

# CHANGE ORDERS AND NOTICE REQUIREMENTS: MITIGATING THE CUMULATIVE IMPACT OF MULTIPLE CHANGES

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# Change Orders and Notice Requirements: Mitigating the Cumulative Impact of Multiple Changes<sup>1</sup>

## **I. INTRODUCTION**

Unanticipated change within a construction project can often pose problems for both contractors and owners, especially where an accumulation of multiple changes leads to further unexpected outcomes. Most construction contracts accommodate for unanticipated change, however contractors will often find themselves under strict requirements to provide a prompt notice of costs associated with the changes. Consequently, such notice requirements may result in contractors failing to adequately calculate the cumulative cost of all of the changes taken together. An inequitable consequence then results for contractors who may find themselves unable to obtain full compensation for projects in which multiple changes led to a loss of productivity. As a result, problems arise for both owners and contractors; contractors are required to prematurely provide a quantification of costs, while owners face the prospect that contractors might overestimate change-costs in anticipation of cumulative effects that may, in fact, never materialize within a project.

Contracting parties can solve these problems by considering the risks associated with cumulative change orders in advance. To this end, British and American contracting practices, where strict notice clauses for price changes are not always relied upon in some standard form contracts, as well as Canadian jurisprudence illustrate the principles to be considered. Ultimately, given the courts' reluctance to provide relief in absence of specific contractual authority, parties to construction contracts are in the best position to facilitate these solutions.<sup>2</sup>

## **II. CHANGE ORDERS AND NOTICE**

### **A. Change Orders**

Scope of work changes are typical in construction projects and occur either when an owner requests a contract variation, or when a contractor is required to respond to unexpected or unforeseen conditions, including conditions caused by professional errors or omissions. Where an architect or engineer provides incorrect or incomplete drawings or specifications, formal changes are necessary. Similarly, changes are required when items or elements are omitted from project plans. While change is an expected occurrence at construction sites, the effects of change are often unanticipated.

Change Orders are used by both owners and contractors to add to, delete from, or otherwise alter the work originally set forth in the contract documents. Within the construction industry, standard forms are often used to administer change orders, the contents of which are dictated contractually. Change orders typically require:

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<sup>2</sup> For additional perspective on cases and issues discussed here, see also Warren H.O. Mueller, Q.C., *The Impact on Damage Claims of Contractual Requirements for the Giving of Notice of Claims* (2006), 48 C.L.R. (3d) 17.

- **Identification Information** - details of the project, contractors involved, etc.;
- **Change Information** - a specification for the change itself;
- **Price Information** - the amount to be paid for the change;
- **Notice** - from the contractor to the owner/owner's agent; and
- **Approval** - from the owner to the contractor of the change.

As with any contractual provision, the courts generally require formal adherence to these requirements. An Ontario decision,<sup>3</sup> for example, considered the difficulties experienced by the parties involved in a small-scale construction project where formal change order requirements were not adequately followed:

In the contract, written change orders (C.O.'s) had been required to be signed prior to a change in the work being authorized. Each C.O. should have contained details of the work and the value thereof in the event of an extra or a deletion. This procedure however was not followed. General Condition 12.2 (tab 3) required the contractor to present his claim for a change in the contract price with appropriate documentation in a form acceptable to the consultant. He did not...<sup>4</sup>

Given the contractor's non-compliance with the change order provisions, the Court was forced to review the conduct of the parties in determining the damages suffered by both the owner and the contractor. Accordingly, the contractor paid a significant penalty as a result of the owner's successful counterclaim. The outcome likely would have been different had the change orders been prepared correctly.

Because change orders are essentially a formalized process for varying contracts, all of the 'typical' contract issues apply – including issues relating to the parole evidence rule, consideration, complete-agreement clauses, waiver, and estoppel. As might be expected, disputes involving contracts see courts interpret change orders according to the facts at hand, with particular reference to the terms and conditions provided in the underlying contract. This has very specific consequences for the unwary contractor or owner when it comes to issues of change and delay.

## **B. Notice, Delay and Price**

A particularly vexing issue for both owners and contractors arises as a result of delay caused by change orders. A change order expanding the scope of work in a contract, when properly executed, will compensate a contractor for the materials and labour required to effect the change. Construction contracts typically include a parallel mechanism to compensate contractors for increased costs as a result of delay, including delay caused by or resulting from a change order. As with change orders, claims for compensation for delay typically require formal notice and approval together with information detailing the delay. These requirements can generally be met with the information communicated in a change order.

<sup>3</sup> 647402 *Ontario Ltd. c.o.b. Abloy Construction v. Jayaraman and The Royal Bank of Canada*, [1993] O.J. No. 2541 (Ont. Gen. Div.) [*Abloy*].

<sup>4</sup> *Abloy*, *supra* note 3 para. 19.

