a party whose very survival depends on a consistent revenue stream<sup>1</sup>.

... the new system could lead to a shift in the balance of power towards contractors and subcontractors. Employers will need to ensure that the payment provisions of any contract are both carefully drafted and operated.

In the UK such concerns were at the heart of the recommendations made by Sir Michael Latham in his report<sup>2</sup> that led to Section II of the UK's Housing Grants, Construction and Regeneration Act 1996<sup>3</sup> and the birth of statutory adjudication in the UK. This came into force for contracts from 1 May 1998, introduced 'payment claims' and all but outlawed 'pay when paid' clauses<sup>4</sup>. Other common law jurisdictions have followed suit, including Australia, Singapore and New Zealand. Ireland<sup>5</sup> and Malaysia<sup>6</sup> are the most recent to have enacted legislation (albeit yet to take effect) and the Hong Kong SAR is likely to be next. Following the creation of a working group on security of payment legislation, key issues have been identified. A consultation period is now due. Much like the form of dispute resolution it will introduce, the timetable is tight: consultation is expected to run from February until April 2015<sup>7</sup> with legislation anticipated as early as the first half of 2016.

Although payment claims and statutory adjudication are now a feature of much of the common law world, individual regimes vary considerably. These differences are undoubtedly based on lessons learned from prior experiences in other

jurisdictions, although they also reflect the particular policy aims each regime is intended to address.

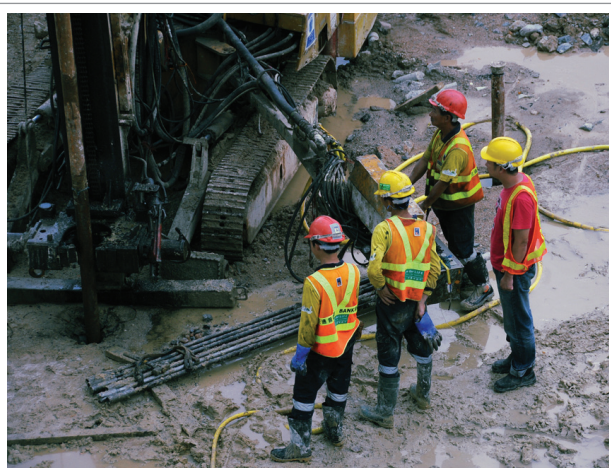
Certain provisional conclusions can already be drawn. Some of the groundwork was laid by Hong Kong's own equivalent of the Latham Report: on 18 January 2001 a report was prepared by the Honourable Henry Tang, the Chairman of the Construction Industry Review Committee<sup>8</sup>. The Tang Report noted that Hong Kong's construction industry was "at the crossroads of change" and stated that prompt action was required. Drawing on the systems of the UK and Australia, the report noted subcontractors' reliance on cashflow<sup>9</sup> and recommended further consideration be given to enacting security of payment legislation that responded to the issues specific to the jurisdiction<sup>10</sup>.

The aims of the legislation have emerged. A contractor's right to 'progress payments' will be protected. The parties will be free to agree dates and methods of calculating those payments, but the intervening dates may not exceed 60 days for interim payments and 120 days for the final payment<sup>11</sup>. The current proposal introduces statutory adjudication as a form of dispute resolution to support the new payment regime. It will enable a party to adjudicate a payment claim or other dispute without being required to fulfill any contractual or other condition precedent. Moreover, if a claim for payment has been made and no 'pay less notice'<sup>12</sup> served by the employer, the employer will be liable for the full notified sum. Adjudication in Hong Kong may be more similar to the UK's system than the NSW 'payment claim' model that restricts adjudication only to a limited category of disputes<sup>13</sup>.

