



THE DISTINCTION BETWEEN DISRUPTION AND PROLONGATION CLAIMS

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Of the types of claims made for losses under construction contracts, generally more attention is paid to claims for prolongation costs than that of disruption, yet a claim for disruption can be substantial in comparison to prolongation. So, what are disruption claims and how do they differ from prolongation claims?

A contractor is normally paid on the basis of the works carried out plus its on-site overhead costs, commonly called 'Preliminaries' (i.e. site management staff, site huts, etc). In addition, it is paid head office overheads and profit. The contractor's costs in relation to the actual work undertaken are referred to as 'direct costs' whereas those for the Preliminaries are referred to as 'indirect costs'.

It is important to understand when making the distinction between claims for prolongation and disruption that the direct and indirect cost

elements are priced and paid for in different manners. The pricing and payment for the actual work is based on the volume of work undertaken (eg, the amount of wall constructed) whereas the indirect cost are, on the most part, on the basis of time (eg, rental charges for site hutting).

A claim for prolongation costs is, in theory, relatively simple to prepare. To do so, the contractor's time related indirect costs (its Preliminaries) during the alleged employer's delay periods are quantified using accounts records. A prolongation cost claim endeavours to establish the additional costs of the contractor remaining on site for longer than planned, but how does a contractor recover the additional cost (loss and expense) of labour and plant (i.e. the contractor's direct cost) that is undertaking the physical works or indeed variation works,

but also ends up remaining on site longer?

It is under a disruption claim that a contractor will seek to recover these additional direct costs and this would be a relatively simple calculation if the additional cost to the labour and plant were as a result of a suspension to the work. However, this is rarely the case of most disruption claims which become more complicated when, although delayed, the contractor's labour and plant is producing some amount of work and being paid for this work as it is completed.

This situation is complicated further when the contractor suffers delay to areas of work that are not on the critical path of its programme. Such a delay would not entitle the contractor to an extension of time, as the completion date would have not been delayed and therefore prolongation costs could not be claimed.

In such situations, a contractor could still have suffered a loss as the result of actions by the employer but is unable to recover these costs, through a prolongation claim, as the losses suffered would not be to the contractor's indirect costs but instead to its direct costs. However, as the contractor is being paid for undertaking the works on the basis of the amount of work undertaken, why would this lead to a loss when the contractor will ultimately be paid for the works completed and, therefore, why is it necessary for the contractor to claim for disruption?

In order to answer these questions, we need to understand what form of losses a disruption claim seeks to recover. The Society of Construction Law (SCL) Delay and Disruption Protocol distinguishes disruption from delay and defines it as "a disturbance, hinderance or interpretation to the Contractor's normal working methods, resulting in lower efficiency". Further, the SCL advises that disruption claims "relate to loss of productivity in the execution of particular work activities" and that because of disruption "these work activities are not able to be carried out as efficiently as reasonably planned (or possible)". The SCL notes that where disruption events are the contractual responsibility of the other party, the loss and expense incurred due to the loss of productivity may be compensable.

In order to understand this definition, it is first necessary to understand the terms 'production', 'productivity' and 'efficiency' and their importance in the pricing of construction contracts.

Production is the act of making or manufacturing something and it identifies the number of items produced in a given time. Production is measured as a number of outputs, eg, 20m² of blockwork wall. On the other hand, productivity is how many items are produced within a given time. It is measured as the number of items produced divided by the time to produce the items. So, if a blocklayer can lay 20m² of blocks in an hour, the blocklayer's productivity is 20m² per hour.

Unlike production and productivity, which both can be considered as quantitative measurements, efficiency is more a qualitative indicator as it is the measure of the ability to do or produce something without wasted materials, time or energy. In effect, it is how well something is produced in terms of time and effort or, in other words, how 'good' productivity is. Although efficiency can be described as qualitative in nature, it can be measured quantitatively as a percentage ratio between input and output. For example, a typical car engine is 35% efficient meaning that due to inefficiency, 65% of the fuel's potential energy is lost.

These terms are important to the construction industry because it is on the basis of

production, productivity and efficiency that construction work is priced. For example, a blockwork walling rate would typically be priced in the following manner:

$$\text{Blockwork rate per m}^2 = \text{Labour per m}^2 + \text{Equipment per m}^2 + \text{Materials per m}^2$$

The labour cost is calculated on the time taken to lay 1m² of blockwork multiplied by the hourly rate of that labour. Likewise, the equipment cost is calculated using the amount of time the labour needs to construct 1m² of blockwork multiplied by the cost per hour of the equipment. The material cost is simply the cost of the materials needed to construct 1m².