The real issue, however, arises with respect to price. While it is relatively straightforward to specify the increased cost resulting from additional labour and materials required in a project as a result of change, it is more challenging to gauge the impact that change will have on a project's overall duration and cost. Numerous factors are involved with calculating the cost of change and certain questions must first be answered by the contractor. Will the change require an alteration to the project's critical path? Can labour be allocated from other tasks, or must additional workers be hired? Will the materials required for the change disrupt deliveries or storage of materials required for other tasks? Will trade stacking and out of sequence work result? In some cases, it will be impossible to accurately answer all questions within the time notice is required.

Depending on the precise contractual terminology used, claims for delay resulting from change orders or otherwise, may or may not require that the cost of delay be quantified at the time the delay is anticipated. Some contracts may require actual notice of the costs caused by delay at the time the delay comes to light, while other contracts may simply require notice that a future claim for delay costs will be made at the conclusion of a project. As is illustrated by case law, the notice requirement for price changes as a result of delay plays a significant role in the allocation of risk between contractors and owners in a construction project.

### ***Corpex v. Canada (1982), Supreme Court of Canada***

The 1982 Supreme Court of Canada decision in *Corpex (1977) Inc. v. Canada*,<sup>5</sup> is a characteristic case involving change and delay in a Canadian construction project. In *Corpex*, the contractor claimed additional costs for pumping water resulting from a mistaken assumption about soil conditions. Information in the project's plans and specifications led the contractor to bid on the project on the basis that a particular number of pumps would be required to provide drainage behind a cofferdam. At the site, the actual conditions involved a great deal more groundwater seepage than was anticipated, and additional pumps were required. Aside from the change itself, the time required to procure additional pumps and drain the area in question led to subsidiary delays within the project as a whole. The contractor advanced a delay claim at the conclusion of the project.

The contract in *Corpex* allowed the contractor to claim additional expenses arising from such a change only where notice was provided to the owner in a timely manner:

[I]f the Contractor has given the Engineer written notice of his claim before the expiry of thirty days after encountering the soil conditions giving rise to the claim ... [the Owner] shall pay to the Contractor in respect of the additional expense, loss or damage incurred or sustained by reason of that difference ... an amount equal to the cost ... of the additional plant, labour and materials necessarily involved.

Key to the claim in *Corpex* were the difficulties the contractor faced in calculating the total costs attributable to the changed soil conditions. Speaking for the Court, Justice Beetz noted<sup>6</sup> the Trial Judge's finding that it was impossible for the contractor to precisely determine in advance the cost of delays caused by the change. While the costs of drainage might have been calculable within the first few weeks of the operation of the improved pumping system, the costs of other delays very likely could not have been estimated until the conclusion of the entire effort. The "changed soil condition" clause, however, required written notice of a claim for additional

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<sup>5</sup> [1982] 2 S.C.R. 643 [*Corpex*].

<sup>6</sup> *Corpex*, *supra* note 5 para. 45.

expenses as a result of the change within thirty days of encountering the unanticipated soil conditions. The contractor in *Corpex* simply could not provide notice fully quantifying the extent of the claim within the allotted timeframe, and as a consequence, it did not do so. In the result, the Supreme Court of Canada strictly interpreted the change clause and the contractor's claim was dismissed.

Canadian cases since *Corpex* have generally held that timely notice is a condition precedent to a claim arising from change or delay (see also: *Impala Construction Ltd. v. Spade Construction Ltd.*,<sup>7</sup> *Acme Masonry Ltd. v. Bird Construction Ltd.*,<sup>8</sup> and *A.C. Landry & fils Ltée v. New Brunswick*).<sup>9</sup> As in *Sheds Manor Holdings Ltd. v. Dale Mann Ltd.*,<sup>10</sup> and *Goodfellow's Trucking Ltd. v. New Brunswick*.<sup>11</sup> *Corpex* has been held to stand for the proposition that parties must be vigilant in meeting contractual preconditions to claims under construction contracts or risk losing those rights if they aren't alert. Consequently, parties must be acutely aware of stringent notice provisions within contracts that may bar their right of recovery.

### ***W.A. Stephenson v. Metro Canada (1987), B.C. Supreme Court***

*W.A. Stephenson Construction (Western) Ltd. v. Metro Canada Ltd.*,<sup>12</sup> is a B.C. case relying on *Corpex* with respect to notice. W.A. Stephenson was a contractor responsible for constructing portions of Vancouver's SkyTrain LRT system, a project that experienced multiple delays for a variety of reasons. At the conclusion of the project W.A. Stephenson made claims for additional compensation as a result of delay. The contract in force between the contractor and the owner, Metro Canada, contained general conditions governing notice arising from delay:

13.1.1 The Contractor shall give [the Owner] written notice of any of the foregoing causes as soon as practicable and in any event no later than five Days following the occurrence thereof ...