The scheme is likely to cover construction contracts entered into both in writing and orally<sup>14</sup>, although contracts with residential occupiers up to a value of HK\$5m<sup>15</sup> will be excluded from the statutory scheme<sup>16</sup>. In Hong Kong there is also likely to be a statutory right to suspend work for non-payment of a decision or an admitted sum. The proposed process for adjudication envisages a period of 55 days from referral of a dispute to decision. That is nearly twice the UK period, which is 28 days. Certain features are likely to match however: the UK time limit can be extended up to 42 days by the referring party, or longer if both parties consent (and, of course, the adjudicator agrees). If the adjudicator requires longer than this period to return a decision, or the parties are unwilling to grant an extension, he or she must resign. The adjudicator has a wide discretion in how he conducts the process, and about two thirds of these in the UK are done on documents only<sup>17</sup>. An adjudicator's decision will be binding unless and until challenged in subsequent proceedings, and the court system will uphold and enforce valid decisions. In the UK the Technology and Construction Court (TCC) has an abridged procedure for service, with a hearing date for enforcement being given within a couple of weeks.

A key aspect of the UK's adjudication regime is that, providing the contract is a qualifying one, a party has a right to adjudicate a dispute "at any time"<sup>18</sup>. This really does mean 'at any time'. Parties can commence adjudications during ongoing court proceedings on the same dispute<sup>19</sup>, and there cannot be a contractual pre-condition to doing so<sup>20</sup>. A party cannot exclude the right to adjudicate by contract. They may provide for a contractual adjudication mechanism, but if they do not then the statutory scheme will apply. Similar provisions are expected in Hong Kong.

Adjudication in Hong Kong will therefore be comparable to the UK. The famous phrase of Chadwick L.J. in *Carillion v.*



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Devonport Royal Dockyard<sup>21</sup> sums it up in adjudication:

*"the need to have the right answer has been subordinated to the need to have an answer quickly"*<sup>22</sup>.

Despite initial reservations, the general impression is that 'rough justice' has generally proved successful. A key goal of alternate dispute resolution is obtaining a result that both or all parties can live with. Adjudication decisions are 'temporarily binding'<sup>23</sup>; that is, binding on the parties unless and until challenged in final determination proceedings<sup>24</sup>. Anecdotal figures suggest that there have been about 15,000 adjudications. Of these about 300 reached the Courts – a small percentage. In around 80% of cases the losing party will simply pay up. In that respect, adjudication appears to have been a success. Similarly, the TCC's statistics suggest a fall in claims commenced after adjudication was imposed, although other reasons may also apply<sup>25</sup>.

The above does not tell the full story however: adjudication is asymmetrically popular with contractors than employers. This is perhaps unsurprising: adjudication was, after all, envisaged as a means of ensuring parties down the contractual chain were not kept from their money. The late Iain Duncan Wallace QC, the Editor of *Hudson on Building Contracts*, was a vehement opponent, thought it unfair and described it as "a contractor's charter". However, the tight timetable (counted on calendar not working days), together with a potentially unpredictable tribunal, raises the possibility of the dreaded 'ambush': the so-called 'Christmas adjudication'. Alternatively, multiple contractors serve their referrals at once on an unsuspecting employer or main contractor. The effect of such tactics is exaggerated, as is their use<sup>26</sup>. Moreover, any adjudication that flouts the rules of natural justice in any material way should result in an unenforceable decision. However, the potentially drastic consequences, coupled with the fact that a tribunal may not be familiar with legal concepts such as natural justice<sup>27</sup>, means that it remains a concern. There has been suggestion of 'anti-ambush' provisions in the Hong Kong statute that will give the tribunal express power to disregard submissions and evidence deployed for the first time and/or at a late stage in proceedings. In the UK there is broad judicial and academic consensus that some claims are, through their size or complexity, simply not suitable for adjudication. However, it has separately been confirmed by the Court that the test is:

*"...not whether the dispute is too complicated to refer to adjudication but whether the Adjudicator was able to reach a fair decision in the time limits".*

Just like an allegation of ambush, this is fact-specific and it is difficult to extract a clear-cut rule.

Similarly, a 2004 TeCSA<sup>28</sup> Construction Act review suggested that this can only be changed by the legislature, and recommended action. However, despite the 2009 Construction Act<sup>29</sup> affording the opportunity to do so, no such action was taken. The ubiquity of adjudication therefore remains<sup>30</sup>.

