



In this, our Summer 2011 newsletter, our feature article is '*Mitigation and Acceleration*'. The article reviews a contractor's obligation to mitigate delays, together with the different types of acceleration. Our second article is '*An Introduction to 'Earned Value*'; which discusses the methodology and benefits of using Earned Value methodology on a project.

If you wish to discuss any of the matters or points we raise in these articles, please do not hesitate to make contact.

## The Latest News On Roger Gibson's Books

### The first book

Roger Gibson's first book, '*Construction Delays; Extensions of Time and Prolongation Claims*',

**published in 2008 by Taylor and Francis.**

The Chinese version of the book was released in mainland China in April 2011. Meanwhile sales of the book in the western world are proceeding unabated!

### The second book

**The second book, (co-authored with Anthony Edwards): '*Acceleration and Productivity Disputes in Construction and Engineering Projects*', to be published by Wiley Blackwell.**

Preparation of the manuscript for the second book is well underway, and the planned publication date is late-autumn 2011.

## MITIGATION AND ACCELERATION

Most forms of contract contain reference to a contractor's obligation to mitigate delays; including the effects of employer responsible delays.

JCT2005 contains the following at clause 2.28.6.1,

*"the Contractor shall constantly use his best endeavours to prevent delay in the progress of the Works or any Section, however caused, and to prevent the completion of the Works or Section being delayed or further delayed beyond the relevant Completion Date"*

However, in many instances this leads to conflicting interpretations, for example, as to what extent of 'best endeavours', or mitigation, is required. Beyond a certain level, e.g. if substantially more resources are mobilised, it could be interpreted as 'acceleration' to catch up for delays by others, rather than mere 'mitigation', which could lead to further claims for compensation.

"Acceleration" tends to be bandied about as if it were a term of art with a precise meaning, but this is not the case.

The reasons for acceleration usually fall into one of the following categories:

- 1) By agreement or instruction. By agreement between the parties or, if the contract so provides, on the instruction of the architect.
- 2) Unilateral acceleration. Unilaterally on the initiative of the contractor, often categorised as 'mitigation' by the contractor or as 'using best endeavours' by the employer.
- 3) Constructive acceleration. Constructive acceleration is where the contractor argues that he has no real alternative in the circumstances.

### By agreement or instruction

There should be no difficulty in obtaining payment where the architect, in exercise of his powers under a contract, orders acceleration of the work or the employer and the contractor agree acceleration and a claim under the direct loss and expense clause is unnecessary.

However, few standard forms of contract give the architect the power to order the contractor to accelerate.



## MITIGATION AND ACCELERATION (Cont'd)

### Unilateral Acceleration

This is the situation where a contractor accelerates without any agreement with the employer or instruction from the architect. No pressure has been placed on him by the refusal of an extension of time; indeed in this situation it may be that the contractor is reasonably confident of getting an extension of time. The reason for doing so may be order to find work for operatives from another site which is drawing to a close. The result may be that some time is recovered and an extension of time is not required.

In most such cases, the contractor will find it difficult to contend that he was going other than 'using his best endeavours' to reduce delay. It is by no means clear, however, under what contract provision the contractor could be paid even if the architect.

### Constructive Acceleration

This is an argument advanced by a contractor and is based on the architect's failure to give an extension of time to which the contractor believes he is entitled. A contractor will put more resources into a project than originally envisaged and then attempt to recover the value on the basis that he was obliged to do so in order to complete on time, because the architect failed to make an extension of time of the contract period. The problem faced by the contractor is that in the absence of an extension of time he may be faced with liquidated damages being levied against him. He has a stark choice; he can continue to work as planned and efficiently in the hope that he can later successfully demonstrate that he is entitled to an extension of time and that this will be granted. Alternatively, he can accept, temporarily at least, that he is in default and take steps to mitigate the consequences of this temporary default by putting more resources on the project, and / or reorganising the works, so as to finish by the date for completion.

An important question to be asked before this kind of argument can be entertained is the extent to which pressure is put on the contractor; the contractor's problem is one of causation. Where the architect fails to make an extension of time, either at all or of sufficient length, the contractor's route under the contract is adjudication or arbitration. If, as a matter of fact and law, the contractor is entitled to an extension of time, it may be said that he can confidently continue the work, without increasing resources, secure in the knowledge that he will be able to recover his prolongation loss and/or expense and any liquidated damages wrongfully deducted, at adjudication or arbitration. If he increases his resources, that is not a direct result of the architect's breach, but of the contractor's decision.

In practice, it must be acknowledged that a contractor in this position may not be entirely confident; the facts may be complex and the liquidated damages high. Faith in the wisdom of an adjudicator or arbitrator may not be total. It may be cheaper, even without recovering acceleration costs, for the contractor to accelerate rather than face liquidated damages with no guarantee that an extension of time will ultimately be made. As a matter of plain commercial realism, the contractor may have no other sensible choice than to accelerate and take a chance as to recovery. Unless the contractor can show that the architect has given him no real expectation that the contract period will ever be extended and in those circumstances the amount of liquidated damages would effectively bring about insolvency, this kind of claim has little chance of success.

However, under the Housing Grants, Construction and Regeneration Act, a contractor now has the option to address the uncertainty at an early stage and not wait until after completion of the project. He can refer the architect's / contract administrator's refusal of his extension of time claim to an adjudicator during the course of the contract, rather than to arbitration or litigation after completion of the project.