14.1.1 Notice of a Claim shall be submitted in writing by the Contractor to [the Owner] within seven Days after the Contractor first became aware of the events of circumstances giving rise to such Claim.<sup>13</sup>

On the facts, W.A. Stephenson's claims appeared to be barred as the notice provisions appeared not to have been complied with. Justice Locke, however, looked to site meeting minutes made throughout the project as sufficient to satisfy the notice requirements. As a result, W.A. Stephenson's claims were successful. While this may appear to fly in the face of the formality required by *Corpex* and other Canadian jurisprudence, Locke J.'s findings of fact provide a justification:

This meticulous minute-taking demonstrates the long experience of both the parties. Copies were sent to all appropriate executives and that they were carefully read is obvious because it is noticed that from December 22 on, and thereafter on occasion, contractor's representatives wrote to [the Contractor's engineer] asking for corrections to the minutes which were duly made. A reading of

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<sup>7</sup> (1986), 18 C.L.R. 124 (Nfld. C.A.).

<sup>8</sup> (1986), 20 C.L.R. 228 (B.C. C.A.).

<sup>9</sup> (1987), 24 C.L.R. 156 (N.B. Q.B.).

<sup>10</sup> (1995), 25 C.L.R. (2d) 290 (Ont. Ct. J.).

<sup>11</sup> 2005 NBCA 73.

<sup>12</sup> (1987), 27 C.L.R. 113 (B.C. S.C.) [*W.A. Stephenson*].

<sup>13</sup> *W.A. Stephenson*, *supra* note 12 para. 166.

the minutes is very revealing: they were obviously regarded by everyone as a method of formally communicating their concerns to the other party [emphasis added].<sup>14</sup>

In this sense, *W.A. Stephenson* can be taken to stand for the proposition that where site minutes can be regarded as a formal method of communication between parties, they may be sufficient to meet the notice requirements for a claim as a result of change or delay. This is, of course, a finding of fact that cannot be assumed as applicable to all construction projects. Indeed, the finding of fact in *W.A. Stephenson* that the owner's executives carefully read the site minutes is a distinguishing factor that may well not hold elsewhere.

### **III. THE CUMULATIVE IMPACT OF MULTIPLE CHANGES**

If a lack of prior notice is fatal to a claim due to change and subsequent delay, what recourse does a contractor have where multiple changes, each properly claimed, culminate in an unanticipated cumulative impact?

#### ***Doyle v. Carling O'Keefe (1988), B.C. Court of Appeal***

The decision in *Doyle Construction Co. v. Carling O'Keefe Breweries of Canada Ltd.*,<sup>15</sup> involved a construction project in which a multitude of changes were ordered. When the project was done, the contractor noted that the cumulative effect of the many individual changes was such that an additional claim for "impact costs" was warranted. It was argued that a "ripple effect" arising from all of the changes had an additional, cumulative effect on the construction project itself. From the contractor's perspective, the changes altered the project by such an extent that its initial project-wide assumptions had been impacted, hence the claim for impact costs.

*Doyle* is an unanimous decision of three Appellate Justices with each judge giving separate reasons. Despite the potential ambiguity, what is clear from these reasons is that contractual provisions relating to change and delay are closely scrutinized and strictly interpreted in reference to the allocation of risk as between parties. Craig, J.A., for example, noted the relative roles of owners and contractors in the process the parties used to implement changes under the governing CCDC (1982) contract:

When the [owner] contemplated a change in the construction, the consultants would issue a notice of contemplated change ("N.O.C.C.") and give it to the [contractor]. The [contractor] would then consider how the contemplated change would affect the contract price and would advise the consultant. If the owner agreed to the estimated cost of the change, there would be an adjustment in the contract price. If the owner did not agree, the contractor would have to rely on the dispute provisions of the contract [General Condition 7]. ... General Condition 12.1 provided that the parties could determine the value of any change by one or more of three specified methods.<sup>16</sup>

The importance of strict adherence to this contractually-defined process is concisely stated in the reasons of MacDonald J.A., who cited a Federal Court decision in rejecting the claim for cumulative "impact costs" in favour of a view requiring the contractor to factor such costs into the calculations made for each individual change:

<sup>14</sup> *W.A. Stephenson*, *supra* note 12 para. 174.

<sup>15</sup> (1987), 23 C.L.R. 143 (B.C. S.C.); appeal dismissed (1988), 27 B.C.L.R. (2d) 89 (B.C. C.A.) [*Doyle*].

<sup>16</sup> *Doyle*, *supra* note 15 para. 4.

[I]t seems to me that when a person engages a contractor and when an extra price is agreed to in respect of a particular item, that person has a right to assume that the contractor has taken into account all of his costs, direct and indirect, flowing from the change in circumstances that led to the renegotiation and that he will not later be presented with a bill for additional compensation.<sup>17</sup>

This position was reflected by Locke J.A., who reasoned that the contractual notice provision in question was specifically intended to protect the owner with respect to cost issues:

The provision for notice is useless unless it gives some particulars to the owner as to what the complaint is. It must surely also be given in enough time so that he may take the guarding measures pointed out in *Corpex* if he so desires. An early notice also leaves the owner free to negotiate either under this provision or under any other provision of the contract which may assist in the resolution of the problem.<sup>18</sup>

Locke J.A. went on to suggest that even if the price could not be determined (and, presumably, where a specific quantification is not strictly required), formal notice to the owner is still a requirement to preserve both the contractor's and the owner's rights with respect to a change.