In truth, the issue is confined to the minority of cases. Statistics suggest the majority of disputes referred to adjudication are interim payment/valuation disputes. By far the majority are in the £10k-£50k bracket<sup>31</sup>. With one year's exception there has been no period in which the number of referrals exceeding £1m was greater than 5% of adjudications, and the numbers in excess of £5m are minimal. Very occasionally there are decisions awarding sums in excess of that – one of the authors still glows with the £26 million decision he obtained some years ago – but generally, the bulk



are for what the lawyers would call a modest value. They are, however, for those involved, important sums.

However, it is the larger cases that are problematic. Broadly speaking, adjudication works well where the parties stay inside the statutory timetable. However, where the dispute is of a level of complexity that means this is not reasonably possible<sup>32</sup>, the requirement for cooperation to extend the timetable is a weakness. The responding party can effectively frustrate the whole process by refusing an extension beyond the 42-day period. In this way the longer proposed default 55-day period proposed in the Hong Kong system is to be welcomed. Beyond the statutory period, an adjudication risks becoming a mini-arbitration, if not very expensive satellite litigation. The experience from the UK is that this is unlikely to result in high-quality decision-making. Given a high-value claim may very well go to litigation/arbitration to resolve the dispute finally, the adjudication (and potentially substantial related costs<sup>33</sup>) may count for nothing<sup>34</sup>. Add this to the parties' right to adjudicate at any time, together with the mandatory adjudication provisions as a condition precedent to litigation in some contracts<sup>35</sup>, and the result is an unsatisfactory one in the case of large disputes.

What consequences will the new regime have for Hong Kong? It is clear that adjudication works best in smaller cases, which in many cases are the payment claims that it is meant to uphold. Whether such a restriction will appear in the legislation remains to be seen. On the current proposals, adjudication as a dispute resolution mechanism is likely to have wider consequences than security of payment.

Employers would be well advised to ensure that contractual adjudication provisions in their contracts are sufficiently robust to accommodate the type (and scale) of disputes they are likely to face. The employer should not forget that they are more likely to be on the receiving end of a referral. They would be well advised to consider what expertise of tribunal – and therefore what nominating body – should be inserted into the provision, and how best to ensure the adjudicator is sufficiently qualified and sensible. The Royal Institution of Chartered Surveyors has consistently been the most popular nominating body in the UK, although lawyer-nominating bodies such as TeCSA and TECBAR<sup>36</sup> have become increasingly popular. An employer (or main contractor) likely to face large claims would also be well advised to ensure any contractual adjudication provision expressly provides for a sufficient amount of time for a response.


More generally, the new system could lead to a shift in the balance of power towards contractors and subcontractors. Employers will need to ensure that the payment provisions of any contract are both carefully drafted and operated.

One of the principal reasons for the success of the UK regime is the Courts' willingness to uphold it and the decisions produced. This has been stated expressly on numerous occasions<sup>37</sup>. The Courts have repeatedly insisted that, save where the adjudicator had no jurisdiction (or exceeded it), or where the rules of natural justice have been breached in a material manner, the decision must be complied with, even if it is wrong in fact or law<sup>38</sup>. This is because it is supposed to be a temporary step and can be overturned in Court or arbitration on the final determination.

Central to this has been the expedited in the TCC; compliance with pre-action protocols is unnecessary and the matter will normally be listed for hearing within weeks of issue. The current TCC Guide<sup>39</sup> contains a specific section entitled 'Adjudication Business' that sets out the procedure for enforcement and the limited circumstances in which a decision can be challenged. It will be essential for the success of the Hong Kong regime that a similar approach is fashioned. If all that happens is enforcement by the Courts is dealt with in a similar way to other litigation, a great deal of the benefit would be lost.

