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# Prolongation Costs in Construction Projects

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Claire King, Partner, Fenwick Elliott  
Sanjay Patel, Barrister, 4 Pump Court

# Introduction

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- What are prolongation costs?
- Key case law relating to prolongation costs and their recovery
- What do the standard forms provide for in respect of prolongation costs?
  - JCT
  - NEC
- Things to think about re key types of “*prolongation*” costs:
  - Increased preliminaries or site overheads
    - Labour, plant, equipment and subcontractor costs
  - Increased off-site costs
    - Overheads and loss of profits

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# Prolongation Costs: legal principles



# What are prolongation costs?



- Delays to projects cost everyone money
  - Employer does not have use of its building
  - Contractor incurs time-related costs
- Financial remedies for delay:
  - Employer: Liquidated damages for delay (or general damages)
  - Contractor: Prolongation costs (also known as loss and expense)

# Prolongation costs – the objective



- Objective of prolongation costs: compensate Contractor for its time-related costs that it would not have incurred but for Employer risk delay event.
- SCL Delay and Disruption Protocol, 2nd edition (2017)  
*“The objective is to put the Contractor in the same financial position it would have been if the Employer Risk Event had not occurred.”*
- General approach: Contractor (i) shows it has actually incurred a cost because of delay, and (ii) shows it would not have incurred that cost but for Employer Risk Event.

# LDs v Prolongation Costs: Differences (1)

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- Beware! Analysis for EoT entitlement is different to prolongation costs: see *Costain Ltd v Charles Haswell* [2009] EWHC 3140 at 183-184
- EoTs:
  - Contractor required to complete works by completion date. If not, LDs are payable.
  - Completion date extended pursuant to EoT provision.
  - EoT given if Employer Risk Event affects overall completion of the works. Non-critical work not relevant to EoT analysis.

# LDs v Prolongation Costs: Differences (2)

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- Prolongation costs:
  - Contractor shows that they would not have incurred a particular cost “but for” the Employer Risk Event.
  - No automatic entitlement to prolongation costs if EoT granted;
    - scale of non-critical Contractor delays may mean that Employer Risk Event doesn’t actually cause additional costs to be incurred for the full period of the EoT.
    - As a result “excusable” delay may be different to “compensable” delay

# Illustration of the difference (1)

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# Illustration of the difference (2)



- 2 towers problem. There are two overlapping delays:
  - Employer cannot give Contractor access to Tower 1. Access restricted from 1 January to 1 June.
  - On 1 January, Contractor's groundworks subcontractor for Tower 2 becomes insolvent. New groundworks subcontractor only starts work on Tower 2 on 25 May.
- Answer?
  - EoT from 1 January to 1 June (151 days)
  - Prolongation costs from 25 May to 1 June (7 days)

# How does the “but for” analysis work?



- Surprisingly, not a lot of law on how the “but for” analysis works.
  - Do you just compare as-built information re completion activities affected by critical delays with as-built information re activities affected by non-critical delays?
  - I suggest not: critical delays may mean other parts of works will lay idle if they progress at as-planned rates. Slowing down these works should not reduce a prolongation costs claim.
  - Has the contractor “paced” non-critical works for sensible reasons?

# Takeaway

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- Time doesn't always equal money!!
  - Prolongation cost claims involve thinking about cause and extent of non-critical delays caused by contractor.
  - But, think about the effect that critical delays have had on other workstreams on site.
  - Has the contractor had to slow down non-critical work streams because they are linked (in some way) to critical work that has been delayed?

# What information to submit?



- On site, contractor must make a claim for prolongation costs.  
What does the claim need to include?
  - JCT 26.1.3: *“the contractor shall submit to the Architect such details of such loss and/or expense as are reasonably necessary for such ascertainment”*
  - Detailed submissions preferable, but...
  - No need for *“every conceivable detail”* to be supplied; Architect will bear in mind that they are “no stranger to the project”
  - See *Walter Lilly v Mackay* [2012] EWHC 1773 461-470

# Proving a claim for prolongation costs (1)

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- **Overall key concept**: link the costs claimed with the employer delays alleged.
- Beware of making a “global claim”:
  - Global claims assume, but do not prove that total over-spend attributable to Employer risk delay.
  - Proving over-spend on works not enough. Need to show that the loss is actually related to the Employer risk delay.
  - But sometimes this is very difficult, as courts realise: see *Walter Lilly v Mackay* at paras 474-492

# Proving a claim for prolongation costs (2)

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- Time-related vs task-related costs.
  - Are the costs claimed actually time-related?
  - To be contrasted with task-related costs: i.e. costs that would have been incurred in any event in order to complete the work. Not to be included in prolongation claim.
- Preliminaries thickening:
  - How is the thickening being claimed? As costs associated with a variation or as prolongation?
  - Beware “double dipping”.