From the standpoint of the contractor, he may not, of course, know precisely what the monetary effect of accumulation of delays might bring about, but an early notification of his concern will also enable him to get himself into a negotiating position as to the method of solution of the problem, and to raise his concerns under the contract.<sup>19</sup>

In the result, however, Locke J.A. dismissed the "grumblings of this contractor, recorded though they may be in site minutes"<sup>20</sup> as insufficient to constitute notice, as well as a detailed letter of the contractor's which did "indeed and in some detail spell out the nature of the complaint",<sup>21</sup> but was sent outside of the contractually-contemplated time to deliver notice for change and delay. In the result, the contractor's claim was denied.

In essence, the Court took the view that if the contractor had maintained proper cost-control procedures at the time each individual change was made, the cumulative impact could have been adequately anticipated. This suggests that contractors must take into account both discrete and cumulative costs resulting from change orders, including the future impact of changes in causing project delays. The Court's decision implied that to do otherwise amounts to "inadequate cost control" on the part of the contractor, thus denying the owner the opportunity to take the full impact of individual changes into account.

### ***Dilcon v. ANC (2000), Alberta Court of Appeal***

An even more stringent approach to notice was taken by the Alberta Court of Appeal in *Dilcon Constructors Ltd. v. ANC Developments Inc.*<sup>22</sup> In *Dilcon*, the applicable contract provided that the contractor may make claims for compensation as a result of changes or delays not caused by the contractor, subject to the approval and verification of the project engineer. With respect to notice, the contract provided:

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<sup>17</sup> *Walter Cabott Construction Ltd. v. Canada* (1974), 44 D.L.R. (3d) 82 at 90 (F.C. T.D.).

<sup>18</sup> *Doyle, supra* note 15 para. 77.

<sup>19</sup> *Doyle, supra* note 15 para. 77.

<sup>20</sup> *Doyle, supra* note 15 para. 78.

<sup>21</sup> *Doyle, supra* note 15 para. 79.

<sup>22</sup> 2000 ABCA 223 [*Dilcon*].

No claim for reimbursement may be made in respect of such additional costs unless before the costs were incurred the Contractor gave notice in writing to the Engineer of its intention to incur the costs and make the claim [emphasis added].

In *Dilcon*, the contractor subsequently claimed "additional field overhead costs" as a result of the cumulative impact of multiple changes and the resulting delay. This claim was rejected by the Court on the basis of lack of notice, despite the contractor having written letters advising of its intent to make such a claim. The contractor had additionally ensured that its intention to make such a claim was recorded in the project's site minutes, as was done in *W.A. Stephenson, supra*. The Court of Appeal ultimately found that this was insufficient to constitute the required notice as the letters and site minutes lacked particulars of the costs of such a claim. The claim for "additional field overhead costs" was denied on the interpretation of the notice provision requiring not only the contractor's intention to make a claim, but also that the quantification of the claim at the time of notice. In *Dilcon*, the Court appeared to find that the phrase "such additional costs" meant quantification of costs was required at the time of notice.

*Dilcon* represents a high-water mark with respect to notice requirements, leaving contractors effectively having only a single opportunity to claim "impact costs" or "additional overhead costs" in anticipation of delay arising from change within a project. Applying that reasoning, a contractor must estimate the cumulative number of changes it anticipates over the remainder of a project, a fact that is presumably outside of their own control.

#### ***Lawhill Ltd. v. Ontario* (2007), Ontario Superior Court of Justice (Ont. Master)**

A further example of inadequate notice can be found in *Lawhill v. Ontario*.<sup>23</sup> In Ontario, masters are provincially appointed and exercise a superior court judge's jurisdiction in civil matters. Masters typically hear motions and deal with specialized matters such as conducting construction lien trials.

*Lawhill* involved a dispute between a contractor and an owner, the Government of Ontario. The contractor was hired to do exterior renovations to a historical government building but the work was not completed by the contractually scheduled completion date of September 6, 2001. Accordingly, the contractor brought a claim for damages caused by delay.

The contract provided:

**G.C. 44.3** No claim for damages caused by delay made in respect of G.C. 44.2 will be allowed unless written notice thereof is given to the MBS Designee within seven (7) days of its commencement provided however, that in the case of a continuing delay only one notice need be given.

The contractor made mention of a delay claim in a letter dated February 7, 2002. That letter states:

"At this point in time we are not submitting a claim but we wish to reserve our rights to submit a claim at a later date".

Master D.H. Sandler ruled that this was not sufficient notice of a claim for damages for delay as the letter did not contain any particulars or details to the owner of what the complaint was.