There may be another consequence of the security of payment legislation. In the years that followed the enactment of the HGRC 1996 there was a flurry of cases heard by the TCC concerning numerous challenges to adjudicators' decisions. A whole area of jurisprudence grew up very rapidly in what was an uncertain period. In English law at least, those principles are now considerably more settled, and the number of challenges to decisions has decreased – they are few and far between, and restricted to isolated instances usually of very high value. Notwithstanding any cosmetic differences in the Hong Kong regime, it is highly likely that this jurisprudence will be influential in the development of Hong Kong construction law in the near future. Practitioners and counsel alike are likely to find new challenges in their practice, but a decrease in work is unlikely to be one of them.

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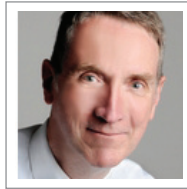
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#### Footnotes:

1. Mark 'Security of payment for Hong Kong Construction Industry: Workable alternatives and suggestions', Cheng, Soo, Kumaraswamy, Jin (2008): "The construction industry can be characterized as an amalgamation of a multitude of chained operations, often with limited and unsecured capital backing. Construction activities are often subject to a high level of technical and economic risks....Contractors are paid in arrears...Most, if not all, of the contractors are unsecured creditors of the parties for whom they have contracted to do work."
2. 'Constructing the Team', Sir Michael Latham (1994).
3. Hereafter the 'HGCR 1996'.
4. HGCR 1996 s.113(1), part of a section entitled 'Prohibition of conditional payment provisions'.
5. The Construction Contracts Act, 2013.
6. The Construction Industry Payment and Adjudication Act 2012.
7. <http://www.gov.hk/en/theme/bf/consultation/upcoming.htm>
8. <http://www.legco.gov.hk/yr00-01/english/panels/plw/papers/plw0611-487e-scan.pdf>
9. Paragraph 5.77 Tang Report.
10. Paragraph 5.80 Tang Report.
11. The statutory scheme will apply in this case.
12. Originally called 'withholding notices' in the UK.
13. It is envisaged that matters such as defects claims, delay claims and loss and expense will be matters that can be adjudicated.
14. The previous requirement in UK law that the contract must be in writing, provided for by s.107 of the HGCR 1996, was repealed by s.139 of the Local Democracy, Economic Development and Construction Act 2009.
15. This is to be contrasted with a blanket exclusion for contracts with residential occupiers in the UK scheme.
16. Of course, there is nothing to prevent such parties including a contractual adjudication provision in their contracts.
17. 69% of UK adjudications between April 2011 and April 2012 were reported as being carried out on the documents alone with no hearing or other meeting - Report No 12, Adjudication Reporting Centre, Glasgow Caledonian University: 'Research analysis of the progress of adjudication based on returned questionnaires from adjudicator nominating bodies and from a sample of adjudicators'; Trushell, Milligan & Cattanach, October 2012; <http://www.gcu.ac.uk/media/gcalwebv2/ebe/content/Adjudication%20Report%2012%20-%20October%202012.pdf>
18. HGCR 1996, s.108(2)(a).
19. *Herschel Engineering Ltd v. Breen Property Ltd* [2000] BLR 272 (TCC).
20. *RG Carter v. Edmund Nuttall Ltd* (unrep) 21 June 2000 (TCC); *John Mowlem Ltd v. Hydra-Tight Ltd* (2001) 17 Const. L.J. 358 (TCC).
21. [2006] BLR 15 (CA).
22. *ibid.* paragraph 80, per Chadwick L.J.
23. HGCR 1996 s.108(3).
24. *ie.* in litigation or arbitration.
25. Such as the advent of mediation, the increase in the cost of litigation and the increase in court fees.
26. Statistics suggest that November and April are actually the most popular times for commencing adjudications; Trushell, Milligan & Cattanach (2012).
27. UK statistics suggest approximately 35% of nominated adjudicators are legal practitioners. Quantity surveyors make up the most frequently nominated group, although the trend of legal practitioner nomination is on the upturn - Trushell, Milligan & Cattanach (2012).
28. Technology and Construction Solicitors Association.
29. Local Democracy, Economic Development and Construction Act 2009.
30. At least in part as a result of the vocal contractors' lobby in the UK.
31. Trushell, Milligan & Cattanach (2012).
32. This is likely (albeit not guaranteed) to correlate to instances of high value adjudications; 19% of adjudications took longer than the extended 42-day period in 2011 to 2012. Research also suggests it is also a growing trend; Trushell, Milligan & Cattanach (2012).
33. Recovery of adjudication costs is still an uncertain subject in English law. The previous prohibition on recovery of inter partes costs is apparently removed by the insertion of a new s.108A of the HGCR 1996 by s.141 of the Construction Act 2009. However, the wording refers only to the adjudicator's 'fees and expenses' and it is presently unclear whether or not the provision has a wider remit.
34. Particularly given that high value disputes are more likely to be challenged in final determination proceedings.
35. The NEC3 contract form being a notable example.
36. The Technology and Construction Bar Association; the Bar's equivalent of TeCSA.
37. *Macob Civil Engineering v. Morrison* [1990] BLR 93 (TCC) per Dyson J; *Carillion v. Devonport Royal Dockyard* (supra).
38. *Bouygues v. Dahl Jensen* [2000] BLR 522 (CA).
39. <http://www.justice.gov.uk/downloads/courts/tech-court/tec-con-court-guide.pdf>; TCC Guide 3rd Edition dated 1 March 2014; Section 11.