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# The standard forms and prolongation costs



# JCT 2016 – Direct Loss and Expense



- An event giving rise to the delay must be a Relevant Matter in order to give rise to an entitlement to loss and expense (Clause 4.19.1)
- Clause 4.20.1: Obligation to notify “*as soon as the likely effect*” known
  - Debate as to whether this is a CP or not
  - Notify asap
- Clause 4.20.2:
  - Obligation to provide “*such information as is reasonably necessary to enable the Employer to ascertain the loss and/or expense incurred.*”
  - Provide with original notification or “*as soon as reasonably practicable*”
- Clause 4.20.3:
  - Obligation to update the Employer
  - “*in such form and manner as the Employer may reasonably require*”
  - Monthly intervals “*until all information reasonably necessary to allow ascertainment of the total amount of such loss and expense has been supplied.*”



# JCT 2016 – Direct Loss and Expense (2)



- What is direct loss and expense?
  - *F G Minter v WHTSO* (1980) 13 BLR 1, CA  
= loss and expense which arises naturally and in the ordinary course of things
  - First limb of *Hadley v Baxendale* (1854) 9 Ex. 341
  - Use of formulae does not detract from this principle
- **KEY:** must be actual losses or expenditure incurred as a direct result of the Relevant Matter
- *Minter v WHTSO* also confirmed that interest / financing charges on direct loss and expense was recoverable
  - JCT 1963 Form

# NEC4 – Compensation Events (1)



- Compensation events
  - No differentiation between Relevant Events and Relevant Matters as per NEC
  - Time and costs impact are assessed together
  - Time bars on notification
- Meant to be assessed in advance (i.e. based on a forecast)
  - EWNs
  - Time bars to encourage early notification
  - Clause 61.3:
    - *“The changes to the Prices are assessed as the effect of the compensation event upon*
    - *The actual Defined Cost of the work already done,*
    - *The **forecast Defined Cost** of the work not yet done, and*
    - *The resulting Fee.”*

# NEC4 – Compensation Events (2)



- In reality CEs are often assessed retrospectively
- Essential you keep records to demonstrate your costs!
- *Northern Ireland Housing Executive v Healthy Buildings (Ireland) Ltd* [2017] NIQB 43

*“Evidence from time sheets and other material, of what the consultant actually did in that period, particularly with reference to the change in instructions, is not only relevant evidence but clearly the best evidence to assist the court in calculating the “compensation” to which the consultant is entitled...*

*... why should I shut my eyes and grope in the dark when the material is available to show what work they actually did and how much it cost them?”*

- Deeny J

# NEC4 – Defined Cost



- Defined Cost in the context of compensation events
  - Shorter Schedule of Cost Components – Options A and B
  - Schedule of Cost Components – Options C, D and E
  - Set the rules for:
    - What is recoverable
    - Rates
- Clause 52.1:

*“All the Contractor’s costs which are not included in the Defined Cost are treated as **included in the Fee**”*
- Double check what is include in the SCC / SSCC and what is deemed to be in the Fee before submitting any claim

# NEC4 – SSCC and SCC

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- **People:**
  - “*Working Areas*”
    - Have you defined these adequately?
    - How do you prove someone was working in the Working Areas that day?
  - Check bespoke amendments for rates etc:
    - How are people’s job titles described?
    - Do they match the schedule of rates?
    - Think about issues proactively when submitting claims
- **Equipment, plant etc:**
  - Check what rates apply
  - Check when you can claim the costs arising

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# Record keeping for Defined Costs

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- Record keeping
  - Even more essential where CEs are not agreed contemporaneously
  - Proof is required!
- Option C:
  - Clause 52.2 provides that the following records must be kept:
    - Accounts of payment of Defined Costs
    - Proof that payments have been made
      - Difficult if you are in a back to back dispute with a SC
    - Communications about and assessments of compensation events for Subcontractors and
    - Other records stated in the Works Information
  - Clause 52.3:
    - The Contractor allows the Project Manager to inspect at any time within working hours the accounts and records which he is required to keep

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# Specific types of prolongation costs



# On-Site Preliminaries or Overheads (1)



- Hoardings, fencing, site huts and cabins, utilities etc
- Follow the rules of the specific contract
  - NEC approach very different to that in JCT
- Shortcuts?
  - Can an average rate for prelims be derived from the tender / BoQs?
    - Not correct legal approach as “*rough and ready*”
      - *Ascon Contracting v Alfred McAlpine Construction Isle of Man* (1999) 66 Con LR 119 TCC

## **BUT**

- May be an easy way forward for both parties depending on circumstances?



