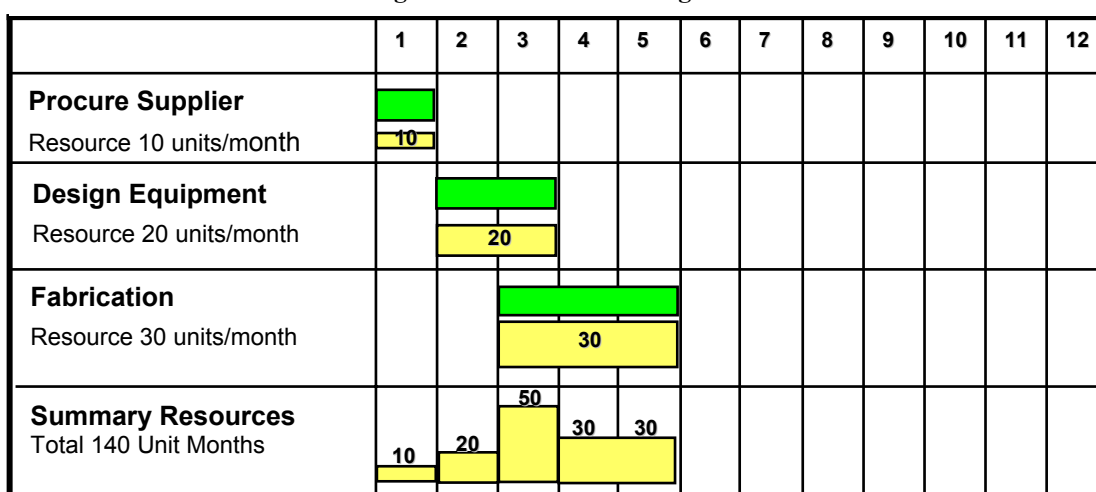


CAUSATION IN CONSTRUCTION LAW

activity. Plant may also be recorded in the same way, but usually the timescale is a day which records the allocation of plant to the particular site. The plant allocation sheets may unusually record when plant is working and therefore using fuel and other consumables and when it is standing. The differences in timescale are taken into account by factoring the hourly or daily costs to arrive at a unit cost for the timescale used on the grid.

- 5.38 The resource may be defined in terms of overall resource, or separated by type of resource such as design and site or separated by trade. Most often resource is shown in terms of expenditure, which allows different resources with different costs and different timescales to be accumulated to provide a single measure of overall effort.
- 5.39 An example of a Resource Histogram is shown below in Figure 13 using the first three activities in the Figure 12 Bar Chart.

Figure 13 – Resource Histogram



- 5.40 The resources for each of the above three activities are different, but are shown on the histogram in terms of the universal units of cost per month. In that way the overall cashflow can be represented. The histogram therefore includes allocations of working hours per labour per month and the working days for plant per month which may not be accurately represented by the continuous unbroken bar for the timescale.

5.3. THE PLANNED PROGRAMME

- 5.41 The use of the “Planned Programme” as the starting point for delay analysis has the following advantages:
- 5.41.1 The planned programme is evidence of the expectations of the Contractor and possibly the Employer at the commencement of the project.
 - 5.41.2 The planned programme is evidence of the context in which decisions were made, particularly in relation to mitigation.
 - 5.41.3 The planned programme is likely to have been used and referred to during the project and therefore allows better understanding of other evidence.

CHAPTER 5 – CAUSATION AND PROGRAMMES

- 5.41.4 The comparison of planned programme and actual events allows an initial estimate of possible delays to activities.
- 5.42 An essential part of the planned programme is the record of the estimates on which durations and timing are based, if it is to be effective in delay analysis.
- 5.43 It is not always easy to identify the appropriate “Planned Programme” for delay analysis.
- 5.44 The Contractor’s agreement with an Employer to carry out a project is usually based on a view of how the work will be carried out. The plan may not be set out in the agreement as a programme, but may be part of a tender or produced during negotiations. Frequently a programme is prepared at commencement of the project either as part of the contractor’s obligations or simply to assist the contractor to manage the project. All such programmes are evidence of how the Contractor planned to carry out the project at that time. The plan is an express statement and demonstrates the understanding of the workscope and of the Contractor’s obligations and the decisions he has made.
- 5.44.1 The plan may demonstrate the decision on the method of procurement, whether by direct labour or by subcontract.
- 5.44.2 The plan may demonstrate the construction logic, expressly or by inference, for the chosen method of construction through the timing of activities.
- 5.44.3 The plan may demonstrate the deployment of resources through the durations of the activities.
- 5.45 The issued tender programme is a high level programme produced to demonstrate to the Employer that the tenderer has understood the workscope and to describe to the Employer the proposed method of working. The main purpose of the issued tender programme is to allow the Employer to make comparisons with proposals by other tenderers and to assist in selection. Frequently the tender programme is prepared in a very short and intensive period where the emphasis is more on showing compliance and achieving a competitive price, rather than an accurate time analysis of the project.
- 5.46 The programme prepared at commencement of the project is more carefully considered than the tender programme and usually more detailed. Such a programme may for the first time include the views of those responsible for carrying out the project rather than the estimators at tender stage. As the project progresses revised programmes may be issued. Frequently short duration programmes are issued for immediate tasks as one week or two week “look-ahead” programmes. The look-ahead programmes are likely to be very detailed but limited to the immediate activities.
- 5.47 The initial planned programme is only one model of the way in which the works could proceed. The initial plan may be incorrect, either under- or over-estimating productivity or durations or the effects of risk events. Some changes to the planned progress will not be the result of external factors but of the inaccuracies inherent in the planned programme. Whenever one assumption in the planned programme is shown to be inaccurate by actual events, other similar assumptions may need to be revised.