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When work is priced as per the example above, in order to produce the unit output (in this case 1m² of blockwork), the productivity of the labour and equipment are used in the rate calculation. By pricing the work on this basis, a contractor assumes a level of productivity for its labour and equipment. By assuming a set level of productivity, the contractor is also assuming a set level of efficiency. So, if the contractor is able to undertake the work more efficiently, its productivity will increase meaning a better return against the priced rate. By contrast, if the contractor's efficiency goes down, its expected return against the priced rate will reduce.

The rates assumed by the contractor at tender stage will have been set at a level of efficiency that is near to or at the optimum level as a contractor will want to complete the works as quickly and efficiently as possible (at least in theory). In the situation where a contractor

is delayed, the rate at which the contractor produces the work slows, its efficiency falls and therefore the contractor's productivity falls. This can be caused by a number of factors for which either the contractor or the employer can be responsible including variations causing out of sequence working, incorrect or late design causing stacking of trades, shortages of materials or skilled labour, etc.

For example, if a contractor has assumed that a blocklayer can lay 20m² of blockwork in an hour at a labour rate of \$25 per hour then the labour cost is \$1.25 per m². However, if as a result of delays, the blocklayer was only able to lay 15m² of blocks in an hour then the contractor's cost would rise to \$1.67 per m² because of the fixed labour cost. As the contractor had assumed \$1.25 per m² in its tender, the contractor would lose \$0.42 for every m² of delayed blockwork. The essence of a disruption claim is to recover such a loss due to a productivity reduction.

This loss against productivity is also the basis of a claim for acceleration costs as an increase in productivity would also, usually, result in a drop in efficiency compared to that set within the contractor's rates. As productivity increases due to acceleration measures, efficiency decreases due to additional labour gangs and crews working on multiple work fronts, out of sequence working, increased supervision etc. In other words, to quote an old English proverb "too many cooks spoil the broth". As with a disruption claim, it is the loss against the assumed efficiency and rate of production that is claimed.

In principle, a disruption claim should be relatively simple to calculate. So why are disruption claims regarded with such trepidation leading to them being often neglected and presented in very basic manners, such as actual labour costs less planned labour costs?

The main issue with preparing a disruption claim is the detail of information needed to carry out the calculations to a level that adequately shows a drop in efficiency or lost productivity. The different methods of preparing disruption claims all rely on calculating losses against productivity to some extent and the method chosen is normally driven by the information that is available for its preparation. Whilst the example above appears simple, a bill of quantities can, even on relatively simple projects, include hundreds if not thousands of rates.

Disruption claims need thought, time for the detailed analysis and most of all adequate records from which to prepare the calculations. Unfortunately, disruption claims are often regarded as an afterthought once the opportunity to create these records during the progress of the works has been lost.

Construction projects are extremely complex and, in reality, disruption occurs on all projects at some level. In view of the fact the majority of a contractor's costs lie in its direct costs as opposed to the indirect costs (the 80:20 rule approximately applies), it would make sense for a contractor to record what its labour and plant is doing, where it is doing it and when it is doing it, regardless of whether it wants to raise claims or not.

Such records would assist the contractor to counter an employer's usual rejection of the claim on the basis that the assumed level of efficiency and productivity was wrong at tender stage, and that no allowance for the contractor's own inefficiency had been made.

With adequate records in place, the contractor should be able to compare the difference in its actual efficiency achieved for non-disrupted work activities to that of the disrupted work activities and thereby extinguishing the employer's criticism. An employer will often demand that such an analysis (the 'measured mile') is undertaken but it can have a sting in the tail for the employer. As the losses in such an analysis are claimed on the difference between the actual disrupted productivity and actual non-disrupted productivity, the employer may find that it is required to reimburse the

contractor beyond that of the contractor's assumed tender productivity level. For example, on a new motorway project, a contractor was able to show from its records that the non-disrupted road construction was progressed at a considerably higher level of efficiency than assumed at tender. As a result, the employer was required to compensate the contractor for not being able to achieve this higher level of efficiency as a result of the disruption caused by the employer's failure to provide site access to parts of the roadway.

In order to assist the tribunal, an appointed quantum expert will need to provide an opinion in relation to the quantum claimed for the loss of productivity arising from the alleged disruption events. To do this, the expert will focus on the records in relation to the time spent by the labour and plant as well as its supervision in undertaking the work activities. This is to establish whether the reduction in productivity has occurred and the quantum of any associated loss.

If an employer is found to be culpable of causing a loss to the contractor's productivity, the sums claimed can be substantial. It would therefore also be prudent for the employer to insist that the contractor adequately records its resources in reporting progress as opposed to



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just accepting a head count as is often seen. This would allow the employer, for its own protection, to ensure that an appropriate analysis is undertaken to correctly value the loss (if any).

In summary, a disruption cost claim calculates the loss to a contractor's direct costs due to a drop in efficiency and a reduction in productivity caused by the employer. It differs from a prolongation claim, which is based on the losses to the contractor's indirect cost as a result of remaining on site longer than planned, again, due to the employer.