# Cumulative Impact Claims: Quantitative Aspects



By **Professor William Ibbs**,  
Professor of Construction Management at the University of California, Berkeley; and President of The Ibbs Consulting Group

## 1. Introduction

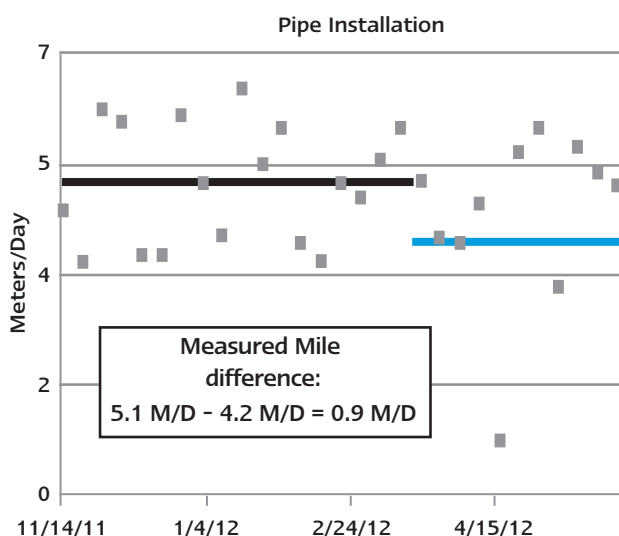
Cumulative impact claims have received increased attention in recent years from contractors and owners, plaintiffs and defendants. One reason for this popularity is that construction projects have gotten much bigger, with giga-projects not being unusual. For example, California has just launched on construction of a \$68b High Speed Rail system. With increasing size and technological complexity comes increased risk of cost and schedule growth. This growth in turn increases the likelihood of project disputes between owners and contractors. Yet it is amazing to this writer (and perhaps to many readers) that the methods frequently used to resolve these disputes are fundamentally flawed in their quantitative reasoning.

The goal of this article is to illustrate a few personal examples of such flawed reasoning and remind the reader that though triers-of-fact allow for some 'approximate measurement' of cumulative impact claim damages, computation of such damages must be intellectually sound.

## 2. Examples of Flawed Analysis

### Example 1 – Improper Measured Mile

The first example involves a pipeline project that purportedly suffered loss of productivity because of differing site conditions. The contractor's analyst recorded installation rates for the pipe laying operations and claimed that his client suffered a productivity loss of about 20% (0.9 meters/day loss against a baseline of 5.1 meters/day), as illustrated by **Figure 1**.



**Figure 1:** Mis-measured Mile Example

Here a contractor claimed that a period of time prior to March 12th 2011 was unimpacted and should be compared to a subsequent period of time which was allegedly impacted by the project owner. The difference between the production rates – 5.1 meters/day and 4.2 meters/day – was claimed to be a loss of productivity due to the owner's problematic soil conditions.