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<sup>23</sup> (2007), 68 C.L.R. (3d) 1 [*Lawhill*].

Further, the letter did not comply with the time limit of "within seven days of its commencement". The delay claim was eventually dismissed as Master Sandler found that notice was a condition precedent and also that there was nothing in the evidence to justify relieving the contractor from its obligation to give proper notice of its delay claim.

***Bianchi Grading. v. University of Guelph (2007), Ontario Superior Court of Justice***

A recent Ontario decision indicates that delay claims may not always be barred entirely as a result of a failure to comply with notice provisions. In *Bianchi Grading Ltd. v. University of Guelph*,<sup>24</sup> a contractor was retained directly by an owner to perform excavation services required as part of a larger project. While the work ought to have been relatively straightforward, incomplete tender documents and other issues led to a number of changes and extras being required in support of the work. At the conclusion of the project, the contractor claimed for additional costs in relation to changes and extras, as well as for "under-recovered extended overhead costs during the period of delay."<sup>25</sup>

The applicable delay provision in the governing contract provided that the contractor would be compensated for reasonable costs as a result of delay, but only when notice was given within a 10-day window following commencement of the delay:

**6.5.1** If the Trade Contractor is delayed in the performance of the Work by an action or omission of the Owner, Construction Manager, Consultant, or anyone employed or engaged by them directly or indirectly, contrary to the provisions of the Contract Documents, then the Contract Time shall be extended for such reasonable time as the Construction Manager may recommend in consultation with the Trade Contractor. The Trade Contractor shall be reimbursed by the Owner for reasonable costs incurred by the Trade Contractor as the result of such delay.

**6.5.4** No extension shall be made for delay unless notice in writing of claim is given to the Construction Manager not later than 10 Working Days after the commencement of delay, providing however, that in the case of a continuing cause of delay only one notice of claim shall be necessary.

In *Bianchi*, the contractor failed to give notice in accordance with section 6.5.4 of the general conditions. In interpreting the effect of this non-compliance, Justice Tulloch considered a range of Canadian decisions regarding notice, including *Doyle, Foundation Co. of Canada v. United Grain Growers Ltd.*,<sup>26</sup> and *Kor-Ban Inc. v. Pigott Construction Ltd.*,<sup>27</sup> which all concluded that a failure to give notice precluded claims of damages for delay. Indeed, Justice Tulloch concluded:

As I have found that it was [the contractor's] responsibility to supply the shoring under the Contract, it is not entitled to claim for delay resulting from its own breach of the timing provisions of the Contract.<sup>28</sup>

This is the expected conclusion. However, Justice Tulloch went on to decide:

However, the defendant is not blameless in this regard. Clearly this Project could have been planned better from the beginning. The numerous design changes on behalf of the defendant or its

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<sup>24</sup> (2007), 61 C.L.R. (3d) 199 (Ont. Sup. Ct. J.) [*Bianchi*].

<sup>25</sup> *Bianchi, supra* note 24 para. 16.

<sup>26</sup> (1995), 25 C.L.R. (2d) 1 (B.C. S.C.).

<sup>27</sup> (1993) 11 C.L.R. (2d) 160 (Ont. Gen. Div.).

<sup>28</sup> *Bianchi, supra* note 24 para. 189.

consultants posed a challenge to all involved. Before a contractor set foot on the site, the location of the trees and the elevations for the site should have been known. Whether the laterals exited from the footings or the sides of the residence foundations should have been established before the contractors arrived. The decision to pay for fill to be trucked in so that the construction equipment did not submerge in mud could have been made a lot earlier. ... As a result, I find that the parties should share equally the responsibility for the delay [emphasis added].<sup>29</sup>

This decision was not appealed.

#### **IV. ADDRESSING THE IMPACT OF CUMULATIVE CHANGE**

Where contracts are drafted to restrict future price reservations or *ex post facto* claim quantifications, the effect of strict notice requirements for claims as a result of change or delay leaves contractors in a difficult predicament. That is, contractors are essentially required to predict future events outside of their own control. This may lead to an inequitable distribution of contractual risk in that the contractor is asked to predict (and claim for) the full costs of a change or delay in a contract where the full impact cannot be quantified at the time notice is required.

One solution suggested is to allow contractors to give notice while reserving rights to adjust prices at a later point in time. While this provides contractors with a method for avoiding this dilemma, not all owners will consent to reservations for future (retroactive) price adjustments as a result of delay attributable to the cumulative effect of changes. On the other hand, contractors will have difficulty fully accepting the Courts' suggestion in *Doyle* that a failure to proactively predict the full extent of delay on uncertain future change orders is simply poor cost control. As a consequence, difficulties arise for both contractors and owners.