In the United States, a 'constructive acceleration' doctrine has been established to permit a contractor to claim his acceleration costs. The U.S. doctrine, modified for the British construction scene, comprises a six-stage test of the following questions,

1. Is there a delay, resulting from a relevant event, that would entitle the contractor to an extension of time?
2. Has the architect / contract administrator been given notice of the delay in accordance with the contract?
3. Has the architect / contract administrator refused or failed to grant an extension of time?
4. Has the architect / contract administrator, or employer, acted in some manner that can be construed as an instruction to complete by the original or revised date for completion?
5. Has the contractor accelerated its performance?
6. Has the contractor incurred additional costs as a result?



## MITIGATION AND ACCELERATION (Cont'd)

### Recovery of acceleration costs

Usually, if it can be shown that the acceleration has been caused by an event for which there should have been compensation, then there is no reason why the costs should not be recoverable as loss and expense and valued in the usual way under the contract. However, if they cannot be so valued, then it is possible that the claim can proceed on a quantum meruit basis of the reasonable costs of the accelerated works.

Roger Gibson  
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## AN INTRODUCTION TO 'EARNED VALUE'

### What is Earned Value?

When we speak of Earned Value, we generally are speaking of a methodology. While Earned Value is just one element of this methodology, it is the key element. The simplest way to think of Earned Value is to equate it with physical progress. As the name implies, it is something that is gained through some effort. In project management, this value is earned as activities are completed. Consequently, Earned Value is also a measure of progress. As we shall see later, there is a direct relationship between Earned Value and per cent complete.

Current performance is the best indicator for future performance; therefore using recent trend data, it is possible to forecast programme overruns at an early stage in a project. In my view, the most comprehensive trend analysis technique is the 'Earned Value' method.

Earned Value differs from the usual budget verses actual costs incurred model, in that it requires the progress and/or cost of work in progress to be quantified. This allows the project team to compare how much work has been completed against how much was expected to be completed at a given point.

EV is also a means of productivity performance. By knowing what the planned productivity should be at a given time and comparing that value to the actual productivity of completed work, then you can measure the actual productivity achieved. Moreover, because EV provides data in consistent units, usually manhours, progress on vastly different efforts can be combined. For example, earned value can be used to combine metres of cabling, square metres of sheet metal, or tonnes of rebar with effort for mechanical final fix. That is, earned value can be employed as long as a programme is broken down into well-defined tasks.

In a nutshell, 'Earned Value' is a technique where you monitor the project programme, actual work, and work completed to see if the project is on track. Earned Value shows how much of the planned 'time' should have been spent, with regard to the amount of work done so far.

### The History of EV

EV is not a new concept. It has been around in one form or another since the early 1900's, when industrial engineers used it to assess factory performance. They compared physical work output – earned value, or something gained through effort – to the physical work and subsequent actual costs. By the early 1960's, EV had graduated to the 'Programme Evaluation and Review Technique, 'PERT', which relied on resource-loaded networked programmes and budgets to plan and manage work.

### The Benefits of Using EV

#### General

Using the value of completed work for estimating the cost and time needed to complete a project should alert project managers to potential problems early in the project and reduce the chance and magnitude of cost overruns and programme delays.

EV also provides project managers with early warning of developing trends—both problems and opportunities—allowing them to focus on the most critical issues. However, the two main purposes for implementing an EV system are to (i) encourage the use of effective internal cost and programme management control systems, and (ii) allow the employer/client to rely on timely and accurate data for determining contract status.



## AN INTRODUCTION TO 'EARNED VALUE' (Cont'd)

To be effective, an EV system should constitute management processes that serve as a comprehensive tool for integrating project planning and execution across cost, programme, and technical disciplines. In essence, an EV system should provide the means for planning, reporting, and analysing project performance.

### EV as a Planning Tool

EV imposes the discipline of planning all work in sufficient detail so that the cost, technical effort, and programme dependencies are known at the outset.

When EV is used as a planning tool, all work is planned from the beginning, current work in detail, future work outlined at higher levels. As the work is planned to a manageable level of detail, it is broken into descriptive work packages that are allocated a portion of the project budget. These units are then spread across the project programme to form the performance measurement baseline, which is used to detect deviations from the plan and give insight into problems and potential impacts.

### EV as a Management Reporting Tool

EV objectively measures project status with objective methods such as discrete units and weighted milestones to determine work accomplished. These measures are based on specific criteria that are defined before the work starts. As work is accomplished, its value is measured against a time-phased programme. While the guidelines require no specific programming technique, more complex projects typically use a networked, or logic-linked, programme that highlights the project's critical path.

The earned value is measured in terms of the planned work actually completed. This difference of including earned value allows for objective measurements of program status that other reporting systems cannot provide.

### **Summary**

Earned Value provides the project manager with an objective way of measuring performance and predicting future outcomes. This can enable him/her to report progress with greater confidence and highlight any potential overrun earlier. This in turn enables the management team to make cost and time allocation decisions earlier than would otherwise be the case.

It is generally true that past performance is a good indicator of future performance, and as such, Earned Value is a very useful tool for predicting the outcome of projects in terms of time to completion and costs to completion.

**Roger Gibson**  
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### **Contact Us**

Details of our services can be found on our website, <http://www.gibsonconsulting.co.uk/>, but if you would like to discuss how we can help you, Please don't hesitate to contact Roger Gibson on 024 7624 3607 or 07970 119 465, or send an email to [roger.gibson@gibsonconsulting.co.uk](mailto:roger.gibson@gibsonconsulting.co.uk)