The problem with his analysis was that the impacted period was skewed by one outlier (the installation rate of April 15th). If that one day's value is removed from the analysis, the post-March 12th production rate actually exceeds the pre-March 12th rate. That was a gain, not a loss of production. The analyst for the contractor had not performed a sensitivity analysis of this data and consequently stumbled badly. A second, less consequential problem with this analyst's work was that the crew sizes of the two time periods differed slightly, so that what he really was calculating was different production rates, not different productivity rates.

Measured mile analysis is a persuasive damage calculation method but it has to be done properly.

... methods frequently used to resolve these disputes are fundamentally flawed in their quantitative reasoning.

### Example 2 – Using a Study for an Unintended Purpose

Cumulative impact claims are, by definition, claims that must be quantified by indirect methods rather than actual, particularized costing methods. The measured mile method, discussed above, is one of these indirect techniques available for computing damages. Another method occasionally used is the Mechanical Contractor's factors. Published by the Mechanical Contractors Association of America, this document lists sixteen factors that can degrade labor productivity and typical amounts of loss given minor, average, or severe conditions.<sup>1</sup> See **Figure 2** (see page 6).

These factors were developed by and for mechanical construction work, such as process piping, HVAC, and plumbing work. They were developed by polling the opinions of mechanical contractors and did not include any designer or owner input. Despite the potential for bias in the productivity loss percentages, this model has been accepted in a number of disputes in the US, most often as a means to corroborate some other analysis.

The dispute involving this writer was actually a highway widening project. The opposing expert tried to argue that highway and mechanical work were sufficiently similar, but the arbitrator in this case agreed with this writer that a project driven largely by heavy construction equipment is significantly different than a project driven by labor-intensive activities. The other expert also made the mistake of applying the factors to more months of the project (i.e. more labor-hours) than was realistic, given the delays and disruptions that actually occurred on the project.

**Figure 2: MCAA Loss of Productivity Factors**

	Productivity Loss		
	Minor	Average	Severe
<p><b>1. Stacking of Trades</b> Operations take place within physically limited space with other contractors. Results in congestion of personnel, inability to locate tools conveniently, increased loss of tools, additional safety hazards and increased visitors. Optimum crew size cannot be utilized.</p>	10%	20%	30%
<p><b>2. Morale and Attitude</b> Excessive hazard, competition for overtime, over-inspection, multiple contract changes and rework, disruption of labor rhythm and scheduling, poor site conditions, etc.</p>	5%	15%	30%
<p><b>3. Reassignment of Manpower</b> Loss occurs with move-on, move-off men because of unexpected changes, excessive changes, or demand to expedite or reschedule completion of certain work phases. Preparation not possible for orderly change.</p>	5%	10%	15%
<p><b>4. Crew Size Efficiency</b> Additional workers to existing crews 'breaks up' original team effort, affects labor rhythm. Applies to basic contract hours also.</p>	10%	20%	30%
<p><b>5. Concurrent Operations</b> Stacking of this contractor's own force. Effect of adding operation to already planned sequence of operations. Unless gradual and controlled implementation of additional operations made, factor will apply to all remaining and proposed contract hours.</p>	5%	15%	25%
<p><b>6. Dilution of Supervision</b> Applies to both basic contract and proposed change. Supervision must be diverted to (a) analyze and plan change, (b) stop and replan affected work, (c) take-off, order and expedite material and equipment, (d) incorporate change into schedule, (e) instruct foreman and journey man, (f) supervise work in progress, and (g) revise punch lists, testing and start-up requirements.</p>	10%	15%	25%
<p><b>7. Learning Curve</b> Period of orientation in order to become familiar with changed condition. If new men are added to project, effects more severe as they learn tool locations, work procedures, etc. Turnover of crew.</p>	5%	15%	30%
<p><b>8. Errors and Omissions</b> Increases in errors and omissions because changes usually performed on crash basis, out of sequence or cause dilution of supervision or any other negative factors.</p>	1%	3%	6%
<p><b>9. Beneficial Occupancy</b> Working over, around or in close proximity to owner's personnel or production equipment. Also badging, noise limitations, dust and special safety requirements and access restrictions because of owner. Using premises by owner prior to contract completion.</p>	15%	25%	40%
<p><b>10. Joint Occupancy</b> Changes cause work to be performed while facility occupied by other trades and not anticipated under original bid.</p>	5%	12%	20%
<p><b>11. Site Access</b> Interferences with access to work areas, poor man-lift management or large and congested worksite.</p>	5%	12%	20%
<p><b>12. Logistics</b> Owner furnished materials and problems of dealing with his storehouse people, no control over material flow to work areas. Also contract changes causing problems of procurement and delivery of materials and rehandling of substituted materials at site.</p>	10%	25%	50%
<p><b>13. Fatigue</b> Unusual physical exertion. If on change order work and men return to base contract work, effects also affect performance on base contract.</p>	8%	10%	12%
<p><b>14. Ripple</b> Changes in other trades' work affecting our work such as alteration of our schedule. A solution is to request, at first job meeting, that all change notice / bulletins be set to our Contract Manager.</p>	10%	15%	20%
<p><b>15. Overtime</b> Lowers work output and efficiency through physical fatigue and poor mental attitude.</p>	10%	15%	20%
<p><b>16. Season and Weather Change</b> Either very hot or very cold weather.</p>	10%	20%	30%