The pressure to anticipate the risk of possible future changes may inevitably lead contractors to assay their risk by over-estimating otherwise straightforward individual change costs with arbitrary "impact costs" as each change arises. Ultimately, this potentially transfers unacceptable costs onto owners seeking otherwise legitimate changes within a construction project and unnecessarily penalizes owners as a result of genuinely unanticipated costs. In effect, the *status quo* is problematic for all parties to construction contracts.

The blame for the *status quo* state of affairs ought not to rest with the courts' interpretation of the applicable contractual provisions. While contractors may seem to bear the heavier burden arising from strict interpretation of notice provisions in construction contracts, the dubious alternative is for courts to allow contractors' *ex post facto* cost calculations to be tacked on to previously-given notice. From an owner's standpoint, this effectively undermines the bargain made at the time of contracting as a contractor is effectively relieved of their originally-negotiated project bargain. Even in *Dilcon* where the Courts took a strict and unforgiving view on notice requirements, the alternative would have been for the acceptance of the contractor's notice absent its cost component, which could only have been accounted for at the conclusion of the construction project. In the result, the Courts have decided these 'notice' cases as pragmatically as possible – that is, within the confines of the bargain made by the parties to the various projects involved.

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<sup>29</sup> *Bianchi, supra* note 24 paras. 190-91.

In this sense, the mischief of the impact of cumulative costs lies not with the courts' interpretation of notice provisions, but rather with the initial bargains made by parties at the outset of construction projects. Owners and contractors are generally not employing contractual mechanisms that anticipate the cumulative impact of multiple changes within individual construction projects. This is, of course, an easy 'armchair' analysis to make after cases have been decided but the experience of these cases indicates at least some evidence that parties may be relying too heavily on standard forms without turning their minds to the consequences of notice provisions with respect to changes and delay. An owner's interests will be best served by requiring a specific price to be included at the time of notice. Likewise, a contractor will be best served by the possibility of a retroactive calculation at the conclusion of a project. The difficulty is finding common ground between these two interests. To this end, the similar experiences of contractors and owners in other common law jurisdictions is informative.

## A. The American Experience

The experience in the United States is somewhat different than what has been experienced in Canada with respect to the strict interpretation of notice provisions. In some instances, American courts have found notice provisions requiring immediate quantification of impact costs to be unenforceable. According to Bramble and Callahan:<sup>30</sup>

Some notice clauses go beyond mere notification and purport to require proof or quantification of damages concurrently with the notice. Compliance with such clauses is difficult. Given the short notice period, the contractor may be unaware of the event's effect upon its performance and cost. Courts are reluctant, therefore, to enforce the more onerous documentation requirement of notice clauses.<sup>31</sup>

*E.C. Ernst, Inc. v. General Motors Corp.*,<sup>32</sup> is an example of a contractor successfully appealing a trial decision that strictly construed a notice provision as requiring quantification of the full extent of impact costs at the time of notice. The appellate court found this to be unreasonable and accepted the contractor's claim for delay costs, as calculated *ex post facto*. Bramble and Callahan indicate that some standard-form contracts have come to reflect decisions such as *E.C. Ernst*. The American Institute of Architect's (AIA) standard-form "A201" document, for example, contains a 21-day notice requirement for delay events, with notice being satisfied by an *estimate* of the delay costs, along with a statement of the *probable* impact of the delay.<sup>33</sup>

**4.3.3 Time Limits on Claims.** Claims by either party must be made within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later. Claims must be made by written notice. An additional Claim made after the initial Claim has been implemented by Change Order will not be considered unless submitted in a timely manner.

**4.3.8.1 Claims for Additional Time.** If the Contractor wishes to make Claim for an increase in the Contract Time, written notice as provided herein shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay only one Claim is necessary.

<sup>30</sup> B.B. Bramble and M.T. Callahan, *Construction Delay Claims* (New York: Wiley, 1990) [*Bramble and Callahan*]

<sup>31</sup> *Bramble and Callahan, supra* note 30 § 2.14.

<sup>32</sup> 482 F.2d 1047 (5th Cir. 1973).

<sup>33</sup> See §§. 4.3.3 and 4.3.8.1 of AIA Document A210-1987. This document may also be compared and contrasted to previous editions of AIA Document A210.

In comparing the United States to Canada, at least in reference to projects using the AIA standard-form, it would seem the quantification of claims arising from delay are equally strict in the sense that notice is a necessary precondition to making a claim, but also somewhat more relaxed in the sense that the quantification of uncertain future costs at the time of notice is not required.

## B. The British Experience

U.K. jurisprudence is similar in scope and effect to the Canadian experience with respect to notice requirements arising from change and delay. According to Keating's *Construction Contracts*,<sup>34</sup> in order for a British contractor to recover payment in excess of the original sum contemplated in a construction contract, four elements must be established:

1. that the extra work is not included in the original scope of work;
2. that there is an express or implied promise to pay for the work;
3. that any agent ordering the extra work was so authorised; and
4. that any condition precedent to payment imposed by the contract has been fulfilled.<sup>35</sup>

In the U.K., as in Canada, interpretation of the fourth element is critical to determining whether a contractor can recover as a result of a change or delay. Frequently, contracts will require that change orders or claims for delay be provided in a particular form and within a specified notice period. Generally, where a written change order is required, the absence of a clear definite order will bar a claim for recovery.<sup>36</sup> Such notice provisions tend to be strictly construed by U.K. Courts.