# On-Site Preliminaries or Overheads (2)



- Causation:
  - Need to establish actual costs incurred due to the delay
    - Question of fact
  - Records to demonstrate costs
  - Have payments actually been made?
  - Mitigation?

# On-Site Preliminaries or Overheads (3)



- Costs should be calculated by reference to the period of delay NOT the overrun

*Ascon Contracting v Alfred McAlpine*

- “22. *Period for evaluation of compensation* Once it is established that compensation for prolongation is due, **the evaluation of the sum due is made by reference to the period when the effect of the Employer Risk Event was felt**, not by reference to the extended period at the end of the contract.”

*SCL Delay and Disruption Protocol (2nd Ed)*

# Plant and Equipment

- Obey the rules of the contract!
- Possible heads of claim:
  - Hiring charges if appropriate
    - *Shore & Horwitz Construction Co Ltd v Franki of Canada* [1964] SCR 58
  - Loss of opportunity for hiring elsewhere?
    - Need to show there was a lost opportunity
    - *Alfred McAlpine Homes North Limited v Property and Land Contractors Ltd* (1995) 76 BIR 59
  - If no proof re loss of opportunity then:
    - Depreciation and maintenance costs may be recoverable



# Loss of Profits



- Loss of profit arising as a result of a reduced turnover
  - i.e. an inability to tender for and work on other contracts
- Claimant must show that it could have used the lost turnover profitably
  - *B Sunley & Co Ltd v Cunard White Star Ltd* [1940] 1 KB 740 CA
- Must establish this on the balance of probabilities
- What evidence is required?
  - *Walter Lilly v DMW Developments* [2012] EWHC 1773 (TCC) [543]

*“Between January 2006 and September 2008 WLC’s tender success rate was in the order of 1 in 4 (explained in evidence to be based on tenders submitted). During that period WLC had to and did decline a number of tendering opportunities: that was not said vaguely, or in a vacuum of support: **the opportunities received and declined were precisely detailed on a comprehensive schedule attached to Mr Corless’ statement.**” [Emphasis added]*

# Claims for Overheads (1)

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- What are overheads?
  - Costs incurred as part of a contractor's normal business operations
    - Costs of head office staff
    - Lease payments on the head office
    - Electricity, water etc
    - Insurance
- Distinguished from site overheads

# Claims for Overheads (2)



- Two types of claims:

## 1. Increased head office overheads

- Extra staff recruited to delay with a problem project
- Proof of cause and effect

## 2. Lost contribution to head office overheads

- Overheads normally recovered from income of business
- Where project delayed leads to a diminution of income
- Expenditure continues
- Need to establish they would not have been incurred in any event

*“building contractors who, by reason of the delay, suffer increased costs attributable to a particular job which costs are irrecoverable elsewhere, may claim for a proportion of their fixed overheads (including head office salaries) as part of their claim for consequential loss.”*

- *Standard Chartered Bank v Pakistan National shipping Corporation* [2001] EWCA Civ 55

# Loss of OH&P: Formulas



- Formulas can be used where necessary

*“(c) The use of a formula, such as Emden or Hudson, is a legitimate and indeed helpful way of ascertaining, on a balance of probabilities, what that return can be calculated to be.”*

*Walter Lilly v DMW*

- **BUT:**

- Not proof of loss
- ONLY assistance in quantifying the losses where causation
- *Alfred McAlpine Homes North Ltd v Property and Land Contractors Ltd (1995) 76 BLR*

*“...It must also be established that the contractor was unable to deploy resources elsewhere and had no possibility of recovering costs of the overheads from other sources, e.g. from an increased volume of the work. **Thus such formulae are likely only to be of value if the event is causing delay is (or has the characteristics of) a breach of contract...**”*

# Formulas for OH&P (1)



## 1. Hudson formula

Overheads & profit x contract sum x period of delay

100 contract period

Overheads & profit: head office overheads and profit percentage (actual)

- Profit and overheads

## 2. Emden formula

Overheads & profit x contract sum x period of delay

100 contract period

- Profit and overheads

Handwritten mathematical notes and diagrams related to the Emden formula. The notes include:

- A graph showing a sine wave with a peak labeled  $\frac{1}{2} S \frac{\partial V}{\partial T}$ .
- A diagram of a rectangular prism with a diagonal, labeled with  $S$  and  $V$ .
- Equations involving variables like  $S$ ,  $V$ ,  $D$ ,  $H$ , and  $C$ .
- Equation:  $f(u) = \int p(x) e^{-\lambda x} dx$
- Equation:  $H = \sum p(x) \log p(x)$
- Equation:  $TC(Q, q, m) = \sum_{i=1}^n \left[ \frac{\partial}{\partial q} S_i + c_i D_i + \frac{q_i H_i}{2} \left( \alpha_i (1 - \frac{2}{q_i}) - 1 + 2 \frac{\partial D_i}{\partial q} \right) \right]$
- Equation:  $\left[ \frac{\partial \Delta p(s, \phi)}{\partial \Delta M(s, \phi)} \right] = \begin{bmatrix} \beta & -\alpha \\ -\beta & 0 \end{bmatrix} \begin{bmatrix} \Delta p(s, \phi) \\ \Delta M(s, \phi) \end{bmatrix}$
- Equation:  $\int_0^1 \log(x) dx = -1$



# Formulas for OH&P (2)



## 3. Eichleay formula

Step 1: establish the head office overhead costs attributable to the contract as follows: divide the final contract sum (excluding the claim for head office overhead) by the total revenue for the contract period, then multiply the result by the total head office overhead costs incurred during the actual period of performance of the contract.

Step 2: divide the figure resulting from Step 1 by the number of days of actual performance of the contract, to establish a daily rate.

Step 3: Multiply the figure resulting from Step 2 by the number of days compensable delay.

- **Only overheads**

# Hudson Formula

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- Must establish that **but for** the delay it would have recovered the overheads and profit
  - Tendering records must be made available
  - Must show:
    - no other possibility of recovering profits from other work
    - suffered a reduction of turnover as a result of the delay
  - Not suitable where causes and consequences of delays are complex
  - SCL Protocol (2<sup>nd</sup> Edition) does not support its use

*“The use of the Hudson formula is not supported. This is because it is dependent on the adequacy or otherwise of the tender in question, and because the calculation is derived from a number which in itself contains an element of head office overheads and profit, so there is double counting.”*

# Emden Formula



- Preferred by the SCL Protocol over the Hudson formula

*“2.11 In the **limited circumstances where a formula is to be used**, the Protocol prefers the use of the Emden and Eichleay formulae.”*

- *Norwest Holst Construction Ltd v Cooperative Wholesale Society* [1998]

*“350. Thus, an **Emden-style formula is sustainable and may be used as the basis of ascertaining a contractor’s entitlement to payment for loss and/or expense in the following circumstances:***

- 1. **The loss in question must be proved to have occurred.***
- 2. **The delay in question must be shown to have caused the contractor to decline to take on other work** which was available and which would have contributed to its overhead recovery. Alternatively, it must have caused a reduction in the overhead recovery in the relevant financial year or years which would have been earned but for that delay.*
- 3. **The delay must not have had associated with it a commensurate increase in turnover and recovery towards overheads.***
- 4. **The overheads must not have been ones which would have been incurred in any event without the contractor achieving turnover to pay for them.***
- 5. **There must have been no change in the market affecting the possibility of earning profit elsewhere and an alternative market must have been available.** Furthermore, there must have been no means for the contractor to deploy its resources elsewhere despite the delay. In other words, there must not have been a constraint in recovery of overheads elsewhere”.*

# Eichleay Formula



- SCL Protocol:

*“However, in relation to the Eichleay formula, if a significant proportion (more than, say, 10%) of the final contract valuation is made up of the value of variations, then it will be necessary to make an adjustment to the input into the formula, to take account of the fact that the variations themselves are likely to contain a contribution to head office overheads and profit.”*

- Construction Law by Julian Bailey

*“No established usage in construction and engineering disputes under the laws of England, Australia, Hong Kong or Singapore.”*

# Summary

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- Follow the rules of the contract!
- Causation must be established
  - i.e. that the loss you have suffered is a result of the delays caused by the employer
- Evidence is key re causation AND quantum
  - Contemporaneous records are essential
  - Short cuts normally backfire
  - Approach formulas with caution

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**Thank you!  
Questions?**

Claire King, Partner, Fenwick Elliott  
Sanjay Patel, Barrister, 4 Pump Court