**Example 3 – Trying to use a Study Beyond its Intended Purpose**

This writer has over the past twenty years derived a series of change-timing curves from statistical analysis of hundreds of construction projects. **Figure 3** displays one version of that study, where the amount of change as measured in labor-hours forms the horizontal axis. The vertical axis, labeled *Productivity Index*, is a measure of Actual Productivity/Planned Productivity, so that any value under 1.0 represents loss of productivity.

Recently an HVAC contractor in San Francisco tried to use some of this writer's own work to prove loss of productivity. Unfortunately for him, he made a number of fundamental quantitative mistakes, starting with the fact that he tried to extrapolate the curves beyond the limits of their source data. In addition, some of the change hours he used in his computation included hours that were not the responsibility of the project owner. This meant he was using an overstated change rate which in turn overstated his loss of productivity and claim value.

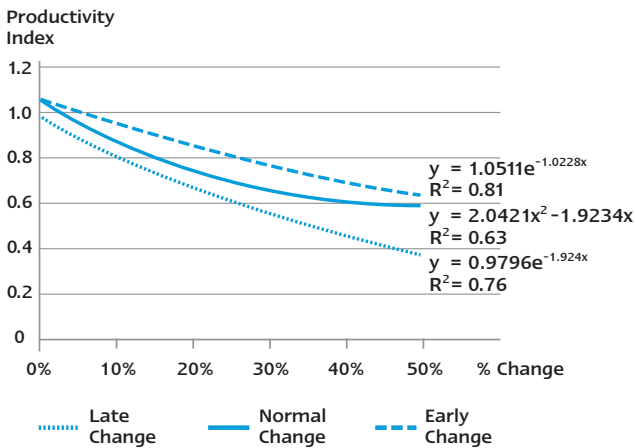


Figure 3 – Ibbes Curves for Loss of Productivity

**3. Lessons Learned**

Causation, liability, and damages are the three components of any construction claim. Cumulative impact claims stem from the commingling of multiple changes on a project, and their damages are normally quantified by an indirect method such as measured mile analysis or a benchmark study.

Causation and liability have higher proof thresholds but that does not relieve the plaintiff and his analyst from preparing a proper quantitative analysis of the damages. After years and dozens of these cases, the following lessons are in this writer's opinion of paramount importance when assembling such claims:

1. The plaintiff should have a solid understanding of the quantum methodology being used, and apply the method only for the purposes for which it was developed. Do not extrapolate beyond the limits by which it was derived.
2. Be conservative in your analysis. Do not jeopardize the claim by requesting damages that go beyond the realm of reasonableness. Consider organizing the claim in different categories of claimable damages: those definitely and inarguably claimable and those which are borderline.