For example, the U.K. Court of Appeal found in *Smallman Construction Ltd. v. Redpath Dorman Long Ltd.*,<sup>37</sup> that notice provisions must be strictly complied with. In *Smallman*, a contractor was contractually bound to "quantify in detail" monies withheld from a subcontractor. The contractor did not, and the Court found that the failure to do so invalidated the contractor's subsequent claim for the amounts withheld.

Similar to the American standard-form noted above, U.K. construction contract forms tend to avoid requiring a quantification of delay claims at the time notice is given. A popular U.K. form of construction contract is the 'ICE' contract, sponsored and approved by the U.K Institute of Civil Engineers (ICE), the Association of Consulting Engineers (ACE) and the Civil Engineering Contractors Association (CECA). With respect to notice, the 'ICE' contract requires that notice with particulars of a claim for additional funds be advanced, but only "as soon thereafter as may be reasonable":

12 (2) **Intention to claim.** If in addition the Contractor intends to make any claim for additional payment or extension of time arising from [unforeseen conditions or obstructions] he shall at the same time or as soon thereafter as may be reasonable inform the Engineer in writing pursuant to Clause 53 and/or Clause 44(1) as may be appropriate specifying the condition or obstruction to which the claim relates.

<sup>34</sup> S. Furst and V. Ramsey, eds. *Keating on Construction Contracts*, 8th ed. (London: Sweet & Maxwell, 2006) [Keating].

<sup>35</sup> *Keating*, supra note 34 § 4-022.

<sup>36</sup> *Keating*, supra note 34 §§ 4-045 and 4-046.

<sup>37</sup> (1988), [1989] 5 Constr. L.J. 65 (C.A.) [*Smallman*].

12 (3) **Measures being taken.** When giving notification in accordance with [sub-clause (2)] of this Clause or as soon as practicable thereafter the Contractor shall give details of any anticipated effects of the condition or obstruction the measures he has taken is taking or proposing to take their estimated cost and the extend of the anticipated delay in or interference with the carrying out for the Works.

Interestingly, these notice provisions in the ICE form of contract do not operate as a condition precedent to a contractor's right to press a claim as Clause 53 of the contract expressly permits out-of-time claims so long as the engineer is not prejudiced.<sup>38</sup> Accordingly, comparison of the ICE contract (and its related jurisprudence) to standard-form Canadian equivalents is somewhat inapt with respect to notice provisions. Nonetheless, this U.K. example does demonstrate the contractual approach taken in the U.K. with respect to notice issues where, as in Canada, the courts have tended to strictly construe notice provisions as condition precedents to advancing a claim. Unlike the American experience, where the courts have provided the impetus for change, in the U.K., parties appear to have developed appropriate forms of contract to deal with the issue of onerous burdens on a contractor in relation to change, delay and notice.

### C. Anticipating the Risk

As has been noted, this difficulty in balancing owners' interests with contractors' interests respecting notice provisions, lies in quantifying the impact of the cumulative effect of changes during a construction project. While a contractor may be in a position to accurately gauge (or absorb) the impact of a small number of changes throughout the course of a construction project, multiple changes and their timing pose a greater challenge. Empirical research may however provide an answer.

C.A. Leonard has analyzed the cumulative impact of multiple changes within 57 different large-scale Canadian construction projects.<sup>39</sup> The conclusion drawn from his research indicates that an increase in the number of change orders over the life of a construction project correlates to a measurable loss of productivity within the project. In other words, while the effect of two isolated changes may lead to a cost that is individually calculable by a contractor, the combination of the two changes involves a loss of productivity in excess of the sum of the costs of the isolated changes themselves. While not universally accepted,<sup>40</sup> Leonard's research has been generally confirmed and expanded upon by William Ibbs, Professor of Construction Management at the University of California at Berkeley, based on data from 162 large-scale American projects.<sup>41</sup>

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<sup>38</sup> Commentary at 20-075. Compare the ICE standard form of contract with the U.K. Joint Contracts Tribunal (JCT) "Standard Form of Building Contract", which is the pre-eminent form used in the U.K. In the JCT contract, notice is not explicitly bound by timeframes, but rather must be effected "as soon as it has become, or should reasonably have become, apparent to him that regular progress has been or is likely to be affected" (Clause 4.23). Moreover, "amount *from time to time ascertained* under clause 4.23 shall be added to the Contract Sum" (Clause 4.25), thus expressly rebutting the possibility that a contractor must make claims only at the time notice is given.