Present these different categories to the client and ultimately the trier-of-fact so that he can see the conservative nature of your analysis.

3. Present the information in easy-to-understand graphical form. Cumulative impact claims are difficult to understand because of their complexity. Developing schematics and visuals that tell a story, especially in chronological fashion, are invaluable.

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**Footnotes:**

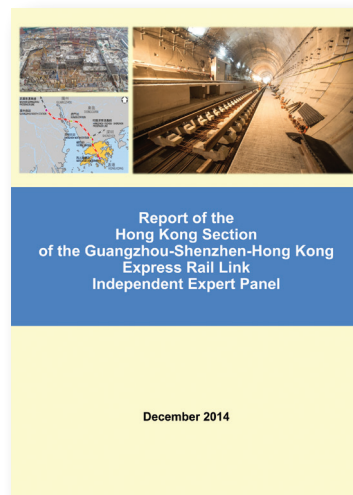
1. Mechanical Contractors Association of America (2011). "Change Orders, Productivity, Overtime: A Primer for the Construction Industry." Rockville, MD.

# ADR | Review

**Literature:**

Report of the Hong Kong Section of the Guangzhou-Shenzhen-Hong Kong Express Rail Link Independent Expert Panel

In December 2014, the Independent Expert Panel led by the Hon Mr Justice Michael Hartmann published its report on the Hong Kong Section of the Guangzhou-Shenzhen-Hong Kong Express Rail Link. The report examines both the project management systems and cost control mechanisms of the MTRCL in overseeing the XRL project and the monitoring process of the Government and can be downloaded at: <http://www.gov.hk/en/theme/iep-xrl/pdf/IEP-report.pdf>



## 📌 New Consultants Join ADR

We are pleased to announce that two new consultants have joined the ADR team.



**John Koch**  
BEng (Hons), CEng, MIEA  
Senior Consultant

**John Koch** has joined ADR as a senior consultant. John is a Chartered Structural Engineer with extensive practical experience in all aspects of commercial management of projects. He was previously employed as the East Asia Commercial Manager for a leading Hong Kong engineering consultancy and was responsible for the regional commercial and contractual activities of the business.



**Raja Arumugam**  
BEng, MSc  
Consultant

**Raja Arumugam** has joined ADR as a consultant. Raja is a quantity surveyor with a degree in Civil Engineering and Master's degree in Construction Project Management. He has experience in a range of major civil and building projects and is familiar with all aspects of contract administration and commercial management of projects.

Based in Hong Kong, ADR Partnership Limited is a dynamic practice of construction professionals providing specialist commercial and contractual services to the construction industry.

If you would like to discuss any of the articles published in this *Digest* or your project requirements, please contact James Longbottom, Patrick O'Neill or David Longbottom at ADR Partnership Limited on **(852) 2234 5228** or e-mail us at [info@adrpartnership.com](mailto:info@adrpartnership.com)

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## 📌 Hong Kong 24 Hour Charity Pedal Kart Grand Prix



ADR was pleased to be one of the sponsors of the IBI team entrant in the Hong Kong 24 Hour Charity Pedal Kart Grand Prix held at Victoria Park on 22nd November 2014.



The team successfully completed the whole 24 hours of the race, completing over 640 laps and 400km. They surpassed their initial fund raising target and managed to raise HK\$110,000 for charity.

Well done!

## ADR | Diary

### 📌 Forthcoming Events 2015

- 28 May** Society of Construction Law Hong Kong: Half Day Adjudication Workshop & Evening Seminar - Hong Kong International Arbitration Centre (afternoon) / The Hong Kong Club (evening)
- 30 May** The Lighthouse Club: Hong Kong Annual Charity Ball - Hong Kong Convention & Exhibition Centre
- 4 Jun** ADR Cocktail Party - The China Club
- 11 Jun** Society of Construction Law Hong Kong: Annual General Meeting
- 12 Jun** British Chamber of Commerce: Annual Ball - Grand Hyatt Hotel

## ADR | Partnership

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