<sup>39</sup> C.A. Leonard, *The Effects of Change Orders on Productivity*, (1988, M.S. Thesis, Concordia University, Montréal).

<sup>40</sup> C.f. *Ibbs*, *infra* note 41 at 2.

<sup>41</sup> W. Ibbs, *Impact of Change's Timing on Labor Productivity*, ASCE JCEM November 2005 [*Ibbs*] at 1219-23. C.f. also W. Ibbs, *The Cumulative Impact of Change on Construction Labor Productivity* (2006).

If Leonard's and Ibbs' conclusions are sound, then the Courts' criticism that contractors are simply failing to exercise proper cost control may have some validity. That is, construction contracts rarely, if ever, provide for a change-control mechanism that anticipates the cumulative loss of productivity arising from multiple changes. Where contractors and owners bargain for a contractual relationship that effectively places no limit upon the number of changes that may be ordered, the courts ought not to interfere with that relationship. A contractor subsequently claiming for "impact costs" or "additional field overhead costs" as a result of a "ripple effect" effectively asks the courts to retroactively impose contractual terms recognizing the productivity loss associated with the cumulative cost of multiple changes. The courts are generally not prepared to provide such relief and prefer to leave it to the contracting parties to more effectively strike their bargain.

A possible solution, then, requires that the cumulative cost of multiple changes be considered during the front-end negotiations leading up to a construction project. While it is not suggested here that Leonard's and Ibbs' research necessarily provides a definitive answer to the calculation of unanticipated productivity costs resulting from multiple changes, their conclusions do represent an aspect of construction projects that should be considered expressly at the time of contracting. When construction cases involving costs arising from change and delay appear in court, questions as to the methodology to use to calculate damages are invariably raised. Well-known techniques, including the 'As-Planned vs. As Built' method, the 'Corps of Engineers' method, the 'Snapshot' method, and the 'Collapsing Technique', are just some of the ways experts and Courts quantify damages arising from delay in construction projects.<sup>42</sup> Contractors and owners are accordingly wise when they, while conducting risk analyses leading into contractual negotiations, ask themselves questions such as:

- Is there a likelihood of multiple changes occurring in this project?
- What effect might multiple changes have on productivity?
- Is there a requirement to fully quantify claims at the time notice is given?
- If a dispute arises, what technique for quantifying claims should be used?

Turning their minds to these questions before a bargain has been struck will leave both owners and contractors settling the more contentious issues facing the Courts in construction cost disputes. Answering these questions at the outset gives owners a better assurance that contractors' cost notices are provided more accurately and with more predictability. Likewise, contractors are less likely to face the prospect of having to undertake the expense of claiming costs following a project's conclusion.

#### **D. The CCDC-2 (2008)**

Given the reliance in Canada on standard form construction contracts, incorporating specific provisions with respect to notice in anticipation of cumulative impact may be easier said than done. As a considerable number of construction projects involve the use of standard-form

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<sup>42</sup> C.f. S.O. Revay, *Presenting the Delay Claim* (1992, Insight Conference: Construction Claims for Changes, Delays and Extras, Feb 21, 1992 in Edmonton and Feb 18, 1992 in Vancouver; Insight Press, Mississauga) for an overview of these techniques.

agreements such as the CCDC-2, contractual allocation of cumulative change may be slow to emerge. The CCDC-2 (2008) stipulated price contract, for example, has only recently emerged 14 years after the release of its predecessor.<sup>43</sup> Moreover, although the CCDC 2 - (2008) provides a revised and uniform approach to notice provisions for multiple types of changes, the new GC 6.6 ("Claims for a Change in Contract Price") does not incorporate a mechanism for claiming cumulative change costs. If another 14 years are required for such a change, the Courts may well be dealing with cumulative cost claims for years to come. This leaves parties to negotiate solutions on a project-by-project basis.

## V. CONCLUSION

The cumulative effect of multiple changes within a construction project can be problematic. While contracts governing construction projects facilitate unanticipated changes throughout the life of a project, contractors can find themselves under strict requirements to promptly provide notice of costs associated with such changes. Where multiple changes occur over the life of a construction project, prompt notice requirements may result in contractors failing to adequately calculate the cumulative costs of the changes. This has led to a number of apparently inequitable consequences for contractors who are unable to obtain full compensation as a result of the multiple changes within particular construction projects. Over the long run, owners may face the prospect of contractors overestimating change-cost calculations in anticipation of cumulative effects that may, in fact, not materialize.

While the problem may be easily identifiable, solutions are elusive. By reference to the approach taken in other jurisdictions, as well as by considering the risks associated with the cumulative effects of changes on construction projects at the time of contract negotiations, both owners and contractors may be able to reduce the risk of involving courts in the adjudication of construction cost and delay disputes.

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<sup>43</sup> G.D. Hersen, *The New CCDC 2-2008 Stipulated Prince Contract - The New Regime* (2007, Canadian Bar Association 2008 National Construction Law Conference, April 10-12, 2008, Banff).